MINERALS & MINERALS LIMITED

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Jharkhand-835302

Tel.-06526-223163

CIN NO. U26990JH1970PLC000875

Ref.:

Date

M&M/LHD/ENV/MoEF/ AMTPANI CHIRODIH/994

Date: 20-11-2024

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

Sub: Compliance Report of EC conditions for Amtipani Chirodih Bauxite Mine of M/s Minerals & Minerals Limited located in Gumla, Jharkhand for the period April'24 to September'24.

Ref: Environmental Clearance letter no F.No.11015/31/2017-IA-II (M), dated 13.08.2021

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Amtipani Chirodih Bauxite Mine (130.01 ha)** project of **M/s Minerals & Minerals Limited** located in Gumla, Jharkhand for the period April'24 to September'24.

The lease detail is as below:

Lease area (ha)	Production Capacity (MT)	Lease Period
130.01	450000	11.01.2017 to 10.01.2067

Hope you will find the same in order.

Thanking You

Yours Sincerely

FOR HINDALCO INDUSTRIES LIMITED

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

Enclosure: - As Above

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

Name of the Project	:	Amtipani Chirodih Bauxite Mine (130.01 ha) M/s Minerals & Minerals Ltd
Environment Clearance No & date	:	F.No.11015/31/2017-IA-II (M), dated 13.08.2021.
Period of compliance Report	:	From 1 st April 2024 to 30 th September 2024

Specific Conditions

Condition 1- As per the submission of the PP after the meeting, two alignments have been proposed for the diversion of the road. Alignment 1 will be used for the first three years and will have a protection from the mining area. PP will only do controlled primary blasting to remove Laterite and monitor the vibration and noise at a distance of 100 m towards the roadside to assess any impact of mining. The Alignment 2 will be used after 3 years in the mined out and backfilled area with proper care for subsidence, contraction, and road safety as it has been practiced by same in its other mines.

Reply to Condition 1- Presently a separate road has been constructed for evacuation of Bauxite from the mine. Post mining of the present area, the road will be shifted to the mined-out area after proper reclamation. We are only doing controlled blasting to remove hard laterite and Bauxite ore. Vibration and noise monitoring are being monitored during blasting.

Condition 2- The road will be divided into two parts. Total width will be 12 m with 1 m median. One half of the road will be exclusively dedicated for the movement of villagers whereas the other half will be used for mining operation.

Reply to Condition 2- Agreed. A separate road has been made for movement of villagers and other road is being used for vehicular activities related to mining operations.

Condition 3- PP will also submit the cost benefit analysis looking at the reserves and the total excavation proposed which includes 9.47 LTPA of OB/SB/IB (Laterite), 7.74 LTPA of soil and 1.4 LTPA of quarry waste, leaving only 3.10 of Bauxite market grade out of 21.71 LTPA of total excavation.

Reply to Condition 3- Agreed. The cost benefit analysis has already been made. The exploration is being carried out and it is completed along with analysis details. Post completion of detail exploration the cost benefit analysis will be made based on Bore holes results. Then it will be further complied as per the condition.

Condition 4- There is traffic of villagers at NW direction of the mine intersecting many roads. PP should come out with a clear statement of impact on this transport and traffic due to this mine quantifying the social impact on the utilization of road by villagers due to operation of mine.

Reply to Condition 4- Agreed. Impact study due to transport and traffic has been covered in EIA/EMP Report. Continuous water sprinkling on the road is being done to suppress dust emission.

Condition 5- At the time of revision of mining plan, PP shall submit the action taken as per the mine closure plan of the previous plan after every 5 years.

Reply to Condition 5- Agreed. Currently no revision of the mining plan has been done yet. Progressive mine closure plan is included in the current mining plan.

Condition 6- Robust integrated Wildlife Conservation Plan should be prepared for this mine along with other two mines present in the vicinity of this mine.

Reply to Condition 6- Wildlife conservation plan has already been prepared and approved by PCCF, Wildlife, Ranchi. Adjacent two mines namely Kujam-I and Kujam-II have also been prepared WLCP and approved by PCCF, Wildlife, Ranchi via Office Order No. 50 and 51 dated 03.12.2021 for Kujam I and Kujam II Bauxite Mines respectively.

Standard Conditions

I. <u>Statutory Compliance</u>

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

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

Condition 2- The Project proponent complies with all the statutory requirements and judgment 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 2- Noted. However common cause conditions are not applicable for this mine.

Condition 3- 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

Judgment 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 3- There had been no illegal mining involved. Hence, there is no demand from the State Government regarding common cause matter for Amtipani Chirodih Bauxite mine

Condition 4- 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 4- Noted. However, this mine is located beyond the ESZ boundary. Hence, NBWL Clearance is not applicable for this mine.

Condition 5- This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.

Reply to Condition 5- Noted. There is no forest area involved within the mining lease. Hence this condition is not applicable.

Condition 6- 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 6- Noted. CTE and CTO have already been received from JSPCB, Ranchi.

Condition 7- 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 7- Noted. 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 8- The Project Proponent shall obtain consents from all the concerned landowners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.

Reply to Condition 8-Agreed. Land acquisition for mining purposes is being done with the permission of competent authority of State Government i.e. concerned Deputy Commissioner

(D.C.). The land lease agreement is being done with raiyat (Landowner) after permission of State Govt with provision of returning the land as per the norms set by D.C. The compensation and facilities are being provided as per norms set in agreement.

Condition 9- The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (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 9- Noted and being adhered to.

Condition 10- 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 10- Noted. We have obtained NOC for withdrawal of groundwater from CGWA/CGWB for drinking purposes only. The scan copy of the same NOC is attached below.

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NOC for Ground Water

Condition 11- 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 1- Complied. A copy of clearance letter has already been submitted to Gram Panchayat Mukhiya. Acknowledgment copy of the same is attached herewith as **Annexure 8**

Condition 12- 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 12- Complied. The EC Letter has been submitted to JSPCB for display of same at its Regional office and other government offices.

Condition 13- 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 web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.

Reply to Condition 13- Noted and complied. The information on grant of the EC has been published in two local newspapers. The copy of the advertisement has already been submitted to the Regional Office of the MoEF&CC. Now, the Regional office of MoEF&CC is in Ranchi.

Condition 14- 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 than 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 14- Noted and will be informed if applicable.

II. Air quality monitoring and preservation

Condition 1- The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM₁₀, PM_{2.5}, NO₂, CO and SO₂ etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, 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 already established four ambient air quality monitoring stations in the core zone as well as buffer zone. We have established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring is being carried out and reported to the concerned authorities. Monitoring Report is attached as **Annexure 2.** 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, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM₁₀ and PM_{2.5} are evident such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipment/ machineries and preventive maintenance. Use of suitable water soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level confirm to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

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



Water Sprinkling for Dust suppression.

III. 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 MoEFCC 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. Shallow depth mining is being carried out in the Mine. Therefore, Mining operation does not involve intersection of ground water table. However, we are regularly monitoring the ground water table through installation of piezometer. The copy of the same report is attached herewith as **Annexure 1**.

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

Condition 2-Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained. The natural water bodies and or streams which are flowing in an 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 walls 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 and stream/spring water are being carried out. As shallow depth mining is being carried out, hence there is no intersection of ground water table during the mining operation at present and in future. A piezometer has been installed in mine for monitoring of ground water level. Drinking water is being provided to nearby villages regularly.

The ground water level and water quality reports are being sent regular to regional office of Ministry, CGWA and JSPCB. The same are attached herewith as **Annexure 1 & 2**.

Condition 3- Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on 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. Shallow depth mining is being carried out, hence there is no intersection of ground water table during the mining operation at present and in future. A piezometer has been installed for monitoring of ground water level. The ground water level and water quality reports are being sent regular to regional office of Ministry, CGWA and JSPCB. The same are attached herewith as **Annexure 1 & 2**.



Piezometer at Amtipani Chirodih Mine

Condition 4- The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carry out regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a 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 MoEFCC. 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 its 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 sixmonthly basis.

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

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

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

Reply to Condition 5- There is no polluted water generated during mining operations of this mine.

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

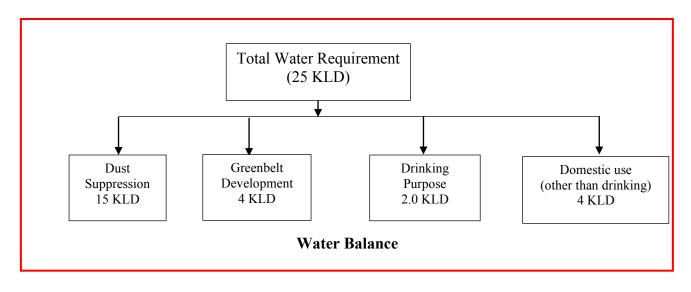
Reply to Condition 6- Rainwater harvesting pond with proper fencing has been planned post creating some voids during mining operations. Photographs of the same will be submitted to your good office once it is constructed.

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- The mine has been started recently. Infrastructure development is in process. The mentioned condition will be complied with once the infrastructure is developed fully.

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 mine is attached below. We are taking water from rainwater harvesting pond located at adjacent mine namely Kujam-II for sprinkling and other activities. However, we have obtained NOC from CGWA for drinking purposes only.



IV. Noise and Vibration monitoring and prevention

Condition 1- The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines. Photo attached below for your kind reference.

Reply to Condition 1- Noted and is being adhered to. Blast vibration monitoring is being carried out periodically as per guidelines of DGMS and the report is attached herewith as **Annexure 7**.

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 limit 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 laborers working in dusty areas 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/ laborers 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.

V. Mining plan

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

Reply to Condition 1- Noted and being adhered.

Condition 2- The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of the 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 and will be adhered in due course.

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 a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

Reply to Condition 3- Noted and being adhered to. The mine has been started recently and Greenbelt development & plantation work have been started. The excavated area is being back filled concurrently and back filled area is being used for afforestation/agricultural activity as required. Monitoring and management of rehabilitated areas is continuing through supervision.



Reclaimed Area

VI. 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 like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of topsoil/OB dumps. The topsoil shall be used for land reclamation and plantation.

Reply to Condition 1- Overburden is being used for concurrent backfilling, and topsoil is being spread on the backfilled area for reclamation and plantation.

This mine has been started recently. Therefore, the present OB dump site is temporary in nature. The mining is being carried out as per the approved mining plan by IBM and the guidelines/circulars issued by DGMS with respect to safety in mining operations is being adhered to. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**.

Condition 2- The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps. **Reply to Condition 2-** Overburden and waste rock are being used for concurrent backfilling, and topsoil is being spread on the backfilled area for reclamation as per mining plan approved by IBM. All Safety measures are being adhered to the guidelines/circulars issued by DGMS. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**.

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

Reply to Condition 3- Mining is in progress. The land reclamation of OB dumps is being done after concurrent backfilling as per approved mining plan in scientific manner. Photographs of the same is attached below.



Reclaimed Area

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 help 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. The OB dump currently present at site is temporary and kept in adherence with DGMS guidelines. However, Overburden and waste rock is being used for concurrent back filling.

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 concerned.

Reply to Condition 5- Noted. The OB dump currently present is temporary in nature and its height is not more than 30 m. However, it is currently being used for concurrent backfilling as per the approved mining plan. Therefore, this condition is not applicable for this mine.

Condition 6- Catch drains, settling tanks and siltation 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- Noted. Garland drains of appropriate size are being constructed in both areas around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if applicable. Sumps of adequate capacity are provided and maintained as required.



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 area 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- Noted. 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.

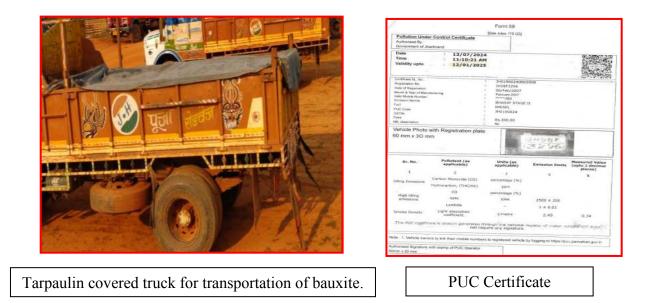
Condition 8-The topsoil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the topsoil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the 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- Noted. Topsoil is stored in an appropriate way within mine lease as per guidelines of DGMS. Concurrent backfilling process is adopted and topsoil is being spread on the backfilled area for reclamation and plantation purposes.

VII. Transportation

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

Reply to Condition 1- - Haul Road has been constructed for transportation of minerals. Mobile water tankers with sprinkling facilities have been provided along-haul roads, loading, unloading & at transfer points to arrest dust emission. Regular maintenance of vehicles is undertaken to minimize vehicular emission. All measures are being taken to control vehicular emission. The vehicles are being covered with tarpaulin while transportation of mineral. Photographs of Tarpaulin covered Truck and PUC Certificates are attached below:



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's like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at 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- Noted. Haul road has been constructed for transportation of minerals. Mobile water tankers with sprinkling facilities have been provided on haul roads, loading, unloading & at transfer points to suppress the dust emission. The Photograph of Water sprinkler is attached below:



Water Sprinkling for Dust suppression.

VIII. 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 Greenbelt shall be developed within first 5 years starting from 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-The mine has been started recently and Greenbelt development & plantation work have been started. Total of 6,550 saplings have been planted during Apr'24 and Sep'24 within this lease. Cumulative 4.40 ha areas have been planted till date.

Green belt development work is also being carried out in safety zone of mining lease. Plantation work is being governed as per approved mining plan and as per EC condition.





Condition 2- The Project Proponent shall carryout 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 such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered to. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for the protection and care of trees.

Reply to Condition 2 - Noted. The mine has been started recently, and greenbelt development and plantation work have commenced. These activities are being carried out in and around the mining lease area, reclaimed areas, etc., in consultation with the local forest department. Roadside plantation has also been undertaken.

Total of 6,550 saplings have been planted during Apr'24 and Sep'24 within this lease. Cumulative 4.40 ha areas have been planted till date.



Roadside Plantation.



Plantation activities

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

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

Condition 4- The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-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. However, this Mine is located outside the eco-sensitive zone.

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	water. 926	n-ma28]82]13_	Applicant M/s Minerals & Minerals Ltd.
संच म्			Court Road, Lohardaga - 835302
	भेगावी विभारतका प्रभव विभागभग् कोर्ट केंद्र, जीवनारामा, बोल्स्ट्राम्ब कींग क्रोड-स्ट्रांस्ट्रा		Cape
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Site Specific Wildlife Conservation Plan

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

Reply to Condition 5 – Noted and complied with.

IX. 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 MoEFCC Regional Office and DGMS on a half-yearly basis.

Reply to Condition 1- Noted and being complied. Regular and periodical medical examination of the workers engaged in the project is being carried out and records are being maintained by the Medical Officer. IME/PME record is attached herewith 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, Diarrhoea 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 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 conducted to educate the local community on healthcare, sanitation, hygiene, and related topics. We organized an awareness drive on heat waves in and around operational areas and distributed ORS packets to workers and staff. "Poshan Kits" were distributed to TB patients to enhance their nutrition and support recovery. Rural medical camps are organized regularly.

Additionally, awareness programs are regularly provided to local villagers, focusing on women's health and hygiene, as well as the hazards of tobacco and alcohol use.

All workers and company staff are provided with appropriate PPE. We also conduct regular IMEs (Initial Medical Examinations) and PMEs (Periodic Medical Examinations) to ensure the health and well-being of workers in the mines.



Medical Camp and Awareness Programme in nearby Schools and Villages

Condition 3 - The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a 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, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for recording purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

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

Condition 4- The Proponent shall maintained 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), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have 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, MoEFCC 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/labors 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, creche 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- Mine has been started recently and infrastructure development is going on. The condition will be duly complied with once the infrastructure development completed, if applicable. However, temporary rest shelters have been constructed for laborers. As most of the workers/ labors are from local village, there is no need for labor camps.

Condition 7- The activities proposed in the Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

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

X. Corporate Environmental 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 documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.

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

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

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

XI. Miscellaneous

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

Reply to Condition 1- Noted and will be complied with. However, Digital Map of land use and land cover is being prepared every year and is being submitted to IBM Ranchi. The same is attached herewith as **Annexure 9**.

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 and the date of 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 - The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & it concerned Regional Office, Central Pollution Control Board and State Pollution Control Board

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

Condition 4- A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC

Reply to Condition 4- A separate environmental management cell with suitable qualified personnel has been set up under the control of a Senior Executive, who is reporting directly to the Head of the Organization. The same is being attached herewith as **Annexure 3**.

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

Reply to Condition 5- Noted and Agreed.

Condition 22- The Ministry 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 22- Noted.

Condition 23- 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 attracts action under the provisions of Environment (Protection) Act, 1986.

Reply to Condition 23- Noted.

Condition 24- The above conditions will be enforced inter-alia, under the provisions of the water (prevention & control of pollution) Act, 1981 the Environment (Protection) Act, 1986 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 and any other Court of law relating to the subject matter.

Reply to Condition 24- Noted.

Condition 25- Any appeal against the 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 25- Noted.

Condition 26- The issue with the approval of competent Authority.

Reply to Condition 26- Noted.

Annexure 1

Piezometer Reading - Amtipani Chirodih Bauxite Mine						
S No	Month	Depth (meter)				
1	Apr-24	32.69				
2	May-24	32.73				
3	Jun-24	31.95				
4	Jul-24	31.45				
5	Aug-24	30.02				
6	Sep-24	30.59				

Annexure-2

ENVIROCHECK

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

State- Jharkhand.

Amtipani Chirodih (130.01ha) Bauxite Mine-Environmental Monitoring Report

April 2024

CONTENT

	Minerals & Minerals : Amtipani Chirodih (130.01ha) Banxite Mine Environmental Monitoring Report April 2024
	Amtipani Chirodih (130.01ha)Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Site (AmtipaniChirodih Bauxite Mine)
2	Weigh Bridge (AmtipaniChirodih Bauxite Mine)
3	Mine Office (AmtipaniChirodih Bauxite Mine)
4	Entrance Gate (AmtipaniChirodih Bauxite Mine)
1	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near Dipa Kujam Village





Test Report No.	: ENVJK/1195/APR/TR(W)24-25	Report Release Date	: 23.04.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1720 : Mine Site; Amtipani Chirodil Bauxite Mine (130.01 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.04.2024 to 14.04.2024 : 15.04.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	= ELES/DOC/SMPL/02
Period of Analysis	: 15.04.2024 to 23.04.2024	 Sampling Done By Sample Condition 	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature ("C) : 32	 Barometric Pressure (mmHg) : 738 	
3	Relative Humidity (%) : 61	4 Weather Condition : Clear	

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m ³	1S 5182 (Part 23): 2006	67	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	38	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part 2): 2001	7.9	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part 6): 2006	21.4	80 (24hrs)			
Ozone (O _i)	µg/m ²	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH3)	µg/m ^N	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	µg/m ⁹	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)			
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m ³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)			
Benzene (C ₈ H ₆)	µg/m ³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m ³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)			

Reviewed by :

30.00%

****End of BG (Saswata Burman Roy, Dy. Quality Manager) Jharkhand 826001 Monsing Co

Authorised Signatory :

Sha

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Kolkata Office : 63/8, Hastraguru Avenue, Kolkata - 700028 (038-25792891/25497490 Email invirocheck50@gmail.com





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Test Report No.	: ENVJK/1196/APR/TR(W)24-25	Report Release Date	: 23.04.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1721 : Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 13.04.2024 to 14.04.2024 : 15.04.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.04.2024 to 23.04.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part 23): 2006	71	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	43	60 (24brs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part 2): 2001	11.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part 6): 2006	25.7	80 (24hrs)	
Ozone (O ₂)	µg/m3	IS 5182 (Part-9): 2019	<20.0	100 (Shrs)	
Ammonia (NH3)	µg/m ³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)	
Benzene (C ₆ H ₈)	µg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)	

Reviewed by :

Sary.



Authorised Signatory :

Elan'

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Kolkata Office : 63/8, Rastraguru Avenue, Kolkata - 700028 [033-25792891/25497490 Email envirocheck50@gmail.com



	1631	REFORT	
Test Report No.	: ENVJK/1197/APR/TR(W)24-25	Report Release Date	: 23.04.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1722 : Mine Office; Amtipani Chirodih Bauxite Mine (130.01 ha)
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 13.04.2024 to 14.04.2024 : 15.04.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.04.2024 to 23.04.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738	
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear	

Discipline:	Chemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part 23): 2006	70	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	36	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part 2): 2001	12.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part 6): 2006	29.9	80 (24hrs)
Ozone (O ₃)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NHs)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu g/m^3$	IS 5182 (Part- 22): 2019	0.017	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C _n H _h)	$\mu g/m^3$	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

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Kolkata Office : 63/8, Rastraguru Avenue, Kolkata - 700028 \$ 033-25792891/25497490 Email : envirocheck50@xmail.com Contribuil by: 4500 (191) \$71025 (1917) (NABL) & Recommending (SPCR BRY HOLT 2011 B. MILL TOOL COLLECTION AND ADDRESS Lah / MIG. N-3 Houning Colory, Dhunhail, Pin - #26001, State - Jharkhand \$ 9830067944 / \$ 9304513737

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	TEST	REPORT	
Test Report No.	: ENVJK/1198/APR/TR(W)24-25	Report Release Date	: 23.04.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ENVJK/2024/AA/1723
		Location	: Entrance Gate; Amtipani Chirodih Bauxite Mine (130.01 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 13.04.2024 to 14.04.2024
	and the second sec	Sample Received Date	: 15.04.2024
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 15.04.2024 to 23.04.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part 23): 2006	54	100 (24hrs)	
Particulate Matter (PM2.5)	$\mu g/m^3$	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part 2): 2001	10.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part 6): 2006	23.5	80 (24hrs)	
Ozone (O ₂)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	$\mu g/m^3$	IS 5182 (Part- 22): 2019	0.014	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annuai)	
Benzene (C ₆ H ₆)	µg/m ¹	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ²	USEPA Method – TO-3A (GC-MS Method)	<0,5	01(Annual)	

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(Bapan Das, Dy. Technical Manager)

Page 1 of 1

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(Saswata Borman Roy, Dy. Quality Manager)







Test Report No.	: ENVJK/1139/APR/TR(W)24-25	Report Release Data	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
CUSTOMER DET/	ALS	SAMPLE DETAILS	
Convert Name	: Hinoules Indestries Limited	Scorple Ref. No. Locarion, Scorping Date	: ENVIK/20240AA/1664 1 New Pok/906068 Village 1 17.04.2024 or 18.04.2024
Address	: Lohardage, Jhurkhond-835302	Sample Received Data Type of Sample Sampling Procedure	: 22.64.2024 : Ambleu Air : ELES/DOC/SMPU/02
Stitutes Statum	: Operational	Sampling Done By	ELES Put Lid
Period of Analysia	- 29 44 2024 16 28 44 2024	Sample Condition	: Sealed JzProserved

1 Avorage Temperature ("C) : 29	2 Bernmettle Pressure (mmHg)	- 742	
3 Reptive Homoiry (%) 51			

	Disciplin	et ChemicalGroup: Atmospheric Pollut	tien	
Parameter	Unit	Test Protocol	Remit	Regulatory Limit
Particulate Matter (PM10)	µ@m [*]	IS 5182 (Part 23): 2006	63	100 (24hou)
Particulate Matter (PM2.5)	HE W.	USEPA 1997a.40 CFR Part 50. Appendix L: 2005	34	60 (24hrs)
Sulphur Di-Oxide (SO2)	ugim	15 \$182 (Part 2): 2001	3,1	80 (24hrs)
Nilrogen Di-Oside (NO3)	µg/m [*]	15 5132 (Part 6): 2006	26.5	80 (24brs)
Ocome (D ₁)	- µgim ³	(\$ 5182 (Part-9): 2019	<20.0	100 (films)
Aitumorita (NH-)	µg'm	IS 5182 (Part+ 25): 2018	<10.0	409 (240)
Caribon Manoside (CO)	ingran ⁴	15 \$182 (Pari-10): 2019 (NDIR Method)	\$1.0	2 (6ins)
Lead (Pb)	pgin	IS 5182 (Part- 22): 2019	-<8,002	f (24hrs)
Nieliel (Ni)	ng/m ³	15 5 182 (Pnr- 26): 2020	<6.0	20 (Annubi)
Anienis (As)	$eg(\pi)$	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (AntianI)
Benzene (C.H.)	listuu,	USEPA Method - TO-3 (GC-MS Mathod)	<2.5	(15(Annual)
Bennetal-Parene	ng/m	USEPA Method - TO-3A (OC-MS Method)	<0.5	01(Annual)

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Page 1 of 1

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Test Report No.	: ENVJK/1140/APR/TR(W)24-25	Report Release Date	: 28.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2014	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ENVJK/2024/AA/1665 : Near Pol Pol Villege : 17.04.2024 to 18.04.2024
Address	: Lohardaga, Jharichand-835302	Sample Received Date Type of Sample Sampling Procedure	: 22.04.2024 : Ambieut Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Feriod of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

 1
 Average Temperature (3C)
 : 29
 2
 Barometric Pressure (mmHg)
 : 742

 3
 Relative Humidity (%)
 : 61
 4
 Weather Condition
 : Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ton	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10) µg/m ³		IS 5182 (Part 23): 2006	56	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part 2): 2001	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	$\mu g/m^3$	15 5182 (Part 6): 2006	24.1	80 (24hrs)
Ozona (O1)	µg/m ³	18 5182 (Part- 9): 2019	<20.	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): 2019 (NDIR Method)	<1.0	2 (8hrs)
Load (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	<0.0	1 (24hrs)
Nickel (Ni)	ag/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Aunual)
Arsenie (As)	tig/m ¹	USEPA Method - IO-3,5 (ICP-MS Method)	<2.6	06 (Annual)
Bonzene (C ₆ H ₆)	pg/m1	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	USEPA Method - TO-3A (GC-MS Method)	-0.1	01(Annual)

Reviewed by :

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(Saswata Borman Roy, Dy, Quality Manager)

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TEST REPORT

Test Report No.	: ENVJK/1141/APR/TR(W)24-25	Report Release Date	: 28,04,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer, Name	- Flindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ENVJK/2024/AA/1666 : Near Shakhuspani Village : 17:04.2024 to 18:04:2024	
Address	-: Lolinedaga, Jharkhaod-835302	Sample Received Date Type of Sample Sampling Procedure	: 22,04,2024 : Ambient Air : ELES/DOC/SMPL/02	
Mides Status	< Operational	Samoling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Scaled & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature ("C)	: 30	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 62	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	fion	
Parameter Unit Particulate Matter (PM10) µg/m ³		Test Protocol	Result	Regulatory Limit 100 (24hrs)
		1S 5182 (Part 23): 2006	68	
Particulate Maiter (PM2.5)	µg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006 36		60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m²	IS 5182 (Part 2): 2001	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part 6): 2006	24.1	80 (24hrs)
Ozone (Oh)	µg/m ²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³ IS 5182 (Part- 10): 2019 (NDIR Method)		<1.0	2 (8hrs)
Lead (Ph)	µg/m ⁸	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ²	15 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenia (As)	ng/m³	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CaH ₀)	µg/m ⁸	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

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(Saswata Burman Roy, Dy. Quality Manager)



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TEST REPORT

Test Report No.	: ENVJE/1142/APR/TR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETAILS Costomer Name : Hindalco Industries Limited		SAMPLE DETAILS	
Costoner Name	: Hindaleo Industries Limited	Sample Ref. No. Location Sampling Date	: ENVJK/2024/AA/1657 : Near DipeKujam Village : 17.04.2024 to 18.04.2024
Address	 Cohardaga, Jhankhand-835302 	Sample Received Date Type of Sample Sampling Procedure	: 22.04,2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pot. Ltd.
Period of Analysis	: 22.64.2024 to 28.04.2024	Sample Condition	; Sealed &Preserved

METEOROLOGICAL INFORMATION

1 Average Temperature (°C) : 31	2 Barometric Pressure (utm14g) : 742	
3 Relative Humidity (%) : 59	4 Weather Condition	: Clear	

	Disciplia	o: ChemicalGroup: Atmospheric Pollui	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu g/m^3$	1S 5182 (Part 23): 2006	58	100 (24hrs)
Particulate Matter (PM2.5)	$\mu g/m^3$	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	33	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 51#2 (Part 2): 2001	7,2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part 6): 2006	23.1	80 (24hrs)
Ozone (O1)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	pg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monexide (CO)	mg/m ³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lend (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ag/m ³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m3	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m ¹	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	USEPA Method - TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

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(Saswata Burman Roy, Dy. Quality Manager).



Authorised Signatory :

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(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Kultata Office - 83/8, Restregulu Avenue, Kalkata - 700028 (033-35782201/25422400 Email renvirochect50@jemail.com

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Chirodih (130.01ha) Bauxite Mine-Environmental Monitoring Report

May 2024



CONTENT

	Amtipani Chirodih (130.01ha)Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Mine Site (AmtipaniChirodih Bauxite Mine)	
2	Weigh Bridge (AmtipaniChirodih Bauxite Mine)	
3	Mine Office (AmtipaniChirodih Bauxite Mine)	
4	Entrance Gate (AmtipaniChirodih Bauxite Mine)	
	AMBIENT AIR QUALITY- BUFFER ZONE	5
1	Near Pakri Gada Village	
2 > 1	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Neur Dipa Kujam Village	
	Drinking Water	





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

GINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2797	Report Release Date	: 23.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000763F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3066 : Mine Site; Amtipani Chirodit Bauxite Mine (130.01 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.05.2024 to 16.05.2024 : 18.05.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION	
1	Average Temperature (*C) : 34	2 Barometric Pressure (mmHg) : 742
3	Relative Humidity (%) : 59	4 Weather Condition : Clear

Discipline: Chemical		Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m ³	IS 5182 (Part- 6): 2022	21.9	80 (24hrs)
Ozone (O ₂)	µg/m ²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m [‡]	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	15 5182 (Part- 22): 2019	0.01	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: 2021	<2.0	06 (Annual)

Page 1 of 2

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Save Environment, Save Future'



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

GINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2797	Report Release Date	: 23.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000763F			

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

AKASHYKUMAR

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

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

Page 2 of 2

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

NGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2798	Report Release Date	: 23.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000764F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3067 : Weigh Bridge; Amtipani Chirodił Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.05.2024 to 16.05.2024 : 18.05.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION 1 Average Temperature (°C) : 34 2 Barometric Pressure (mmHg) : 742 3 Relative Humidity (%) : 59 4 Weather Condition : Clear

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	77	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	45	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)
Ozone (O ₃)	µg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH2)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m*	15 5182 (Part- 22): 2019	0.014	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

GINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2798	Report Release Date	: 23.05.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400000764F		

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

cherroby Reviewed by AKASH KUMAR Quality Manager ELES PVT LTD.

****End of Report****

Authorised Signatory

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

Page 2 of 2

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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/RNC/2024/2799	Report Release Date	: 23.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000765F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3068 : Mine Office; Amtipani Chirodih Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.05.2024 to 16.05.2024 : 18.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved	

1	Average Temperature (°C) : 34	4	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%) : 59)	4	Weather Condition	: Clear	

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	75	100 (24hrs)
Partículate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	15 5182 (Part- Il/Sec- 1): 2023	12.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m ³	IS 5182 (Part- 6): 2022	30.4	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH2)	µg/m ⁵	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.019	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ⁷	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2799	Report Release Date	: 23.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000765F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	OI(Annual)	

tomore a AKASH KUMAR Quality Managor FLES PVT. LTD.

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 2044ECE9713D124

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2800	Report Release Date	: 23.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000766F			

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/3069		
		Location	: Entrance Gate; Amtipani Chirodit Bauxite Mine (130.01 ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date	1 15.05.2024 to 16.05.2024		
	30%	Sample Received Date	: 18.05.2024		
		Type of Sample	: Ambient Air		
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02		
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 34	2	Barometric Pressure (mmHg)	; 742
3	Relative Humidity (%) : 59	(4)	Weather Condition	: Clear

Discipline: (Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	9,9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022.	23.1	80 (24hrs)
Ozone (O ₅)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m"	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ²	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m3	ELES/AIR/SOP/01: 2021	<2.0	66 (Annual)

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2800	Report Release Date	: 23.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000766F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (CsH6)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASHKUMAR Quality Manager ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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ULR No.

ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TURUDANA HATIA, RANCH-E34003 (IHARKHAND) GST NO-20AAECEST130124

: TC135872400000649F

NGINEERING SERVICES PV7. LTD.

Email: info@elesal.co.in, eles.conchi@amail.com Phane no.: 0651-2290103 Websitz : www.elespi.co.in



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

USTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: FLES/RNC/2024/AA/297 : Near Pakri Gada Village : 10,05.2024 to 11.05.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 13.05.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

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

Discipline:	Chemical	Group: Atm	ospheric Polla	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	59	100 (24hus)
Particulate Matter (PM2.5)	pg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- II/Sec- 1); 2023	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Pari- 6): 2022	24.9	80 (24hrs)
Ozone (O3)	jig/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ¹	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hiir)
Lead (Pb)	ug/m ²	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (NI)	ng/m ⁵	1S 5182 (Part- 26): 2020	<6.0	30 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01:2021	<2.0	05 (Annual)

Page 1 of 2

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Smoli: <u>Info</u>@elessil.co.in , eles.conchi@omail.com Phone no.: 0651-3290103 Website : www.clespl.co.in

AVIGES PVT, LTD.



TEST REPORT

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

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₅ H ₆)	µg/m ³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁴	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKRONWANNIA Quality Managar ELES PVT. LTD.

**** End of Report****

Anthonised Signatury

Dr. Deependrs Kurran Siniva Ph. O Environmental Engl ELES Pirt. Ltd. Technicel Mathematic

Page 2 of 2

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FLOT NO-30, MANSAROVAR ENCLAVE, TUFUDANA HATTA, RANCHI-834003 (HARKHAND) SST NO- 25AAECEST140124 ENGINERALIYO SERVICES PVT. LTD. Emoli: <u>info@elessi.co.in</u>, eles.ronchi@amail.com Phane pa.: 0651-2290103

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2681	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000650F	112112111011101101000000000000000000000	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: HLES/RNC/2024/AA/2972 : Near Pol Pol Village : 10.05.2024 to 11.05.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 13.05.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	; Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

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

Discipline: (Chemical	Group: Atm	ospheric Palla	rtiou
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	18 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m"	IS 5182 (Part- 6): 2022	24.7	\$0 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (SH ₃)	$\mu g/m^2$	IS 5182 (Part- 25): 2018	<10.0	400 (34hrs)
Curbon Monoxide (CO)	mg/m [¥]	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	htta, w	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m1	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	rtg/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annunl)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2681	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC13587240000650F		

Discipline: Chemical		Group: Atmospheric Pollution			
Paramoter	Unit	Test Protocol	Result	Regulatory Limit	
Bonzene (C ₄ H ₄)	μу/π ²	ELES/GC/SOP/06: 2023	<2.5	05(Annun!)	
Benzo-(a)-Pyrene ng/m ³		ELES/GC/SOP/05: 2023 <0,		(annual)	

-control-Reviewed by

AKASH KUMAR Quality Monagur ELES PVT. LTD.

****End of Report****

Authorised Signatory Dr. Deependra Kolotar String Ph. D Environmental Gross GLES Pvt. Ltd. Technical Manager

Page 2 of 2

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TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2973 : Near Shakhuapani Village : 10.05.2024 to 11.05.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 13.05.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Scaled & Preserved

METEOROLOGICAL INFORMATION 1 Average Temperature (%C) : 33	2	Barometric Pressure (minHg)	: 742
Relative Humidity (%) 159			: Clear

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	60	100 (24brs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₁)	µg/m ³	IS 5182 (Part-11/Sec-1): 2023	7.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m ²	IS 5182 (Part- 6): 2022	23.5	80 (24hrs)	
Ozone (O ₂)	pg/m ²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammoniit (NH3)	ug/m ¹	TS 5182 (Part-2.5): 2018	<10.0	400 (24brs)	
Carbon Monoxide (CO)	mg/m⁵	15 5182 (Part- 10): 2019 (NDIR, Method)	<1.0	2 (8hrs)	
Load (Pb)	µg/m ²	15 5182 (Part- 22): 2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

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

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Bonzene (CaHa) µg/m ³		ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ngimi	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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**** End of Report****

Authorized Signatury Dr. Deependra Kuman Siniha Ph. D Environmental Sings ELES Pvt. Ltd. Technical Idenmina

Page 2 of 2

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	1	EST REPORT		
Test Report No.	: ELES/RNC/2024/2683	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400006652F			

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

-	Average Temperature (%C) : 33	1.2	Barometric Pressure (mmHg)	> 747	
4.	www.age.remperature(.c)	*	Daromente riessure (minitig)	- 196	
3	Relative Humidity (%) : 59	4	Weather Condition	Clear	

Discipline	Chemical	Group: Atmospheric Pollation			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ²	15 5182 (Purt- II/Soc- 1): 2023	7.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Pari- 6): 2022	24.7	80 (24hrs)	
Ozone (O ₂)	µg/m"	IS 5182 (Parts 9): 2019	<20.0	100 (Shrs)	
Animonia (NH ₁)	µg/m ^T	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	my/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<).0	2 (Shrs)	
Lead (Pb)	µg/m ²	15 5182 (Purt- 22); 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Parti- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m*	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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Test Report No.	: ELES/RNC/2024/2683	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000652F		

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

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**** End of Report****

Authorised Signatory Dr. Deependra Kumar Sinhu

Ph. D Environmentel Engg ELES Pvt. Ltd. Technical Idamentel

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2899	Report Release Date	: 28.05.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400000859F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/DW/3073 : 16.05.2024 : 18.05.2024 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source/Location of Sample	: Near Office, Amtipani Chirodih Bauxite Mine (130.01 ha)	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 18.05.2024 to 28.05.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical	Discipline : Chemical Group :				ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 25.6 °C)		APHA 24th Ed 2023, 4500-H	6.53	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.24	1.0	5.0
Taste		APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	*	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/t.	APHA 24 th Ed.2023, 2540B,C&D	59	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CI B	8.6	250	1000
Fluoride (as F)	mg/L	APHA 24th Ed.2823, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₃)	mg/L	APHA 24 th Ed.2023, 2320 B	22.6	200	600
Total Hardness (as CaCO ₁)	mg/L	APHA 24th Ed.2023, 2340 C	38.9	200	600
Sulphate (as SO4)	mg/L	APHA 24 th Ed.2023, 4500 SO ₄ ⁻² -E	BDL (DL: 1.0)	200	400

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2899	Report Release Date	: 28.05.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	; 30.03.2024
ULR No.	: TC135872400000859F		

Discipline : Chemical Group : Water				Regulatory Limi as per IS10500:20	
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	BDL (DL: 0.5)	45	No Relaxation
Phenolic Compound (us C _s H ₂ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	1S 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2	1.0
Calcium (as Ca)	mg/L	APHA 24 th Ed.2023, 3500 Ca B	10.3	75	200
Anionic Surfactants (as MBAS)	mg/l.	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	al	Gro	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxatio
Boron (as B)	mg/L	IS 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	2.4
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium(as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxatio
Copper (as Cu)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxatio
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.081	1.0	1.0
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxatio
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxatio

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TEST REPORT

Test Report No.	; ELES/RNC/2024/2899	Report Release Date	: 28.05.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400000859F		

Discipline : Chemical	Discipline : Chemical Group : Residues in Water				ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Selenium (as Se)	mg/L	1S 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 24th Ed 2023; 3111B	1.39	5	15
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0,1	No Relaxation
Polychlorinated biphenyls (PCB)	μg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation
Pesticides				L	imit
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		20
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Butachior	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL; 0.5)	3.0	
Malathion	рд/L ELES/GC/SOP/01: 2023 (DL: 0.5)		BDL (DL: 0.5)	190	
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0	30
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1.0	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	(0.03

Page 3 of 4

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

GINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2899	Report Release Date	: 28.05.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400000859F		

Pesticides				(
Parameter	Unit	Test Protocol	Result	Limit
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.01
Delta HCH	µg/1.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0,40
DDT(o,p and p,p-isomers of DDT,DDEand DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Grou	p: Water	
Total Coliform (Ounlitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shan not be detected

Remarks: I. pH and RFC done at Lab.

AKASH KUMAR Quality Managor ELES PVT. LTD.

****End of Report****

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

Page 4 of 4

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

VGINEERING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/2899	Report Release Date	; 28.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/DW/3073	
		Sampling Date	: 15.05.2024	
		Sample Received Date	: 16.05.2024	
		Type of Sample	: Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source/Location of Sample	: Near Office, Amtipani Chirodih	
			Bauxite Mine (130.01 ha)	
		Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 18.05.2024 to 28.05.2024	Sample Condition	: Sealed & Preserved	

Discipline : Ch	emical	Group : Water			atory Limit 5 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	Cl6, IS: 3025 (P-39)	BDL (DL: 0.1)	1.0	No Relaxation

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

AKASHKUMAR

Quality Managur

FLES PVT. LTD.

****End of Report****

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

Page 1 of 1

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Chirodih (130.01ha) Bauxite Mine-Environmental Monitoring

Report

June 2024



CONTENT

	Minerals & Minerals : AntipaniChirodih (130.01ha)Bauxite MineEnvironmental Monitoring Report June2024
	Amtipani Chirodih (130.01ha)Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Site (AmtipaniChirodih Bassxite Mine)
2	Weigh Bridge (AmtipaniChirodih Bauxite Mine)
3	Mine Office (AmtipaniChirodih Bauxite Mine)
4	Entrance Gate (AmtipaniChirodih Bauxite Mine)
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near Dipa Kujam Village





PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 200AECE9713D124

WGINEERING SERVICES PVT. LTD.

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



Test Descet No.	10000000000000000000000000000000000000	ST REPORT	- 20.06.2024	
Test Report No.	: ELES/RNC/2024/3526	Report Release Date	: 29.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001477F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4034 : Mine Site; Amtipani Chirodih Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.06.2024 to 22.06.2024 : 24.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	; ELES Pvt. Ltd. ; Sealed & Preserved	

MI	ETEOROLOGICAL INFORM	ATION			
1	Average Temperature (°C) :	31	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) :	62	4	Weather Condition	: Partiy Cloudy

Discipline: (Themical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	64	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- II/Sec- 1): 2023	7.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	22.3	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₅)	µg/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m'	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST ND-- 20AAECE97120124

GINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/3526	Report Release Date	: 29.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001477F			

Discipline: Chemical		Group: At	nospheric Pollu	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ^{it}	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

SIRVER

Reviewed by AKASH KUMAR Quality Managur ELES PVT. LTD.

****End of Report****

Authorised Signatory Dr. Deependra Kumal Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technicol Menager

Page 2 of 2

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



to the serve	11	ST REPORT		_
Test Report No.	: ELES/RNC/2024/3527	Report Release Date	: 29.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001478F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4035 : Weigh Bridge; Amtipani Chirodil Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.06.2024 to 22.06.2024 : 24.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24,06,2024 to 29,06,2024	Sampling Done By Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION

 1
 Average Temperature (°C)
 : 31
 2
 Barometric Pressure (mmHg)
 : 742

 3
 Relative Humidity (%)
 : 62
 4
 Weather Condition
 : Partly Cloudy

Discipline: Chemical		Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	70	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	12.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ²	IS 5182 (Part- 6): 2022	25.9	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5382 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ²	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

NGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3527	Report Release Date	: 29.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001478F			

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

AKASHTHUMAR Quality Managor ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-\$34005 (IHARKHAND) GST NO- 20AAECE97130124

GINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3528	Report Release Date	: 29.06.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400001479F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4036 : Mine Office; Amtipani Chirodil Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.06.2024 to 22.06.2024 : 24.06.2024 : Ambient Air	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION

: 742 Barometric Pressure (mmHg) 2 :31 Average Temperature (°C) 1 : Partly Cloudy Weather Condition 4 : 62 Relative Humidity (%) 3

Discipline: O	Chemical	Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	71	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	39	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part- II/Sec- 1): 2023	12.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ²	IS 5182 (Part- 6): 2022	28.7	80 (24hrs)	
Ozone (O1)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ⁹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.016	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ⁵	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-3D, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO: 20AAECE9713D124

NGINEERING SERVICES PVT. LTD.

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	TES	T REPORT		
Test Report No.	: ELES/RNC/2024/3528	Report Release Date	: 29.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001479F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by AKASH KUMAR Quality Manager FLES PVT. LTD.

****End of Report****

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

Page 2 of 2

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

GINEERING SERVICES PVT. 17D.

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



	THE PERSON AND PROPERTY.
TEST	REPORT

Test Report No.	: ELES/RNC/2024/3529	Report Release Date	: 29.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001480F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4037 : Entrance Gate, Amtipani Chirodil Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.06.2024 to 22.06.2024 : 24.06.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sample Condition	: Sealed & Preserved	

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METEOROLOGICAL INFORMATION :31

: 62

- Average Temperature (°C) 1 3
 - Relative Humidity (%)

Barometric Pressure (mmHg) Weather Condition

: Partly Cloudy

: 742

Discipline: O	hemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	9.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (O1)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Nî)	ng/m ¹	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PVT. 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/2024/3529	Report Release Date	: 29.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001480F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASHICKUMAR

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

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUNIDANA HATLA, RANCHI-834008 (IHARKHANC) UST NO- 200450597130124

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



TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/3844	
		Location	: Near Pakri Gada Village	
		Sampling Date	: 17.06.2024 to 18.06.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 20.06.2024	
	DATE AND BOTHER AND ADDRESS OF	Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	: Sealed & Preserved	

	Average Temperature (*C) : 38	2	Barometric Pressure (mmHg)	; 742
1	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: 4	Chemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	(S 5182 (Part-23): 2022	57	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-II/Sec-1): 2023	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μgʻm ^b	IS 5182 (Part- 6): 2022	24.1	80 (24hrs)
Ozone (O _i)	ug/m	IS 5182 (Part- 9): 2019	<20.0	100 (Shra)
Ammonia (NH ₂)	µg/m ¹	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	ugim	1S 5182 (Part- 22); 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m	15 5182 (Part- 26): 2020	<6.0	20 (Annual)
Amenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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Website . www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/3393	Report Release Date	: 24,06,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001344F		

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₅ H ₄)	µg/itt ³	ELES/GC/SOP/06: 2023	\$2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASHWUMAR

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

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

Page 2 of 2

The Destament statut as Test Report, is install by the Laboratory under General Terms and Conditions, only on Company letter head is pre-approved formor. The results theme in the Test Report refer or relates only to the potomolysis does by the Laboratory and The Information should on the Test Report reflects the individual does by the Laboratory in the time of involvement only and within the inner of claim a transmission. The Laboratory is responsible for all the information or data provided on the tegort, energy the information which is provided by the client. The Report memory is responsible for all the information or data provided on the tegort, energy the information which is provided by the client. The Report memory is responsible for all the information or data provided on the tegort, energy the information which is provided by the client. The Report memory is responsible for all the information out at centers, without price weights approved of the Laboratory. The Report is full as in gast shall sol be published, advertise, used for any legal sections united price premision. Any time there is an all form the Management of the Laboratory. Atomicies is during to the Similation of Hability, compensation and provide times. Any time the samples are retained to Station of the content or apparents of the Test Report in universal and effective may be presented to the fullest entities of the two. All the samples are retained the Station form the time of relationships from the Test Report. The samples from Regulatory bodies on to be instanted to the fullest entities of Originations of Complexities and the Station of Complexities will be deter within the fullest form the samples from the samples from the samples from the samples from the provide on the best of the test of the Stationary of the Stationary to the Stationary of the Stationary

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NOINEERING SERVICES PVT. LTD. Email: Info@elecol.co.in , eles ranchi@omail.com

Phone no.: 0551-2290103

Website : www.elenal.te.lis

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Test Report No.	: ELES/RNC/2024/3394	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001345F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3845 : Near Pol Pol Village : 17.06.2024 to 18.05.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20.06.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	: Sealed & Preserved

Average Temperature (°C) : 38	Barometric Pressure (mmHg) : 742	
Relative Flumidity (%) : 59	4 Weather Condition : Clea	1

Discipline: (Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	1S 5182 (Part-23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	15 51#2 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO3)	µg/m ³	IS 5182 (Part-II/Sec- 1): 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO3)	µg/m ³	IS 5182 (Part-6): 2022	24.9	80 (24hrs)
Ozone (O ₃)	µg/m ²	[S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	pgém	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ngim	18 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/ATR/SOP/01: 2021	<2,0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCH-E24003 (IHARKHAND) BIT NO-20A45CERT120124 NGINEERING SERVICES PVT. LTD.

Email: anfoiDelespi.co.in , <u>eles ranchi@gradi.com</u> Phane no.: 0651-2290103 Veebalte : www.elespi.co.in



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Test Report No.	: ELES/RNC/2024/3394	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28,03.2824
ULR No.	: TC135872400001345F		

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

o-miP/ AKASHMAR

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

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCH-834003 (HARKHAND) SST NO1-30AAECEVT13D124

Email: info@elecol.co.in . elec.rondbl@omail.com Phone no.: 0551-2290103 Websitz : www.elecol.co.in

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TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3846 : Near Shakhuapani Village : 17.06.2024 to 18.06.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20.06.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	: Senled & Preserved

Average Temperature (%C) : 38	2	Barometric Pressure (mmHg)	: 742
3 Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5382 (Part-24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ³	15 5182 (Part-II/Sec-1): 2023	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	24.2	80 (24hrs)	
Ozone (O3)	µg/m ³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24brs)	
Carbon Monoxide (CO)	ma/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lond (Pb)	pgin	IS 5182 (Part- 22): 2019	0,007	1 (24hrs)	
Nickel (Ni)	ng/m ²	(S 5182 (Part-26): 2020	<6.0	20 (Annuni)	
Atsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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FLOT NO-32, MANSAROVAR ENCLANS, FUPLIDANA HATLA, RANCHI-834003 (PHARMAND) BIT NO-2044ECEPTISO124 NGINEERING EERVICES PVP, LTD. Email: Info@elesol.co.in , eles renchi@omail.com Phone no.: 0651-2290103 Website : www.elesol.co.in



TEST REPORT

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m*	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASTERUMAR

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

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

Page 2 of 2

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PLOT NO-30, MANSARGVAR ENCLASS, TUPUCIANA HATIA, RANCHI-834003 (HARKHAND) OST NO-2044ECE97120124

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Erial: Info@elecal.co.in , elec.reachi@arral.com Phone no.: 9651-2236103 Vicenitz : www.elecal.co.in

NOINKERING SERVICES PVT. LTD:



TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3847 : Near Dipa Kujam Village : 17.06.2024 to 18.06.2624	
Address	: Lohardagn, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20:06:2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvi, Ltd.	
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	: Sealed & Preserved	

Average Temperature (%C) : 38	2	Barometric Pressure (mmH)	() : 742
Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-II/Sec-1): 2023	7.4	.80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m)	[S 5182 (Part- 6): 2022	23.8	80 (24hrsi)
Ozone (O ₂)	ug/m ³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	uw/m ³	15 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ⁷	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenie (Asj	ng/m ³	ELES/ATR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

The Dimension stated as Test Report, is sound by the Laboratory under Ontered Terms and Conditions, only on Company letter hand in pre-approved formut. The structure in the Test Report reflects the findings does by the Caloratory of the time of second second within the time of cleans of cleans is accurately only. Our information under on the Test Report reflects the findings does by the Caloratory of the time of second second within the time of cleans of cleans is accurately in the caloratory in temporable lie all time does not all the information of the findings does by the Caloratory of the time of second second by the cleans of cleans is instructions. The Caloratory is responsible lie all the information of data provided on the report, without provided the tablements. One Report is full or in part shall not be performed encode in the tablements and only part of the Laboratory. One Report is full or in part shall not be performed encode and one provided by the Caloratory without provided on the caloratory. One Report is full or in part shall not be performed encoded and provided the term of second by the Caloratory. Attention is drawn to the limitation of likely the performance and perform a drawn to the limitation of likely the performance and perform of the laboratory attention of the second term of the Caloratory. Attention is drawn to the instation of likely the region of the laboratory of the Test Report. The samples from Regionary border are in to compared to the fully the Test Test Report. The samples from Regionary border are in to compared to the fully the Report. The samples from Regionary border are in the time period and before, no compliants will be accepted the remotion of the fully from the report of the fully from the report of the fully from the report of the fully the test of the remotion of the fully from the report of the fully from the report. The samples from Regionary border are in the remotion of performance of the formation of the fully from the report to the remotion of the fully fro

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Email: Info@pleant.co.in , electronant/Domail.com Phone no.: 0653-2290303 Website , www.electric.in

HING SERVICES PVT. LTD.



TEST REPORT

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₆)	pg/m ¹	ELES/GC/SOP/06: 2923	<2.5	05(Annual)
Benzo-(a)-Pytene	nµ/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

1.000 Reviewed by

AKASH KUMAR Quality Managur ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Chirodih (130.01ha) Bauxite Mine-Environmental Monitoring Report

July 2024



CONTENT

	Minerals & Minerals : AmtipaniChirodih (130.01ha)Bauxite MineEnvironmental Monitoring Report July 2024					
	Amtipani Chirodih (130.01ha)Bauxite Mine					
	AMBIENT AIR QUALITY- CORE ZONE					
1	Mine Site (AmtipaniChirodih Bauxite Mine)					
2	Weigh Bridge (AmtipaniChirodih Bauxite Mine)					
3	Mine Office (AmtipaniChirodih Bauxite Mine)					
4	Entrance Gate (AmtipaniChirodih Bauxite Mine)					
	AMBIENT AIR QUALITY- BUFFER ZONE					
1	Near Pakri Gada Village					
2	Near Pol Pol Village					
3	Near Shakhuapani Village					
4	Near Dipa Kujam Village					





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



	TES	T REPORT	
Test Report No.	: ELES/RNC/2024/4208	Report Release Date	: 29.07.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002143F		
CUSTOMER DET	AILS	SAMPLE DETAILS	_
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the second second with a branch of a second s		In the well as a second state of the second st	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4871 : Mine Site; Amtipani Chirodih
Address	: Lohardaga, Jharkhand-835302	Sampling Date	Bauxite Mine (130.01 ha) : 19.07.2024 to 20.07.2024
		Sample Received Date Type of Sample	: 23.07.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 23.07.2024 to 29.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION 1 Average Temperature (°C) : 30 2 Barometric Pressure (mmHg) : 742 3 Relative Humidity (%) : 63 4 Weather Condition : Partly Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1); 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	20.7	80 (24hrs)
Ozone (O ₅)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m'	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8fars)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AJR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO- 20AAECE8713D124 ENGINEERING SERVICES PVT. LTD.

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TEST	DEDODT
11.01	REPORT

Test Report No.	: ELES/RNC/2024/4208	Report Release Date	: 29.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002143F			

Discipline	:: Chemical	Group: Att	nospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASHKUMAR Quality Managor ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4209	Report Release Date	: 29.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002144F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4872 : Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.07.2024 to 20.07.2024 : 23.07.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 23.07.2024 to 29.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline:	Chemical	Group: Atm	ospheric Polla	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	9.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	23.8	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hra)
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): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ⁸	IS 5182 (Part- 22): 2019	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: 2021	<2.0	06 (Annual)

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4209	Report Release Date	: 29.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002144F			

Discipline	e: Chemical	Group: An	nospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _s H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR

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

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

Page 2 of 2

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Address

Mines Status

1

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Period of Analysis

ENVIRONMENTAL LABORATORIES &

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

: Lohardaga, Jharkhand-835302

: 23.07.2024 to 29.07.2024

: 30

:63

Unit

µg/m'

µg/m

ug/m'

µg/m*

ug/m

ug/m*

mg/m'

µg/m

ngm

ng/m³

: Operational

Discipline: Chemical

METEOROLOGICAL INFORMATION

Average Temperature (%C)

Relative Humidity (%)

Parameter

Particulate Matter (PM10)

Particulate Matter (PM2.5)

Sulphur Di-Oxide (SO₃)

Nitrogen Di-Oxide (NO₂)

Carbon Monoxide (CO)

Ozone (O₁)

Lead (Pb)

Nickel (Ni)

Arsenic (As)

Ammonia (NH.)

ENGINEERING SERVICES PVT. LTD.

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

: 19.07.2024 to 20.07.2024

: ELES/DOC/SMPL/02

: Sealed & Preserved

: 742

: Partiv Cloudy

Regulatory Limit

100 (34hrs)

60 (24hrs)

80 (24hrs)

80 (24hrs)

100 (8hrs)

400 (24hrs)

2 (8hrs)

1 (24hrs)

20 (Annual)

06 (Annual)

: 23.07.2024

: Ambient Air

: ELES Pyt Ltd.

Result

54

26

7.4

20.7

<20.0

<10.0

<1.0

0.005

<6.0

<2.0

Group: Atmospheric Pollution



	165	TREFORT	
Test Report No.	: ELES/RNC/2024/4210	Report Release Dat	e : 29.07.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002145F		
CUSTOMER DET	TAILS	SAMPLE DETAIL	8
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4873 : Mine Office; Amtipani Chirodih Bauxite Mine (130.01 ha)

2

4

Test Protocol

IS 5182 (Part- 23): 2022

IS 5182 (Part- 24): 2019

IS 5182 (Part- II/Sec- 1); 2023

IS 5182 (Part- 6): 2022

IS 5182 (Part- 9): 2019

IS 5182 (Part- 25): 2018

IS 5182 (Part- 10): 2019

(NDIR Method)

IS 5182 (Part- 22): 2019

IS 5182 (Part-26): 2020

ELES/AIR/SOP/01: 2021

Sampling Date

Type of Sample

Sample Received Date

Sampling Procedure

Sampling Done By

Sample Condition

Barometric Pressure (mmHg)

Weather Condition

TEST DEDODT

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-	ALC: NOT A	1.5		31.00

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

GINEERING SERVICES PVT. LTD.

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	DEDUNT
10.51	REPORT
	ANAL STREET

Test Report No.	: ELES/RNC/2024/4210	Report Release Date	: 29.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002145F			

Discipline	: Chemical	Group: At	nospheric Polh	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _p H ₆)	μg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Managar ELES PVT. LTD.

****End of Report****

Anthorised 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

NGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/4211	Report Release Date	: 29.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002146F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4874 : Entrance Gate; Amtipani Chirodih Bauxite Mine (130.01 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.07.2024 to 20.07.2024 : 23.07.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 23.07.2024 to 29.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION

la constante de la constante d	Average Temperature (%C) : 30	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 63	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): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-II/Sec- 1): 2023	9.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	22.7	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH2)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	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: 2021	<2.0	06 (Annual)

Page 1 of 2

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Test Report No.	: ELES/RNC/2024/4211	Report Release Date	: 29.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002146F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₈)	µg/m ⁸	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

NoTTO-1

AKASH KUMAR Quality Managor ELES PVT. LTD.

****End of Report****

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

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



TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4692
		Location	: Near Pakri Gada Village
		Sampling Date	: 15.07.2024 to 16.07.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	1 17.07.2024
		Type of Sample	: Amblent Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved

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

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Pmt-23): 2022	55	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part-24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part- II/Sec- 1): 2023	6.7	80 (24hrs)	
Nitrogen Di-Oxide (NO1)	µg/m ⁸	IS 5182 (Part- 6): 2022	22.2	80 (24hrs)	
Ozone (O1)	µg/m ³	15 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH2)	ugan	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Bhrs)	
Lead (Pb)	µg/m?	IS 5182 (Part- 22): 2019	<0.002	i (24hrs)	
Nickel (Ni)	ngim ³	15 5182 (Part- 26): 2020	~6.0	20 (Annual)	
Arsentic (Aa)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page | of 3

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Test Report No.	: ELES/RNC/2024/4097	Report Release Date	: 22,07,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002032F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)	µg/m ²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a) Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

AKASH KUMAR Quality Managur ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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Emult info@elespl.co.in , <u>eles ranchi@gmall.com</u> Phone no.: 0651-2290203 Webute : www.elespl.co.in



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Test Report No.	: ELES/RNC/2024/4098	Report Release Date : 22.0	7.2024
Work Order No.	: 13612312113	Work Order Date : 28.0	3.2024
ULR No.	: TC135872400002033F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4693 : Near Poi Pol Village : 15.07.2024 to 16.07.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 17.07.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Lid.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 741	
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy	

Discipline: (Chemical	Group: Atmospheric Pollation			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM30)	µg/m ⁸	IS 5182 (Part- 23): 2022	52	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m [#]	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part-II/Sec-1): 2023	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	µg/m ³	IS 5182 (Part- 6): 2022	16.1	80 (24hrs)	
Ozone (O ₂)	µg/m ³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	uem	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	(ug/m ³	IS 5182 (Part- 22): 2019	<8.002	1 (24hm)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	(Annual)	

Page 1 of 2

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

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₈ H ₈)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Managor ELES PVT, LTD

****End of Report****

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4099	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002034F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4694 : Near Shukhuapani Village	
		Sampling Date	15.07.2024 to 16.07.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 17.07.2024	
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Type of Sample	: Ambient Air	
		Sampling Procedure	±ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.07,2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

Mi	TEOROLOGICAL INFORMATIO	N
1	Average Temperature (PC) : 28	 Barometric Pressure (mmHg) : 741
3	Relative Humidity (%) : 67	4 Weather Condition : Cloudy

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part- 23): 2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	66 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	6.2	80 (24hts)	
Nhrogen Di-Oxide (NO2)	µg/m ¹	IS 5182 (Part- 6): 2022.	18.5	80 (24brs)	
Ozone (O ₂)	µg/m	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	,ag/m†	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lend (Pb)	ugim	15.5182 (Part-22); 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	15 5182 (Pari- 26): 2020	<6.0	20 (Annual)	
Amania (As)	ng/m [®]	ELES/AIR/SOF/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4099	Report Release Date	; 22.07,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	± TC135872400002034F		

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₈ H ₆)	ug/m ¹	ELES/0C/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ^{il}	ELES/GC/SOP/05: 2023	<0.5	Ot(Annual)

him Reviewed by

AKASH KUMAR Quality Managur ELES PVT. LTD.

**** End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 657 NO:- 2044ECE97130134

NGINEERING SERVICES PVT. LTD.

Email: <u>info@elesal.co.in</u>, <u>eles.ronchi@gmail.com</u> Phane no.: 0651-2290103 Website : www.elespl.co.in



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

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

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	15 5182 (Part- 23): 2022	51	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	28	60 (24lurs)	
Sulphur Di-Oxide (SOg)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	6.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ³	15 5182 (Part- 6): 2022	20.5	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (ährs)	
Ammonia (NH2)	µg/m ⁷	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoside (CO)	mg/m²	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (Shrs)	
Lead (Pb)	p.g/m	IS 5182 (Part- 22): 2019	0.004	1 (24hrs)	
Nickel (Ni)	ng/m³	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Anienic (As)	ng/m ²	ELES/AIR/SOF/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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Test Report No.	: ELES/RNC/2024/4100	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002035F		

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

Reviewed by AKASH KUMAR Quality Manager ELES PVT. LTD.

"""* End of Report

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

Page 2 of 2

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Chirodih (130.01ha) Bauxite Mine-Environmental Monitoring Report

August 2024



CONTENT

-	August 2024
_	Amtipani Chirodih (130.01ha)Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
t	Mine Site (AmtipaniChirodih Bauxite Mine)
2	Weigh Bridge (AmtipaniChirodih Bauxite Mine)
3	Mine Office (AmtipaniChirodih Bauxite Mine)
4	Entrance Gate (AmtipaniChirodih Bauxite Mine)
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near Dipa Kujam Village
	Drinking Water





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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4859	Report Release Date	: 27.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002778F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5579 : Mine Site; Amtipani Chirodil Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.08.2024 to 17.08.2024 : 20.08.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION

 1
 Average Temperature (°C)
 ; 28
 2
 Barometric Pressure (mmHg)
 ; 742

 3
 Relative Humidity (%)
 ; 67
 4
 Weather Condition
 ; Cloudy

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	8,9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part- 6): 2022	22.5	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₅)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Levd (Pb)	µg/m ⁷	IS 5182 (Part- 22): 2019	0.011	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: 2021	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4859	Report Release Date	: 27.08.2024	
Work Order No.	; RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002778F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₅ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

AKASH KUMAR Quality Managor ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4860	Report Release Date	: 27.08.2024	_
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002779F			

CUSTOMER DET	CUSTOMER DETAILS			
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5580 : Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.08.2024 to 17.08.2024 : 20.08.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 28	2	Barometric Pressure (mmH	lg) : 742	
3	Relative Humidity (%) :67	4	Weather Condition	: Cloudy	

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2022	70	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-II/Sec-1): 2023	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	24.1	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	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: 2021	<2.0	06 (Annual)

Page 1 of 2

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Website : www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4860	Report Release Date	: 27.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002779F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₈ H ₆)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT LTD.

****End of Report****

Authorised Signatory Dr. Deependra Kurnar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technicel Mason

Page 2 of 2

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Save Environment, Save Future



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Test Report No.	: ELES/RNC/2024/4861	Report Release Date	: 27.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002780F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5581 : Mine Office: Amtipani Chirodif Bauxite Mine (130.01 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.08.2024 to 17.08.2024 : 20.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION

I Average Temperature (°C) : 28	2 Barometric Pressure (mmHg)	: 742
3 Relative Humidity (%) : 67	4 Weather Condition	: Cloudy

Discipline: Chemical		Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Maner (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	66	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24): 2019	.32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- Il/Sec- 1): 2023	11.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m ³	IS 5182 (Part- 6): 2022	26.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₁)	µg/m ³	18 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µµ/m ³	IS 5182 (Part- 22); 2019	0.014	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: 2021	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4861	Report Release Date	: 27.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002780F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C6H4)	μg/m [#]	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASHKUMAR

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

Dr. Deleglewithd Nermanisinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Mereger

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO-20AAECE97130124 ENGINTERING SERVICES PVT. LTD

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



Participant.	Th T1 Ph / 1 Th / Ph
1LSI	REPORT

Test Report No.	: ELES/RNC/2024/4862	Report Release Date	: 27.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002781F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5582 : Entrance Gate; Amtipani Chirodil Bauxite Mine (130.01 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.08.2024 to 17.08.2024 : 20.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

 1
 Average Temperature (°C)
 : 28
 2
 Barometric Pressure (mmHg)
 : 742

 3
 Relative Humidity (%)
 : 67
 4
 Weather Condition
 : Cloudy

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	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	IS 5182 (Part- II/Sec- 1); 2023	11.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ²	1S 5182 (Part- 6); 2022	23.8	80 (24hrs)
Ozone (O ₁)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH _J)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m*	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m*	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4862	Report Release Date	: 27.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002781F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₅ H ₈)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Managor ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4757	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Data	: 28.03.2024
ULR No.	: TC135872400002676F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELFS/RNC/2024/AA/5440 : Near Pakri Gada Viliage : 12.08.2024 to 13.08.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	5 Operational	Sampling Done By	: ELES Pyl. Ltd.	
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Sealed & Preserved	

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

Discipline: (Ihemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	15 5182 (Part- 23): 2022	43	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	5.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m [‡]	IS 5182 (Part- 6); 2022	18.1	80 (24hrs)	
Oxone (O ₁)	µg/m*	15 5182 (Part- 9): 2019	<20,0	100 (Shrs)	
Ammonia (NiHy)	ug/m³	18 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	rag/m	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hts)	
Lead (Pb)	'mgm	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Amenic (As)	n#/m®	ELES/ATR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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Test Report No.	: ELES/RNC/2024/4757	Report Release Date	: 22,08,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002676F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (CsHi)	µg/m ²	ELES/GC/SOP/06: 2023	<2.5	05(Annul)	
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	Ot(Annual)	

LL PROFE Reviewed by AKASH KUMAR

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

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4758	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002677F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5441 : Near Pol Pol Village : 12.08.2024 to 13.08.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 14,08.2024 to 22,08.2024	Sample Condition	: Sealed & Preserved

M	TEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	1.27	2	Barometric Pressure (mmFg)	: 741	
з.	Relative Humidity (%)	1.68	1	Weather Condition	: Cloudy	

Discipline: (Chemfeal	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	1S 5182 (Pure 23): 2022	43	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	19	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ¹	IS 5182 (Part-II/Sec-1): 2023	5.2	80 (24hrs)	
Nitrogen Di-Oxide (NO3)	µg/m ³	IS 5182 (Part- 6): 2022	14.8	80 (24hrs)	
Ozonie (O ₁)	µg/m ⁱ	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)	
Ammonia (NH2)	µg/m	15 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monotide (CO)	mg/m ²	IS 5182 (Part- 10): 2019 (NDIR, Method)	<1.0	2 (8hrs)	
Lend (Pb)	ug/m ⁸	IS 5182 (Part-22): 2019	<0.862	1 (24brs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part- 26): 2020	<5.0	20 (Annied)	
Aisenie (As)	ngim ¹	ELES/AIR/SOP/01:2021	<2.0	06 (Annual)	

Page 1 of 2

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Test Report No.	: ELES/RNC/2024/4758	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002677F		

Discipline	: Chemical	Group: At	mospheric Poliu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (CdHa)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by AKASH KUMAR

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

Authorised Signatory Dr. Deopendra Kumar Sinho Ph. D Environmental Engo ELES Pvt. Ltd. Technical Managari

Page 1 of 1

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Empli: <u>info@viesel.co.in</u>, <u>eles.rowchi@ompli.com</u> Phone.no.: 6651-2290103 Website : www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4759	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002678E		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5442 : Near Shekhuapanî Village : 12.08.2024 to 13.08.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Statun	: Operational	Sampling Done By	; ELES Pvt. Ltd.
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	; Sealed & Preserved

ţ.	Average Temperature (%C) : 27	2	Barometric Pressure (mmHg)	- 74F
3	Relative Humidity (%) : 68	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μ <u>e</u> /m ¹	IS 5182 (Part-23): 2022	- 44	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Pan-24): 2019	24	60 (24hrs)	
Salphur Di-Oxide (SO ₂)	µg/m ⁴	IS 5182 (Part- II/Sec- 1): 2023	5,3	80 (24hrs)	
Niuogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	15.1	80.(24hrs)	
Ozone (O ₁)	$\mu g/m^3$	ES 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NHs)	µg/m ³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monorilde (CO)	mg/m [‡]	IS 3182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (Shris)	
Lend (Pb)	i i i i i i i i i i i i i i i i i i i	IS 5182 (Part- 22); 2019	<0.002) (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ⁴	ELES/AJR/SOP/01: 2021	<2.0	D6 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4759	Report Release Date	: 22.08.3024	
Work Order No.	1 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002678F			

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

AKASH KUMAR

Quality Managor ELES PVT_LTD.

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D Environmental Errog. ELES Pvt. Ltd. Technical Maragor

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TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5443 : Near Dipa Kujam Village : 12.08.2024 to 13.08.2024	
Address	: Lohardaga, Jharkhand-\$35302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Sealed & Preserved	

1 Average Temperature ("C)	: 27	2	Barometric Pressure (mmHg)	3:741
3 Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atm	ospheric Polly	itian
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ²	TS 5182 (Part- 23): 2022	42	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	5,4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	15 5182 (Part- 6): 2022	17.1	80 (24hrs)
Ozone (O ₃)	uu/m ^b	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	ug/m ³	15 5182 (Part- 25): 2018	<10.0	400 (24hn)
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Leud (Pb)	pg/m ⁹	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ²	15 5182 (Part- 26); 2020	<5.Ü	20 (Annual)
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01: 2021	<7.6	06 (Annual)

Page 1 of 2

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FLOT NO-36, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (HARKHANO) GST NO-28448(577130)34

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TEST REPORT

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₅ H ₆)	µg/m ¹	ELES/GC/SOP/06: 2023	<1.5	(Annual)
Benzo-(a)-Pyrene	ng/m ⁷	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by AKASH KUMAR Quality Managor ELES PVT LTD.

**** End of Report****

Authorised Signatury Dr. Deependra Kumur Sinho Ph. D Environmental Engo ELES Pvi. Ltd. Technical Marcer 17

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4879	Report Release Date	: 29.08.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002796F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/DW/5583 : 17.08.2024 : 20.08.2024 : Drinking Water : R.O Water : Kitchen (Amtipani Chirodih Bauxite Mine)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline : Chemical		Group :	Water	and the second se	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
pH (at 24.7 °C)	۲	APHA 24 th Ed.2023, 4500-H	6.61	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed 2023, 2130 B	0.42	1.0	5.0
Taste	1.5	АРНА 24 th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	÷	15 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	62	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CI B	8.61	250	1000
Fluoride (as F)	mg/L	APHA 24 th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₂)	mg/L	APHA 24th Ed.2023, 2320 B	15,5	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2340 C	21.6	200	600
Sulphate (as SO4)	mg/L	APHA 24 th Ed.2023, 4500 SO ₄ ⁻² -E	BDL (DL: 1.0)	200	400
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₃ -B	BDL (DL: 0.5)	45	No Relaxation

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4879	Report Release Date	: 29.08.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002796F		

Discipline : Chemic	Discipline : Chemical Group : Water					
Parameter	Unit	Test Protocol	Result	Acceptable	0500:2012 Permissible Limit	
Phenolic Compound (as C ₆ H ₂ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002	
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	0.27	0.2(Min)	1.0(Min)	
Calcium (as Ca)	mg/L	APHA 24th Ed,2023, 3500 Ca B	5.5	75	200	
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0	
Discipline : Chemic	al	Gre	oup : Residues i	n Water		
Aluminum (as Al)	mg/L	18 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2	
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation	
Boron (as B)	mg/L	IS 3025 (Part-57) : 2021	BDL. (DL: 0.2)	0,5	1.0	
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxatio	
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxatio	
Copper (as Cu)	mg/L	APHA 24 ⁿ Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5	
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxatio	
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.068	1.0	No Relaxatio	
Lead (as Pb)	mg/l.	APHA 24th Ed.2023; 3111B	BDL. (DL: 0.01)	0.01	No Relaxatio	
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3	
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxatio	
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL. (DL: 0.01)	0.01	No Relaxatio	

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:- 2044ECE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4879	Report Release Date	: 29.08.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002796F		

Discipline : Chemical		Group : Resid	ues in Water		ory Limit 0500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated biphenyls (PCB)	µg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation
Pesticides				Li	mit
Alachlor	μg/1.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	20
Atrazîne	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	.0
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		50
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	.0
Malathion	μg/L.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	90
Methyl parathion	μg/ĩ.	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0	.30
Moaocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	.0
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	0.1
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	*
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0	.03
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0	.01
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0	.04

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9723D124 ENGINEERING SERVICES PVT. LTD.

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TEST	REPORT
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Test Report No.	: ELES/RNC/2024/4879	Report Release Date	: 29.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002796F	1.5		

Pesticides				
Parameter	Unit	Test Protocol	Result	Limit
Delta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(o,p and p,p-isomers of DDT) (o,p DDE and p,p DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Group	: Water	
Total Coliform (Qualitative)	Per 100 mL	15 15185: 2021	Not Detected	et 11 - 12 - 14 - 1
Escherichia coli (Qualitative)	Per 100 mL	1S 15185: 2021	Not Detected	Shall not be detected

Remarks: 1. pH and RFC done at Lab.

Reviewed by AKASH KUMAR Quality Managtr ELES PVT, LTD,

End of Report*

Dr. Deependra Kinnar Shhu Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 4 of 4

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4879	Report Release Date	: 29.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/DW/5583 : 17.08.2024 : 20.08.2024 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample Location of Sample	: R.O Water : Kitchen (Amtipani Chirodih Bauxite Mine)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 20.08.2024 to 29.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

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

Reviewed by AKASH KUMAR Quality Managar ELES PVT. LTD.

****End of Report****

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

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Chirodih (130.01ha) Bauxite Mine-Environmental Monitoring Report

September 2024



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1217	September 2024
_	Amtipani Chirodih (130.01ha)Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Site (AmtipaniChirodih Bauxite Mine)
2	Weigh Bridge (AmtipaniChirodin Bauxite Mine)
3	Mine Office (AntipaniChirodih Bauxite Mine)
4	Entrance Gate (AmtipaniChirodih Bauxite Mine)
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near Dipa Kujam Village
	AMBIENT NOISE
	WORKZONE NOISE
	Spring Water
1	Sama Dari
	Stream Water
1	Up Stream (Dhardhari Nadi)
2	Down Stream (Dhardhari Nadi)





TEST REPORT

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

ENGINEERING SERVICES PVT. LTD.

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Test Report No.	: ELES/RNC/2024/5610	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003508F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/6506 : Mine Site; Amtipani Chirodil Bauxite Mine (130.01 ba) : 20.09.2024 to 21.09.2024 : 23.09.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 23.09.2024 to 30.09.2024	 Sampling Done By Sample Condition 	: Sealed & Preserved

1	Average Temperature (°C)	: 29	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%)	: 63	4	Weather Condition	; Clear	_

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2/Sec1): 2023	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	18.3	80 (24hrs)	
Ozone (O ₃)	µg/m ²	1S 5182 (Part- 9): 2019	<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): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg'm ¹	IS 5182 (Part- 22): 2019	0.01	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: 2021	<2.0	06 (Annual)	
Benzene (C6H6)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar Quality Manager

D1. Weependersweimer Sinha

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Ph. D. Environmental Engg. Technical Manage

Page 1 of 1

The Oxyonest stand as Test Report, is issued by the Laboratory under General Tenns and Conditions, only on Company letter head in pre-approved former. The results shown in the Test Report refire or relates only to the join radiosition by the Laboratory only. The information stand on the Test Barrow reflaces the findings data by the Laboratory at the time of incoherence only and within the limits of cheer's marrations. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the disco. The Report cannot us reproduced everyt at full and are part of the report is not internet, without provides at the report, steeps we internation within a provide by the full and are part of the report is not internet, without provides at the report, steeps we internation within a provide by the full and are part of the report is not internet, without provides at the report, steeps we internation within an internation of the full and are part of the report is not internet, without provides at the report, steeps we internation within an internation of the full and are part of t rational for Woleys from the Date of release issue of the Test Report. The samples from Regulatory bodies are to be meaned as specified. Any type of Observations or Completing the Report shall be dise when ISdate from the Date of Test Report released/sweet. After the time period stated before, no completion will be accepted. The enter True schedule mentioded in Test Report is or 246ours former. Abbreviation used, NPA (Nor Applicabley, BDI, Oleinov Detection Larit), LDI, (Lenor Detection Lond)



TECT DEDODT

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

ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/5611	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003509F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/AA/6507 : Weigh Bridge; Amtipani Chirodil Bauxite Mine (130.01 ha) : 20.09.2024 to 21.09.2024 : 23.09.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES Pvt Ltd.
Period of Analysis	: 23.09.2024 to 30.09.2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION		1111		
1	Average Temperature (°C)	: 29	2	Barometric Pressure (mmHg)	: 742	
	Relative Humidity (%)	: 63	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	51	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	20	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part- 2/Sec1): 2023	5.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part- 6): 2022	17.3	80 (24hrs)	
Ozone (O1)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m'	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ²	15 5182 (Part- 22): 2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenie (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
1114 126 120 120 120 100 1				1. C	

- 11-Reviewed by Akash Kumlar Quality Manager

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

Page 1 of 1

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Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/5612	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003510F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2024/AA/6508 : Mine Office; Amtipani Chirodil Bauxite Mine (130.01 ha) : 20.09.2024 to 21.09.2024 : 23.09.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 23.09.2024 to 30.09.2024	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 29	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Clear

Discipline : Chemic	al	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	1S 5182 (Part-23): 2022	48	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part- 2/Sec1): 2023	7.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	24.5	80 (24hrs)	
Ozone (O ₃)	µg/m ¹	IS 5182 (Part- 9); 2019	<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): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	1S 5182 (Part- 22); 2019	0.010	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m [*]	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁷	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar

Quality Manager

Dr. Weyend Sixuna Sinha Ph. D. Environmental Engg.

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



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TRAC	REPORT

: ELES/RNC/2024/5613	Report Release Date	: 30.09.2024	
: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
: TC135872400003511F			
AILS	SAMPLE DETAILS		
: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	i ELES/RNC/2024/AA/6509 i Entrance Gate; Amtipani Chirodih Bauxite Mine (130.01 ha) : 20.09.2024 to 21.09.2024 : 23.09.2024 : Ambient Air	
: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	
	: RP/MJB/MM/24/0088/01 : TC135872400003511F AILS : Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	: RP/MJB/MM/24/0088/01 Work Order Date : TC135872400003511F SAMPLE DETAILS AILS SAMPLE DETAILS : Minerals & Minerals Limited Sample Ref. No. Location : Lohardaga, Jharkhand-835302 Sampling Date Sample Received Date Type of Sample : Operational Sampling Procedure Sampling Done By	

 1
 Average Temperature (°C)
 : 29
 2
 Barometric Pressure (mmHg)
 : 742

 3
 Relative Humidity (%)
 : 63
 4
 Weather Condition
 : Clear

Discipline : Chemic	ul lu	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23); 2022	53	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part- 2/Sec1): 2023	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	18.3	80 (24hrs)	
Ozone (O ₂)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ¹	1S 5182 (Part-25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	1S 5182 (Part- 22): 2019	0.01	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: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Akason Kunned by Quality Manager

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

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Technical Manager

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Email: <u>Info@elical.co.in</u>: <u>electronch</u>:/Romail.com Phone inc.: 0652-2000.08 Michelle : winn alweel co.in



Test Report No.	: ELES/RNC/2024/5350	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Bate	1 39.63.2024
ULR No.	: TC135872400003263F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalço Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2024/AA/6154 : Nenr Pakri Gada Village : 14.09.2024 to 15.09.2024 : 16.09.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 16:09.2024 to 23:09.2024	Sample Condition	: Sealed & Preserved

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1	Average Temperature (*C)	:26	2	Barametric Pressure (mmHg)	- 742
F	Relative Humidity (%)	: 72	4	Weather Condition	Raisy

Discipline : Chemic	nî	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m²	IS 51/12 (Part- 23): 2022	38	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	17	60 (2-thrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	<5.0	80 (24hrs)
Nitrogen Di-Cxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	13,8	80 (24lus)
Ozone (O1)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₁)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carton Monoxide (CO)	m <u>ø</u> /m™	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ⁵	IS 5182 (Part-26): 2020	<6.0	20 (Annual)
Arsenic (As)	ngim	ELES/AIR/SOP/01: 2021	<2.0	(16 (Annual)
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Fyrma	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed hy Akesh Kumar Quality Maintenar

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

Page I of 1

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			TEST	REP	ORT		
Test Report No.	: ELES/BJ	VC/1024/5351		Re	port Reiense Date	: 23.09.2024	
Work Order No.	: 13612312	113		W)	orh Order Date	: 28,03.2024	
ULR NA	: TC13587	2400003264F					
CUSTOMER DET	AILS			SA	MPLE DETAILS		
Custoroer Name Address Mines Status	: Hindalco Industries Limited : Enhardaga, Jharkhand-835302 : Operational		Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By		: ELES/RNC/2024/AA/6185 : Near Pol Pol Village : 14.09/2024 to 15.09/2024 : 16.09/2024 : Ambient Air : ELES/DOC/SMCPL/02 ELES Pvt. Ltd		
Period of Analysis	: 16.09.202	4 to 23,69,202	4		nple Condition	Sealed & Preserved	
METEOROLOGI	CAL INFOR	MATION					
1 Average Temp	ersture (PC)	:26		2	Barametric Pressure	(mmHg)	742
3 Relative Humis	ity (%)	:71		4	Weather Condition		Rainy
Disciplin	: Chemical	6			Group :	Atmospheric	Pollution
Paramet	er.	Unit		Test	Protocol.	Result	Regulatory Limit
Particulate Matter ()	PM10)	µg/m ³	15.5	182 (Part- 23) 2022	31	100 (24hrs)
Particulate Matter (1	EM(2.5)	µ@m ³	1S 5	182 (Pan-24): 2019	15	60 (24hrs)

Particulate Matter (PM10)	μg/m ²	IS 5182 (Part- 23) 2022	31	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Pan-24): 2019	15	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m)	IS 5182 (Part- 2/Sec1): 2023	<5.0	50 (24hrs)
Nitrogen Di-Oxide (NO ₃)	µg/m ³	IS-5182 (Part- 6): 2022	15.5	80 (24hrs)
Ozone (O ₃)	µg/m ²	15 5182 (Part- 9): 2019	<20.8	100 (Shrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁸	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m¹	IS 5182 (Part- 22): 2019	<0.062	1 (24hrs)
Nickel (Ni)	ogim	18 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	rig/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzano (C ₆ H ₆)	ug/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m*	ELES/GC/SOP/05: 2023	<0.5	01(Annual)
			1000	

Reviewed by ANNUAR RESIDER Quality Manager

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Technical Manager

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Page 1 of 1 The Document second or Tail Bayers of second by the Laboratory and Company and Company and had to pre-opposed format. The result shows in the Laboratory and the test topost rate or relates to be the information to be the Company and Company only of Company and had to pre-opposed format. The result shows in the Laboratory and the test topost rate or relates to be the information to be the Company and Company and the Test Report refines the formation by the Laboratory action to be formation or the test topost soften in the test of the information. The Company of the Company and the Department of the Company and the Department of the company and the Department of the Company ment to result and the test of the oppost of the oppost of the Company of the Company of the Company. The Report of the test of the test of the part data and the test of the opposite test of the opposite of the information of the Company of the Company. The Report of the test of the test of the test of the test of the Department of the opposite of the information of the Company of the Company of the Company of the Department of the test of the test of the Department of the test of test of the test of the test of tes

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GINEERING SERVICES PHT. 3

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	TES	TREPORT		
Test Report No.	: ELES/RNC/2024/5552	Report Release Date	: 23.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003265F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mious Status	: Hindalco industries Linited : Lohardage, Ruckhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2024/AA/6186 : Near Shakhuapani Village : 14.09.2034 to 15.09.2024 : 16.09.2024 : Amblent Air ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
Period of Analysis	: 16.09.2024 to 13.09.2024	Sample Condition	Sealed & Preserved	

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

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	51	100 (24his)
Particulate Matter (PM2.5)	µg/m ³	18 5182 (Part- 24): 2019	26	60 (2-thrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO1)	ug/m ³	IS 5182 (Pan- 6): 2022	16,3	80 (24hrs)
Ozone (O ₂)	pg/m ²	IS 5182 (Part- 9): 2019	<20,0	100 (Shrs)
Ammonia (NH ₃)	ug/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24ftrs)
Carbon Monoxide (CO)	mg/m [#]	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ^v	1S 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	15 5182 (Part- 26): 2020	<6,8	20 (Annual)
Atsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2,0	06 (Annual)
Benzene (Calla)	pag/m ^a	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyvene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by A NUMBER OF STREET Clubbly Manager

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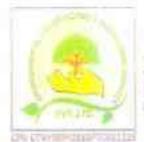
Dr. Deependra Komar Sinha Ph. D. Environmental Engg. Technical Manaper

Page 1 of Y

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TEST REPORT

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			1ES1	KEL	ORI			
Tust Report No.	: ELES/R	NC/2824/\$353		Re	port Reiense Date	: 23,09,1024		
Wark Order No.	r (3612312113)			W	irle Order Date	: 28.03.2624		
ULR No.	: TC1358	724000032668						
CUSTOMER DET	AILS			SA	MPLE DETAILS			
Customer Name Address Miner Statos		industries Lim a. Jhickhanië-8 mi	nd-835302		uple Ref. No. auton npling Date nple Received Date pe of Sample npling Procedure npling Done By	D/2024/AA/6187 Kujum Villagu to 15.09/2024 Li Li C/SMPL/02		
Period of Analysis	Period of Analysis : 16.09.2024 to 23.09.2024		4	Sample Condition		: ELES Pvr. Ltd. : Senied & Preserved		
METEOROLOGI	CAL INFOR	RMATION						
1 Average Temp	erature (%)	1.25		2	Barometric Pressure	(mmHg) :	142	
3 Relative itumi	iity (36)	: 72		+	Weather Condition	ndition : Rainy		
Disciplin	e : Chemica	1			Group :	Atmospheric	Pollution	
Paramet	es:	Usir		Test	Protocol	Result	Regulatory Limi	
Particulate Matter ()	PM 10).	µg/m ³	15.5	5182 (Part-23): 2022		48	100 (24ius)	
Particulate Matter (PM2.5)	µg/m ³	15.5	S 5182 (Part- 24): 2019		24	60 (24hrs)	
Sulphur Di-Öxide (SO ₂)	µg/m ³	IS 518	S 5182 (Part- 2/Sec1); 2023		6.2	80 (24hrs)	
Nitragen Di-Oxide	(NO_2)	μ <u>ε</u> /m ³	TS 5	182 (Part- 6): 2072	19.4	80 (24hrs)	
Ozone (O ₃)		µµ/m³	IS 5	182 (Part- 9): 2019	<20.0	100 (8hrs)	
		2.4	1057-52	10.211	and a second second	Contraction of the second s	aller / 4 at	

Particulate Matter (PM2.5)	µg/m"	15 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1); 2023	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μ <u>ε</u> /m ³	IS 5182 (Part- 6): 2022	19.4	80 (24hrs)
Ozone (O ₃)	μų/m ³	IS-5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH1)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	(S 5182 (Part- 10); 2019 (NDIR Mediod)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	1S 5182 (Part-22): 2019	0.007	1 (24lus)
Nickel (Ni)	ngini	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (Ax)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (CeHa)	µg/m ²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

and the Reviewed by Axeeh Hitting Chaptery Municipar

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

Page 1 of 1

****End of Report****

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5622	Report Release Date	: 30.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003520F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 20,09.2024 to 21,09.2024 : 23,09.2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 23.09.2024 to 30.09.2024	

M	ETEOROLOGICAL INFO	RMATION				_
1	Average Temperature (°C)	: 29	2	Barometric Pressure (mm	Hg) : 742	
3	Relative Humidity (%)	: 63	4	Weather Condition	: Clear	

Discipline : Chemical		Group : Atmospheric Pollution			
Location	Unit	Test Protocol	Resu	ıit	Regulatory Limit (Industrial Zone)
Near office Shelter			Time	Log	
Amtipani Chirodih (130.01ha) Bauxite Mine	dB(A)	IS 9989: 2020	Day Time	60	75 dB(A) Day Time &
Sample ID: ELES/RNC/2024/AN/6518			Night Time	44	70 dB(A) Night Time



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	TES	ST REPORT		_
Test Report No.	: ELES/RNC/2024/5624	Report Release Date	: 30.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03,2024	
ULR No.	: TC135872400003522F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 21.09.2024 : 23.09.2024 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 23.09.2024 to 30.09.2024	

M	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%)	: 61	4	Weather Condition	; Clear	

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
Near Mines Pit -			Time	L_{eq}	
Amtipani Chirodih Bauxite Mine (130.01 ha)	dB(A)	1S 4758: 2017	Day Time	73	90 dB (A)
Sample ID: ELES/RNC/2024/WN/6520	unitati		Day Thie		



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Website : www.elespl.co.in

TC-1110

TEST REPORT

Test Report No.	: ELES/RNC/2024/5608	Report Release Date	: 30.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003506F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/6504 : 20.09.2024 : 23.09.2024 : Surface Water : Spring Water : Sama Dari, Amtipani Chirodih Bauxite Mine (130.01 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline : Chemical		G	roup : Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
pH (at 24.8 °C)	- 52	IS 3025 (Part-11): 2022	6,58	6.5-8.5
Colour	Hazen	IS 3025 (Part -4) : 2021	4.0	300
Odour	34	IS 3025 (Part-5) : 2018	Unobjectionable	1
Turbidity	NTU	IS 3025 (Part-10): 2023	2.18	
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	136	1500
Total Alkalinity (as CaCO1)	mg/L	IS 3025 (Part-23) : 2023	49.0	1944 1947
Total Hardness (as CaCO ₃)	mg/L	IS 3025 (Part-21): 2019	64.1	14 C
Sulphate (as SO ₄)	mg/L	IS 3025 (Part-24/Sec1): 2022	5.20	400
Chloride (as Cl)	mg/L	IS 3025 (Part-32): 2019	13.5	600
Fluoride (as F)	mg/I_	IS 3025 (Part-60): 2019	0.116	1.5
Nitrate (as NO ₁)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	1.56	50

Page 1 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5608	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003506F		

Discipline : Chemical		Group : Wa	ter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) : 2021	BDL (DL: 0.1)	3 43
Phenols Compounds (as C ₆ H ₇ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	17.1	19 8
Discipline : Cher	nical	Gro	up : Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	5 <u>12</u>
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)	-
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	APHA 24 th Ed 2023; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.144	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL. (DL: 0.01)	0,1
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	-
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)	#
Selenium (as Sc)	mg/L_	1S 3025(Part-56): 2019	BDL (DL: 0.01)	0,05
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	0.111	15

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5608	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003506F		

Discipline : Cher	mical	Group : Res	Group : Residues in Water		
Parameter Unit		Test Protocol	Result	as per IS 2296-1992 Class C (Iniand Surface Water)	
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)		
Pesticides					
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	×#1	
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	122	
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	0.75	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.44	
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	13 7	
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)		
Monocrotophos	µg∕L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- H	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1 HE	
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)		

Page 3 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5608	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003506F		

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/ 1 .	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	170
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	-
Delta HCH	µg/l.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	
DDT(o.p and p.p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	- 2
Discipline: Biol	ogical	Gr	oup : Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	8.40×10 ²	-
Escherichia coli	CFU/100 mL	15 15185: 2021	BDL (DL: 1.0)	:27:

Remarks: pH & RFC done at Lab.



****End of Report****

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

Page 4 of 4

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Save Environment, Save Future



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO-204AECE8713D124

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/RNC/2024/5608	Report Release Date	: 30.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/6504 : 20.09.2024 : 23.09.2024 : Surface Water : Spring Water : Sama Dari, Amtipani Chirodil Bauxite Mine (130.01 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical Group : Water			Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Taste		APHA 24 ^e Ed.2023, 2160C	N/A	-
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Classe 6 Infrared Spectroscopic Method)	BDL (DL: 0.01)	(#)

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



****End of Report****

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

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5606	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003504F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/6502 : 20.09.2024 : 23.09.2024 : Surface Water : Up Stream : Dhardhari Nadi, Amtipani Chirodih Bauxite Mine (130.01 ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

Discipline : Chemical		0	roup : Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
pH (at 24.8 °C)		IS 3025 (Part-11) : 2022	6.73	6.5-8.5
Colour	Hazen	IS 3025 (Part -4) : 2021	12.0	300
Odour	3	IS 3025 (Part-5) : 2018	Unobjectionable	(144)
Turbidity	NTU	IS 3025 (Part-10): 2023	6.4	(mm.)
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	151	1500
Total Alkalinity (as CaCO1)	mg/L	IS 3025 (Part-23) : 2023	47.7	
Total Hardness (as CaCO ₂)	mg/L	IS 3025 (Part-21): 2019	70.0	
Sulphate (as SO2)	mg/L	IS 3025 (Part-24/Sec1): 2022	4.96	400
Chloride (as Cl)	mg/L	IS 3025 (Part-32): 2019	26.2	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	0.108	1.5
Nitrate (as NO ₁)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	1.97	50

Page 1 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5606	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003504F	M.	

Discipline : Chemical	l,	Group : Wa	iter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) : 2021	BDL (DL: 0.1)	100
Phenols Compounds (as C _n H ₅ OH)	mg/L	15 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L,	IS 3025 (Part-40): 2019	18.7	-
Discipline : Cher	nical	Gro	oup : Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	(**)
Arsenic (as As)	mg/L	1S 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	3443
Cadmium (as Cd)	mg/L	APHA 24 th Ed 2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24® Ed.2023; 3111B	0.144	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	**
Mercury (as Hg)	mg/I.	IS 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)	
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15

Page 2 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5606	Report Release Date	: 30.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003504F		Porty (0.6) (11) (0.0)	

Discipline : Che	Group : Res	idues in Water	Tolerance Limits	
Parameter Unit		Unit Test Protocol		as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BD1. (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	::**::
Pesticides				
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3441
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	275
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(a.)
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	395
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	122
Monocrotophos	µg/l_	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	÷
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	57-
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	***
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	1972

Page 3 of 4

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Email: <u>info@elespl.ca.in</u>, <u>eles.ranchi@gmail.cam</u> Phone na.: 0651-2290103 Website : www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/5606	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003504F		

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	144
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	
Deita HCH	μg/l.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	÷#1
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	100
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	-
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	200
Discipline: Biolo	gical	Gre	oup: Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	1.04×10 ³	(++);
Escherichia colt	CFU/100 mL	IS 15185: 2021	94.0	-

Remarks: pH & RFC done at Lab.



****End of Report****

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5606	Report Release Date	: 30.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/6502 : 20.09.2024 : 23.09.2024 : Surface Water : Up Stream : Dhardhari Nadi, Amtipani Chirodih Bauxite Mine (130.01 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical			up: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Infand Surface Water)
Taste		APHA 24 th Ed.2023, 2160C	N/A	
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	1S 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.01)	-

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



****End of Report****

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

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5607	Report Release Date	: 30.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003505F			_

CUSTOMER DETAILS		SAMPLE DETAILS	DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample	: ELES/RNC/2024/SW/6503 : 20.09.2024 : 23.09.2024 : Surface Water : Down Stream		
Mines Status Period of Analysis	: Operational : 23.09.2024 to 30.09.2024	Location of Sample Sampling Procedure Sampling Done By Sample Condition	 Dhardhari Nadi, Amtipani Chirodih Bauxite Mine (130.01 ha) ELES/DOC/SMPL/01 ELES Pvt. Ltd. Sealed & Preserved 		

Discipline : Chemical			Group : Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
pH (at 24.8 "C)	-+	IS 3025 (Part-11): 2022	6.66	6.5-8.5
Colour	Hazen	IS 3025 (Part -4) : 2021	8.0	300
Odour	4	1S 3025 (Part-5) : 2018	Unobjectionable	-
Turbidity	NTU	IS 3025 (Part-10): 2023	4.8	4
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	118	1500
Total Alkalinity (as CaCO ₁)	mg/L	IS 3025 (Part-23) : 2023	41.2	
Total Hardness (as CaCO ₃)	mg/L	IS 3025 (Part-21): 2019	58.3	
Sulphate (as SO ₂)	mg/L	IS 3025 (Part-24/Sec1); 2022	3.42	400
Chloride (as Cl)	mg/L	18 3025 (Part-32); 2019	9.71	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	0.114	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO3-B	1.02	50

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Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003505F		

Discipline : Chemical	-	Group : Wa	ter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) : 2021	BDL (DL: 0.1)	222
Phenols Compounds (as C ₆ H ₂ OH)	mg/L	1S 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Caleium (as Ca)	mg/L	IS 3025 (Part-40): 2019	15.5	9449
Discipline : Cher	nical	Gro	oup : Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	(ee)
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0,2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	546
Cadmium (as Cd)	mg/L	APHA 24 ⁿ Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 [®] Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.159	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)	412
Selenium (as Se)	mg/1.	IS 3025(Part-56); 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/l.	APHA 24 ^m Ed.2023; 3111B	BDL, (DL: 0.1)	15

Page 2 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 204AECE9713D124 ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/5607	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003505F		

Discipline : Chemical		Group : Res	idues in Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	1.000
Pesticides				
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-
Atrazine	µg/1.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	8774
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3995
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	int ince Feet
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	380
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	**
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	346
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL; 0.5)	17 53
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	348S
Dieldrin	μg/L	ELES/GC/SOP/02; 2023	BDL (DL: 0.01)	:**C

Page 3 of 4

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ENVIRONMENTAL LABORATORIES &

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/2024/5607	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003505F		

Pesticides				Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)	
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)		
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)		
Delta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	(++)	
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	-	
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)		
DDT(o.p and p.p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	-	
Discipline: Biological		Group : Water			
Tetal Coliform	CFU/100 mL	IS 15185: 2021	8.68×10 ²		
Escherichia coli	CFU/100 mL	IS 15185: 2021	77.0	20	

Remarks: pH & RFC done at Lab.



****End of Report****

Authorised Signatory

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

Page 4 of 4

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D174

NGINEERING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/5607	Report Release Date	: 30.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample	: ELES/RNC/2024/SW/6503 : 20.09.2024 : 23.09.2024 : Surface Water : Down Stream
Mines Status Period of Analysis	: Operational : 23.09.2024 to 30.09.2024	Location of Sample Sampling Procedure Sampling Done By Sample Condition	: Dhardhari Nadi, Amtipani Chirodih Bauxite Mine (130.01 ha) : ELES/DOC/SMPL/01 : ELES Pvt. Ltd. : Scaled & Preserved

Discipline : Chemic	al	Gro	up: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Taste	- H	APHA 24th Ed.2023, 2160C	N/A	22 22
Anionic Surfactants (as MBAS)	mg/L	APHA 24 [#] Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.01)	

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



****End of Report****

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

Page 1 of 1

The Decoment stated as Test Report, is issued by the Laboratory under General Tarms and Conditions, only on Company lettar head in pre-approved format. The results shown in the Test Report refer or relates only to the jubications 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 & fabrilization of the content or appearance of the Test Report to unlawful and offenders may be prosecuted in the fullest extent of the law. All the samples are related for 30days from the Date of release/issue of the Tex Report. The samples from Regulatory hodies are to be retained as specified. Any type of Observations or Compliants regarding the Reports shall be done within Usdays from the Dore of Teni Report released/smood. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours Sonnat, Abbreviation used, N/A (Not Applicable), BDL (Below Detection Linut), LDL (Lower Detection Limit).

MINERALS & MINERALS LIMITED

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Jharkhand-835302 Tel.-06526-223163 CIN NO. U26990JH1970PLC000875

Date

Annexure 3

Date - 06.11.2024

Office Order

Environmental Cell has been re-constituted at Amtipani Chirodih Bauxite Mine (Area 130.01 ha) comprising below mentioned team members. The team will ensure compliance with the Environment Act, Regulation & Rule in respect of the said mines of Minerals & Minerals Limited.

- 1. Mr. Sanjay Kumar (Coordinator)
- 2. Mr. Amit Kumar Pradhan (Geologist)
- 3. Mr. Ankit Das (Environment Engineer)
- 4. Mr. Anand Prakash Tiwari (Environment Engineer)

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

Basudev Gangopadhyay AVP (Planning, Environment& Compliance)

Ref. :

Annexure 4

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

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

*Static information about the mines included in the above table

Basudev Cangopadhyay AVP (Planning, Environment and Compliance)

Annexure-5

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

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

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

**Part of OB removed cost.

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)

Certificate No: <u>AMT chirodih 13348</u> Certificate No: <u>Mahendra Munda</u> employed as <u>Miner</u> <u>In</u> Asas been examined for a <u>medical examination</u> . <u>In</u> <u>Mahendra Munda</u> The findings of the examining authority are given in the attached sheet. It is considered that <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of the examining authority are given in the attached sheet. It is considered that <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of the examining authority are given in the attached sheet. It is considered that <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of the examining authority are given in the attached sheet. It is considered that <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of the examining authority are given in the attached sheet. It is considered that <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of <u>Manage examined withing of the any employment in mines</u> , or <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of <u>Manage examployment or work</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of <u>Manage examployment or work</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> <u>Mahendra Munda</u> Image: State of <u>Manage examployment or work</u> <u>Ma</u>	REPORT O	FORM "O" [See Rule 29 #(2] and 291.] OF MEDICAL EXAMINATION UNDER RULE 29 B [TO BE ISSUED IN TRIPLICATE]**
has been examined for a <u>INITIAL</u> <u>I</u>	Certificate No. AMT chirodih 13348	
 (i) Any employment in mines, or (ii) Any employment below ground, or (iii) Any employment or work * Is suffering from and should get this disability *cured/controlled and should be again of test of months. He appear for re-examination with the resolution of test of 	has been examined for a INITIAL The findings of the examining authority are given in the attached sheet. It is o	medical examination. He appears to be ohirodin mine considered that Mahendra Munda 35 Form a No.
examined within a period of and should get this disability *cured/controlled and should be again of test of months. He appear for re-examination with the result.	 (i) Any employment in mines, o (ii) Any employment below eros 	and is medically unfit for or und, or
his duties during this period. He may be permitted/not permitted to carry on	examined within a period of of test of	and the opinion c

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

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

Place Rajendra Hospital , Lohardaga 7/19/2024 *Delete whatever not applicable.

Mah

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

pg. 1 of 5

	of Employee	_	Mahendra Mu		Age	35	÷		
Designa	rtion		Miner	_	Working 5	lince 12/5/12/;	2009	Sex	Male
Name o	f Employer/Ind	lustry Hin	dalco Industries	Ltd. (Mines Div.)	, Lohardaga				
Form-8 1	No.		N/A					_	
Visual Act									
Colour Visi	lan		NORMAL						
nterior Set	ement	-	NORMAL						
Inv	CLER PLAT								
RIC	GHT EYE H CYL	AXIS	VISION		SPH	CYL	LEFT EYE	Iuma	1
		AXIS	VISION	Distance	SPH	CYL	LEFT EYE AXIS	VISION]
		AXIS	VISION	Distance Reading	SPH	CYL	and the second designed in the second designe	VISION	
SPI		AXIS	VISION		SPH	CYL	and the second designed in the second designe	VISION	
RIGH SPH	H Cri	AXIS			LEFT EYE	CYL	and the second designed in the second designe	VISION	
SP) RIGH	H CYL		VISION			CYL	and the second designed in the second designe	VISION	
RIGH SPH	H CYL			Reading	LEFT EYE		Axis		
RIGH SPH	H CYL			Reading	LEFT EYE		Axis		

LLL

Signature

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

National	mination as per the recommendations of Safety Conferences in Mines used in continuation with Form "0")
Certificate No.	AMT Chirodih 13348
vame	Mahendra Munda
ientification Marks	A mole mark on left leg

1. Cardiological Assessment

Auscultation	S1	heard	
	S2	heard	
	Additional Sound	no any	
Electrocardiograph (12 Leads) Findings	Sinus arrthymia with	
Clinically Normal		right axis deviation	

Enclosed ECG

-

2.Neurological Assessment

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

3.ILO Classification of Chest Radiograph

des	Types
1	0/0
The last	1

Enclosed Chest Radiograph

Centre for Environment & Occupational Health A Unit of Rajendra Hospital Lohrdaga		
	AMT Chirodih 13348 Date	7/19/2024
Certificate No.	Mahendra Munda Age:	Sex:Male
CHEST X-RAY PA V	NEW REPORT	
Trachea:		CENTRAL
Cardiac Shadow:		NORMAL
Both Costophrenic &	& Cardiophrenic angles:	NORMAL
Both side Bronchiov	ascular markings are:	PROMINENT
L.O. Classification o	f Opacities:	0/0
mpression:		Normal Chest X-Ray
		ahr
		Dr. OM PRAKASH DUBEY Sr. Consultant
		Dr. Omprakash Duboy Sr. Consultant Hindalco Mines Divi., Lohardaga Reg. No -33297, BR-2002
		Keg. NoSS207, Diversion

Right Ear
RACKER.
WNI.
WNI.

Enclosed Audiometry Report

5 Pathological/Microbiological Investigations

S.No.	Tests	Findings
1	Blood-TC, DC, Hb%, ESR, Platelets Count	WNL
2	Blood Sugar- Random	140
3	Lipid Profile	WNL
4	Blood Urea and Serum Creatinine	WNL
5	Routine Examination of Urine	WNL
6	Stool Routine	WNL

Enclosed Investigation Reports

6. Special Test for Mn exposure (NOT APPLICABLE)

Behavioral Disturbances		Present/Not Present
	Speech Defect	Present/Not Present
Neurological Disturbances	Tremor	Present/Not Present
	Adiadochokinesia	Present/Not Present
	Emotional Changes	Present/Not Present

Any other special Test Required

Signature of the Examination Authority

Dr. Omprakash Duboy

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

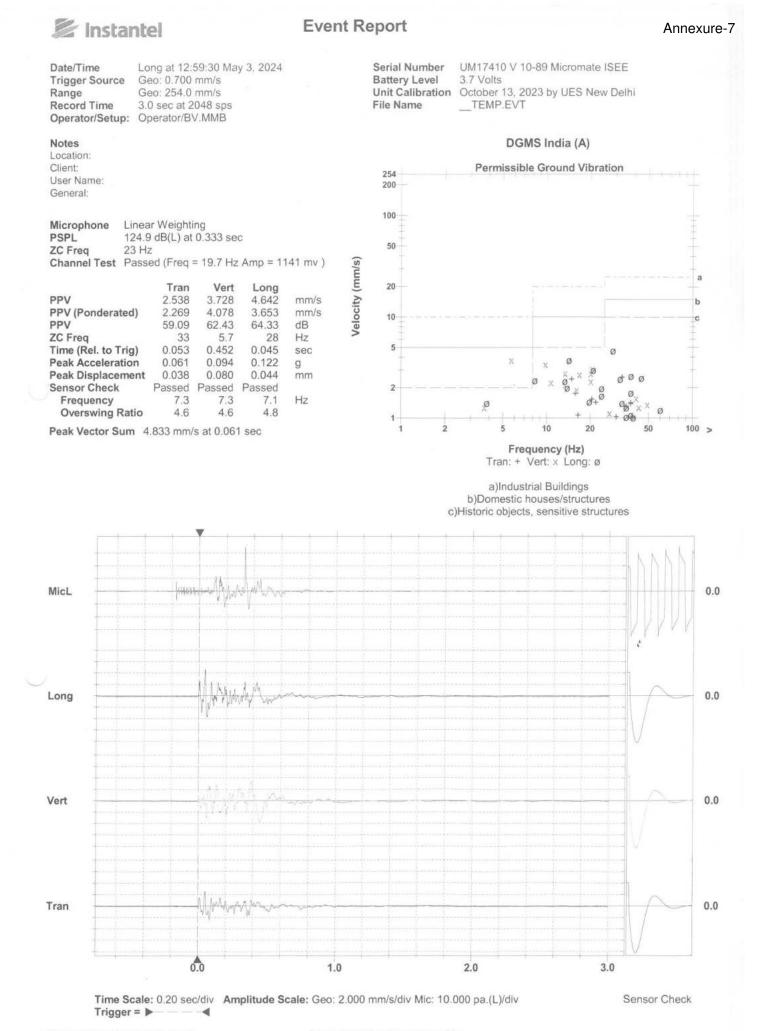
Report of Medical	Examination under Mines Rule 29B sed in continuation with Form "0")
Certificate No.	AMT Chirodih 13348
Name	Mahendra Munda
Identification Marks	A mole mark on left leg

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	94 O(D-14-14	T
Forced Vital Capacity (FVC)	2.87		% Of Predicted	
Forced Exhalation Volume in		2.84	99	-
1 st Second(FEV1)	2.42	2.04		-
FEV1/FVC	84.32	2.84	117	
Peak Expiratory Flow		100	119	
	8.1	7.9	98	-
Santanad Calman St.				-

Enclosed Spirometry Report:

Signature of the Examination Authority De Ompeakash Duboy St. Consultant Hindalco Micros Div., Lonardaga Hindalco Micros Div., Lonardaga Reg. No - PE-S of 5



Printed: May 21, 2024 (V 10.72 - 10.72)

Annexure-7

MINERALS & MINERALS LIMITED

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Iharkhand-835302 Tel.-06526-223163 CIN NO. U26990JH1970PLC000875

Ref. :

Date दिनांक - 16.09.2021

मिनरल्स एण्ड मिनरल्स लिमिटेड अमतीपानी–चिरोडीह बॉक्साईट माइंस

महाशय/महाशया,

आपको यह सूचित किया जाता है कि अमतीपानी–चिरोडीह बॉक्साईट माइंस (130.01 है0) को पर्यावरण स्वीकृति (E.C.)प्रदान किया गया है। उसका प्रतिलिपि इस सूचना के साथ संलग्न किया जा रहा है।

आपके सूचना के लिए प्रेरित।

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प्रधान कार्याकारी अध्यक ग्राम पंचायत अमतीपानी प्रखण्ड-विशुनगुर,जिला-गुनुव (झारखण्ड)।

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खान प्रबंधक (अमतीपानी बॉक्साईट माइंस)

MINERALS & MINERALS LIMITED

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Iharkhand-835302 Tel.-06526-223163 CIN NO. U26990JH1970PLC000875

Ref. :

दिनांक - 16.09.2021

Date

मिनरल्स एण्ड मिनरल्स लिमिटेड अमतीपानी-चिरोडीह बॉक्साईट माइंस

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