

# 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: [ro.ranchi-mef@gov.in](mailto:ro.ranchi-mef@gov.in), [mef@ori.nic.in](mailto:mef@ori.nic.in), [mef@nic.in](mailto:mef@nic.in), [mef.or@nic.in](mailto:mef.or@nic.in), [mescb.cpcb@nic.in](mailto:mescb.cpcb@nic.in), [zokolkatta.cpcb@nic.in](mailto:zokolkatta.cpcb@nic.in), [ranchijspcb@gmail.com](mailto:ranchijspcb@gmail.com), [roranchi47@gmail.com](mailto:roranchi47@gmail.com)

**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<sup>st</sup> April 2024 to 30<sup>th</sup> 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. Statutory Compliance**

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

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

**Condition 2- 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.



भारत सरकार  
जल शक्ति मंत्रालय  
जल संवर्धन, नदी विकास  
और गंगा संरक्षण विभाग  
केन्द्रीय भूमि जल प्राधिकरण  
Government of India  
Ministry of Jal Shakti  
Department of Water Resources,  
River Development & Ganga Rejuvenation  
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)  
**NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION**

Project Name:		Amtipani Chirodih Bauxite Mine (130.01 Ha)					
Project Address:		Amtipani Chirodih Bauxite Mine, Mauza -chirodih, P S - Gumla,, District - Gumla					
Village:		Chirodih		Block:		Bishunpur	
District:		Gumla		State:		Jharkhand	
Pin Code:							
Communication Address:		Minerals Minerals Ltd, Court Road Lohardaga, Lohardaga, Jharkhand, Lohardaga, Lohardaga, Jharkhand - 835302					
Address of CGWB Regional Office :		Central Ground Water Board Mid Eastern Region, 6th & 7th Floor, Lok Nayak Jai Prakash Bhawan, Frazer Road Dak Banglow, Patna, Bihar - 800011					
1. NOC No.:	CGWA/NOC/MIN/REN/1/2024/9802	2. Date of issuance	01/08/2024				
3. Application No.:	21-4/914/JH/MIN/2022	4. Category: (GWRE 2023)	Safe				
5. Project Status:	Existing Ground Water	6. NOC Type:	Renewal				
7. Valid from:	31/08/2024	8. Valid up to:	30/08/2026				
9. Ground Water Abstraction Permitted:							
Fresh Water		Saline Water		Dewatering		Total	
m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year
9.50	3467.50						
10. Details of ground water abstraction /Dewatering structures							
Total Existing No.:1				Total Proposed No.:0			
	DW	DCB	BW	TW	MP	MPu	
Abstraction Structure*	0	0	1	0	0	0	0
*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps							
11. Ground Water Abstraction/Restoration Charges paid (Rs.):						6936.00	
12. Environment Compensation (if applicable) paid (Rs.):						0.00	

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

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](http://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. PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, CO and SO<sub>2</sub> 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 PM<sub>10</sub> and PM<sub>2.5</sub> 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 six-monthly 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 six-monthly basis.

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

Monitoring Reports are being sent regular to regional office of Ministry, CGWA and JSPCB on six-monthly 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.**

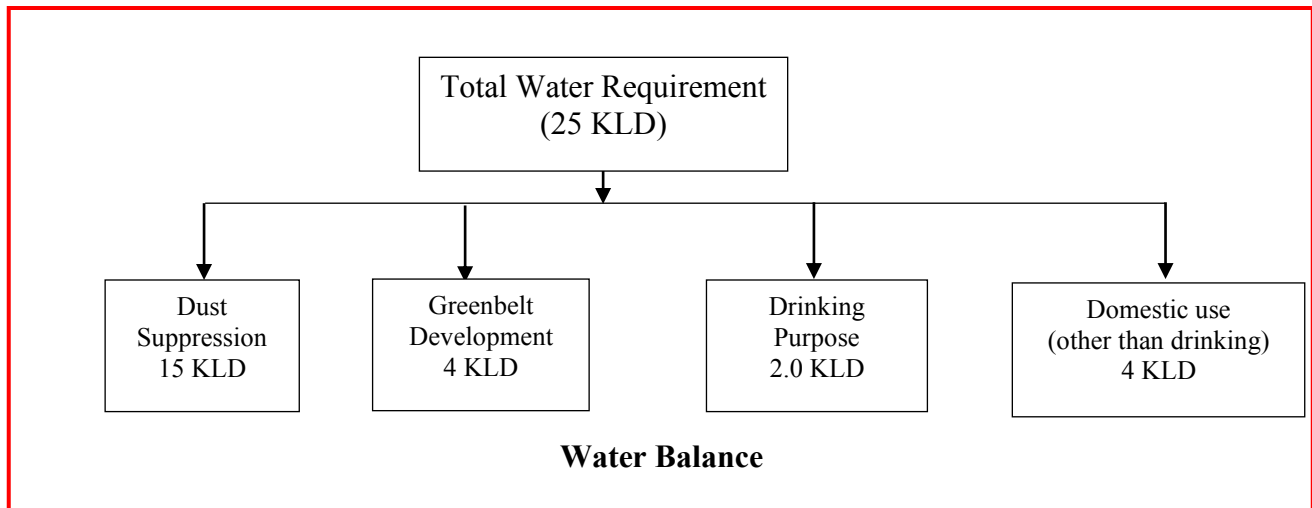
**Reply to Condition 6-** Rainwater harvesting pond with proper fencing has been planned post creating some voids during mining operations. Photographs of the same will be submitted to your good office once it is constructed.

**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.



Garland drains around Mine Pit

**Condition 7-** Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining 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:





Tarpsaulin covered truck for transportation of bauxite.

Form 59  
Pollution Under Control Certificate [See rules 112 (2)]  
Authorized By: Government of Jharkhand

Date: 13/07/2024  
Time: 11:10:21 AM  
Validity upto: 12/01/2025

Vehicle No. JH01900249005508  
Registration No. JH01900249005508  
Date of Registration: 06/06/2023  
Make & Year of Manufacturing: Mahindra 2017  
Vehi. Make Number: 19011000  
Emission Norms: Bharat Stage III  
Fuel: DISEL  
PUC Code: JH0190024  
GEM: 1  
Price: 46,300.00  
MLL: 1000000

Vehicle Photo with Registration plate  
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission Limits	Measured Value (after 2 observer places)
1	Carbon Monoxide (CO)	percentage (%)	1.5	0.34
2	Hydrocarbon, (THC/HC)	ppm	1.5	0.34
3	CO	ppm	2500 ± 20%	
4	Smoke	opacity	1 ± 0.03	
5	Light absorption coefficient	1/metre	2.45	

Note: 1. Vehicle owners to see their mobile numbers to registered vehicle by logging to <https://puc.jharkhand.gov.in>  
Polluted Signatures with stamp of PUC Operator  
60mm x 20 mm

PUC Certificate

**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.



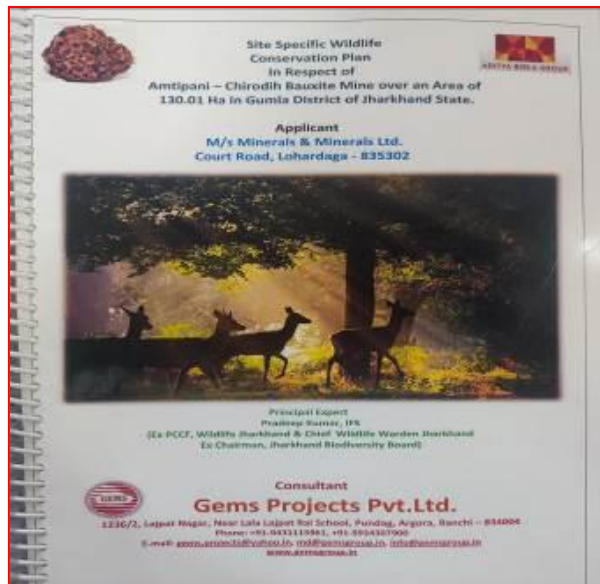
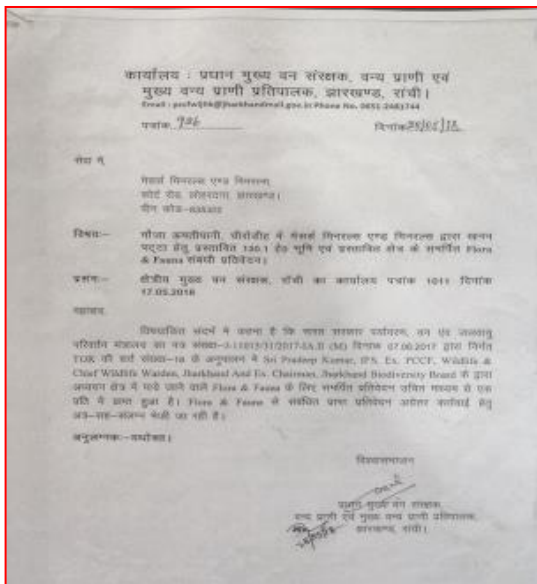
Plantation activities

**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.



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 PME (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**

<b>Piezometer Reading - Amtipani Chirodih Bauxite Mine</b>		
<b>S No</b>	<b>Month</b>	<b>Depth (meter)</b>
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

## **ENVIROCHECK**

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

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

**April 2024**

## CONTENT

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

## TEST REPORT

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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ENVJK/2024/AA/1720
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Site; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 13.04.2024 to 14.04.2024
Mines Status	: Operational	Sample Received Date	: 15.04.2024
Period of Analysis	: 15.04.2024 to 23.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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 <sup>3</sup>	IS 5182 (Part 23): 2006	67	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L: 2006	38	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 2): 2001	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 6): 2006	21.4	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	USEPA Method – TO-3 (GC-MS Method)	<2.5	05 (Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	USEPA Method – TO-3A (GC-MS Method)	<0.5	01 (Annual)

Reviewed by :



(Saswata Burman Roy, Dy. Quality Manager)

\*\*\*\*End\*\*\*\*



Authorised Signatory :



(Bapan Das, Dy. Technical Manager)

Page 1 of 1



## TEST REPORT

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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ENVJK/2024/AA/1721
Address	: Lohardaga, Jharkhand-835302	Location	: Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 13.04.2024 to 14.04.2024
Mines Status	: Operational	Sample Received Date	: 15.04.2024
Period of Analysis	: 15.04.2024 to 23.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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 <sup>3</sup>	IS 5182 (Part 23): 2006	71	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	43	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 2): 2001	11.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 6): 2006	25.7	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	USEPA Method - TO-3 (GC-MS Method)	<2.5	05 (Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	USEPA Method - TO-3A (GC-MS Method)	<0.5	01 (Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

\*\*\*\*End of ENVIROCHECK\*\*\*\*



Authorised Signatory :

(Bapan Das, Dy. Technical Manager)

## TEST REPORT

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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ENVJK/2024/AA/1722
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Office; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 13.04.2024 to 14.04.2024
Mines Status	: Operational	Sample Received Date	: 15.04.2024
Period of Analysis	: 15.04.2024 to 23.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & 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 <sup>3</sup>	IS 5182 (Part 23): 2006	70	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	36	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 2): 2001	12.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 6): 2006	29.9	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.017	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :



(Saswata Burman Roy, Dy. Quality Manager)

\*\*\*\*End\*\*\*\*



Authorised Signatory :



(Bapan Das, Dy. Technical Manager)

Page 1 of 1





## 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ENVJK/2024/AA/1723
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 13.04.2024 to 14.04.2024
Mines Status	: Operational	Sample Received Date	: 15.04.2024
Period of Analysis	: 15.04.2024 to 23.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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 <sup>3</sup>	IS 5182 (Part 23): 2006	54	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 2): 2001	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 6): 2006	23.5	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.014	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	USEPA Method – TO-3 (GC-MS Method)	<2.5	05 (Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	USEPA Method – TO-3A (GC-MS Method)	<0.5	01 (Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

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



Authorised Signatory :

(Bapari Das, Dy. Technical Manager)



### TEST REPORT

Test Report No. : ENVJK/113W/APR/TR(W)24-25	Report Release Date : 28.04.2024
Work Order No. : 13612312113	Work Order Date : 26.03.2024

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Himales Industries Limited	Sample Ref. No.	: ENVJK/2024/AA/1064
Address	: Lohardiga, Jharkhand-835302	Location	: Near PokriOuda Village
		Sampling Date	: 17.04.2024 to 18.04.2024
Plant Status	: Operational	Sample Received Date	: 22.04.2024
Period of Analysis	: 22.04.2024 to 28.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 29	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 51	4	Weather Condition	: Clear

Discipline: Chemical Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part 23): 2006	63	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	USEPA 1997a, 40 CFR Part 50, Appendix L: 2006	34	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part 2): 2001	3.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part 6): 2006	26.5	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2019	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	16 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	$\mu\text{g}/\text{m}^3$	USEPA Method - TO-15 (GC-MS Method)	<2.5	15 (Annual)
Benzo(a)Pyrene	$\text{ng}/\text{m}^3$	USEPA Method - TO-15A (GC-MS Method)	<0.5	01 (Annual)

Reviewed by :

(Sarwati Ramesh Roy, Dy. Quality Manager)

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



Authorised Signatory :

(Rajan Dix, Dy. Technical Manager)

## TEST REPORT

Test Report No. : ENVJK/1140/APR/TR(W)24-25	Report Release Date : 28.04.2024
Work Order No. : 13612312113	Work Order Date : 28.03.2024

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ENVJK/2024/AA/1665
Address	: Lohardaga, Jharkhand-835302	Location	: Near Poi Poi Village
		Sampling Date	: 17.04.2024 to 18.04.2024
Mines Status	: Operational	Sample Received Date	: 22.04.2024
Period of Analysis	: 22.04.2024 to 28.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SAMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

### METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 29	2	Barometric Pressure (mmHg)	: 742
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 <sup>3</sup>	IS 5182 (Part 23): 2006	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 2): 2001	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 6): 2006	24.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	<0.0	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	USEPA Method – IO-3.5 (ICP-MS Method)	<2.6	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	pg/m <sup>3</sup>	USEPA Method – TO-3 (GC-MS Method)	<2.5	05 (Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	USEPA Method – TO-3A (GC-MS Method)	<0.1	01 (Annual)

Reviewed by :



(Saswata Burman Roy, Dy. Quality Manager)

\*\*\*\*End\*\*\*\*



Authorised Signatory :



(Bapan Das, Dy. Technical Manager)



### 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ENVJK/2024/AA/1666
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shaktasapani Village
		Sampling Date	: 17.04.2024 to 18.04.2024
Misses Status	: Operational	Sample Received Date	: 22.04.2024
Period of Analysis	: 22.04.2024 to 28.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SAMPL02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline: Chemical Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part 23): 2006	68	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L: 2006	36	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 2): 2001	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 6): 2006	24.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	USEPA Method – TO-3 (GC-MS Method)	<2.5	05 (Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	USEPA Method – TO-3A (GC-MS Method)	<0.5	01 (Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

\*\*\*\*End\*\*\*\*



Authorised Signatory :

(Bapan Das, Dy. Technical Manager)



## TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ENVJK/2024/AA/1667
Address	: Lohardaga, Jharkhand-835302	Location	: Near Dipakujara Village
		Sampling Date	: 17.04.2024 to 18.04.2024
Mines Status	: Operational	Sample Received Date	: 22.04.2024
Period of Analysis	: 22.04.2024 to 28.04.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SAMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

### Discipline: Chemical Group: Atmospheric Pollution

Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part 23): 2006	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	USEPA 1997a, 40 CFR Part 50, Appendix L: 2006	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 2): 2001	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part 6): 2006	23.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	USEPA Method - TO-3 (GC-MS Method)	<2.5	05 (Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	USEPA Method - TO-3A (GC-MS Method)	<0.5	01 (Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)



Authorised Signatory :

(Bipan Das, Dy. Technical Manager)

Page 1 of 1

**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

Minerals & Minerals : Antipani Chirodih (130.01ha) Bauxite Mine Environmental Monitoring Report May 2024	
Antipani Chirodih (130.01ha) Bauxite Mine	
	<b>AMBIENT AIR QUALITY- CORE ZONE</b>
1	Mine Site (Antipani Chirodih Bauxite Mine)
2	Weigh Bridge (Antipani Chirodih Bauxite Mine)
3	Mine Office (Antipani Chirodih Bauxite Mine)
4	Entrance Gate (Antipani Chirodih Bauxite Mine)
	<b>AMBIENT AIR QUALITY- BUFFER ZONE</b>
1	Near Pakri Gadu Village
2	Near Pol Pol Village
3	Near Shakhupani Village
4	Near Dipa Kujam Village
	<b>Drinking Water</b>





# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

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

## METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	21.9	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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





CIN: U74999JH2018PTC011125

# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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



TC-11887

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74909JH2018PTC021125

## 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.	: ELES/RNC/2024/AA/3067
Address	: Lohardaga, Jharkhand-835302	Location	: Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 15.05.2024 to 16.05.2024
Mines Status	: Operational	Sample Received Date	: 18.05.2024
Period of Analysis	: 18.05.2024 to 23.05.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

## METEOROLOGICAL INFORMATION

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

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

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2024PTC011125

## 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 (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by

**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

Authorised Signatory

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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



CIN: U74900JH2018PTC0131125

## 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.	: ELES/RNC/2024/AA/3068
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Office; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 15.05.2024 to 16.05.2024
Mines Status	: Operational	Sample Received Date	: 18.05.2024
Period of Analysis	: 18.05.2024 to 23.05.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	75	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	12.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	30.4	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.019	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

Save Environment, Save Future



CIN: U74999JH2018PTC011225

# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



IC-1238F

## 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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC031125

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

## METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	9.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	23.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



CIN: U74999JH2018PTC011175

# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D174**ENGINEERING SERVICES PVT. LTD.**Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)

TC-13887

## 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 (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARGVAH ENCLAVE, TURUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAEC297110124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



GN: 07489840018PTC01123

## 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	

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

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	24.9	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<10.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	30 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TURJUDANA  
KATIA, RANCHI-834003 (JHARKHAND)  
EST NO- 25AAECBEF1E124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0652-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CM: 07493E901187001123

## TEST REPORT

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

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

**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

*Authorized Signatory*

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

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated in 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 liabilities of liability, compensation and production issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are returned for 30 days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Test schedule mentioned in Test Report is in 24hours format. Abbreviation used: WA (Not Applicable), BDL (Below Detection Limit), LDC (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

FLOT NO-36, MANSARGHAR ENCLAVE, TUFUIDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 25AAECE7120134

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in) ; [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74902JH2016PT001123

## 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
U.I.R No. : TC135872400000650F	

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

## METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	24.7	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer to initial only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instruction. The Laboratory is responsible for all the information or data provided in 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, advertised, used for any legal action unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are returned for 30 days from the Date of release of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report release/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24 hours format. Abbreviation used: N/A (Not Applicable), INL (Inconclusive Limit), LML (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TIJUPUDANA  
HATTA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAEC8713D124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no:- 0831-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74900JH2015PT001124

## 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	

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

Authorized Signatory  
**Dr. Deependra Kumar Singh**  
Ph. D Environmental Engg.  
ELES Pvt. Ltd. Technical Manager



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATTA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAACE97130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [alesranchi@gmail.com](mailto:alesranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CR:474986/2018P/011125

TC-0887

## TEST REPORT

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

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

## METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 11/Sec- 1): 2023	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	23.5	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
 AKASH KUMAR  
 Quality Manager  
 ELES PVT. LTD.

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

  
 Authorised Signatory  
 Dr. Deependra Kumar Shaha  
 Ph. D Environmental Engg.  
 ELES Pvt. Ltd. Technical Director

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO- JDAAGCE27130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elesal.co.in](mailto:info@elesal.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elesal.co.in](http://www.elesal.co.in)



## TEST REPORT

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

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

## METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	7.6	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	24.7	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided in 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 matters unless prior permission has been received from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any alteration or misrepresentation & fabrication of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Compliances regarding the Reports shall be done within 15days from the Date of Test Report reissued/forward. After the time period stated before, no complaints will be accepted. The entire Time Schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable); NDL (Below Detection Limit); LDR (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

FLOT NO-33, MANSAROVAR ENCLAVE, TUPUDAMA  
HATA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAJEC297130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74900JH2018PT0211124

## TEST REPORT

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

Discipline: Chemical

Group: Atmospheric Pollution

Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
 Reviewed by  
**AKASH KUMAR**  
 Quality Manager  
 ELES PVT. LTD.

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

  
 Authorised Signatory  
**Dr. Deependra Kumar Singh**  
 Pp. D Environmental Engg.  
 ELES Pvt. Ltd. Technical Manager

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in 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, advertised, used for any legal actions unless prior permission has been received from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report reissued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24-hours format. Abbreviations used: N/A (Not Applicable), ND, (Noble Detection Limit), LOD, (Lower Detection Limit)



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC021125

## 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.	: ELES/RNC/2024/DW/3073
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 16.05.2024
		Sample Received Date	: 18.05.2024
Mines Status	: Operational	Type of Sample	: Drinking Water
		Source/Location of Sample	: Near Office, Antipani Chirodih Bauxite Mine (130.01 ha)
Period of Analysis	: 18.05.2024 to 28.05.2024	Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Page 1 of 4

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

**"Save Environment, Save Future"**





# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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 Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	BDL (DL: 0.5)	45	No Relaxation
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2	1.0
Calcium (as Ca)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 3500 Ca B	10.3	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0

Discipline : Chemical		Group : Residues in Water			
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	2.4
Cadmium (as Cd)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium(as Cr)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.081	1.0	1.0
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation

Page 2 of 4

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

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

PLDT NO-36, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAEC97130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in) , [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC01123

## 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 : Residues in Water		Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 24 <sup>th</sup> 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
<b>Pesticides</b>				<b>Limit</b>	
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	20	
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125	
Chlorpyrifos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190	
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0.30	
Monoerotophos	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	

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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



TC-12007

CIN: U74900JH2018PTC01125

## 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/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04
Gamma HCH (Lindane)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(o,p and p,p-isomers of DDT,DDEand DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
<b>Discipline : Biological</b>		<b>Group : Water</b>		
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	

Remarks: 1. pH and RFC done at Lab.

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://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
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15.05.2024
		Sample Received Date	: 16.05.2024
Mines Status	: Operational	Type of Sample	: Drinking Water
Period of Analysis	: 18.05.2024 to 28.05.2024	Source/Location of Sample	: Near Office, Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

**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 :- Amtipani Chirodih (130.01ha) Bauxite Mine Environmental Monitoring Report June 2024	
Amtipani Chirodih (130.01ha) Bauxite Mine	
	<b>AMBIENT AIR QUALITY- CORE ZONE</b>
1	Mine Site (Amtipani Chirodih Bauxite Mine)
2	Weigh Bridge (Amtipani Chirodih Bauxite Mine)
3	Mine Office (Amtipani Chirodih Bauxite Mine)
4	Entrance Gate (Amtipani Chirodih Bauxite Mine)
	<b>AMBIENT AIR QUALITY- BUFFER ZONE</b>
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near Dipa Kujam Village





# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74900JH2018PTC011125

## TEST REPORT

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.	: ELES/RNC/2024/AA/4034
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Site; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 21.06.2024 to 22.06.2024
Mines Status	: Operational	Sample Received Date	: 24.06.2024
Period of Analysis	: 24.06.2024 to 29.06.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	7.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.3	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U76909JH2018PTC011125

## TEST REPORT

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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





# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011129

## 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	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4035
Address	: Lohardaga, Jharkhand-835302	Location	: Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 21.06.2024 to 22.06.2024
Mines Status	: Operational	Sample Received Date	: 24.06.2024
		Type of Sample	: Ambient Air
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	70	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	12.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	25.9	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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



# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

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



CIN: U74909JH2016PVT011125

## 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 (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
AKASH KUMAR  
Quality Manager  
ELES PVT. LTD.

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

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

Page 2 of 2

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATTA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAACE9713D124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74919JH2018PTC011125

## 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.	: ELES/RNC/2024/AA/4036
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Office; Amtipuni Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 21.06.2024 to 22.06.2024
Mines Status	: Operational	Sample Received Date	: 24.06.2024
Period of Analysis	: 24.06.2024 to 29.06.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	71	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	12.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	28.7	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.016	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74902JH2018PT0013225

## 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		

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

Page 2 of 2

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74900JH2016PTC011125

## 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.	: ELES/RNC/2024/AA/4037
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate, Amtipani Chirodih Bauxite Mine (130.01 ha)
Mines Status	: Operational	Sampling Date	: 21.06.2024 to 22.06.2024
Period of Analysis	: 24.06.2024 to 29.06.2024	Sample Received Date	: 24.06.2024
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	9.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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



# 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



CIN: U74999JH2018PTC011129

## 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		

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

AKASH KUMAR  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSATOVAR ENCLAVE, TUPLEDNA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO: 20AAEC297130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.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
Address	: Lohardaga, Jharkhand-835302	Location	: Near Pakri Gada Village
		Sampling Date	: 17.06.2024 to 18.06.2024
Mines Status	: Operational	Sample Received Date	: 20.06.2024
Period of Analysis	: 20.06.2024 to 24.06.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	24.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated in the Test Report reflects the findings done by the Laboratory at the time of measurement only and within the limits of client's requirements. 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, advertised, used for any legal actions unless prior permission has been received from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Objections or Complaints regarding the Reports shall be done within 15days from the Date of Test Report release/issue. After the time period stated below, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LD, (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TOPUDANA  
HATSA, RANCHI-834003 (JHARKHAND)  
GST NO- 20AAECE97180274

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290203  
Website : [www.elespl.co.in](http://www.elespl.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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

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





### TEST REPORT

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

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

### METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	24.9	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<30.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)



# ENVIRONMENTAL LABORATORIES &

FLOT NO-35, 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.: 0651-2190103  
Website: www.elespl.co.in



CIN: U74900JH2015PTC011125

## TEST REPORT

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

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

Page 2 of 2

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
MATA, RANCHI-834003 (JHARKHAND)  
GST NO: 20AAACEV7130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0653-2290103  
Website: [www.elespl.co.in](http://www.elespl.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	

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

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	58	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-II/Sec- 1): 2023	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	24.2	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report relate only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertised, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are returned for 30 days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report release/issue. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24 hours format. Abbreviation used: TWA (90) (Applicable); BEC (Below Detection Limit); LOD (Lower Detection Limit).



CIN: U74300GJ2014PT0211125

### 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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by:  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



### 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.	: ELES/RNC/2024/AA/3847
Address	: Lohardaga, Jharkhand-835302	Location	: Near Dipa Kujam Village
		Sampling Date	: 17.06.2024 to 18.06.2024
Mines Status	: Operational	Sample Received Date	: 20.06.2024
Period of Analysis	: 20.06.2024 to 24.06.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	23.8	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/ATR/SOP/01: 2021	<2.0	06 (Annual)



### 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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<1.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

**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 : Amtipani Chirodih (130.01ha) Bauxite Mine Environmental Monitoring Report July 2024	
Amtipani Chirodih (130.01ha) Bauxite Mine	
	<b>AMBIENT AIR QUALITY- CORE ZONE</b>
1	Mine Site (Amtipani Chirodih Bauxite Mine)
2	Weigh Bridge (Amtipani Chirodih Bauxite Mine)
3	Mine Office (Amtipani Chirodih Bauxite Mine)
4	Entrance Gate (Amtipani Chirodih Bauxite Mine)
	<b>AMBIENT AIR QUALITY- BUFFER ZONE</b>
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near Dipa Kujam Village







# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAEC297130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4871
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Site; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 19.07.2024 to 20.07.2024
Mines Status	: Operational	Sample Received Date	: 23.07.2024
Period of Analysis	: 23.07.2024 to 29.07.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	20.7	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE87130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD

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

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE97130J24

ENGINEERING SERVICES PVT. LTD.

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



TC-13587

## 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4872
Address	: Lohardaga, Jharkhand-835302	Location	: Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 19.07.2024 to 20.07.2024
Mines Status	: Operational	Sample Received Date	: 23.07.2024
Period of Analysis	: 23.07.2024 to 29.07.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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/m <sup>3</sup>	IS 5182 (Part- 23): 2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	9.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	23.8	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in) , [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



TC-1387

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



YC-1987

## TEST REPORT

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	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4873
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Office; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 19.07.2024 to 20.07.2024
Mines Status	: Operational	Sample Received Date	: 23.07.2024
Period of Analysis	: 23.07.2024 to 29.07.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	54	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	20.7	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE37130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

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



10-1387

## TEST REPORT

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.	: ELES/RNC/2024/AA/4874
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate; Amtipani Chirodih Bauxite Mine (130.01 ha)
Mines Status	: Operational	Sampling Date	: 19.07.2024 to 20.07.2024
Period of Analysis	: 23.07.2024 to 29.07.2024	Sample Received Date	: 23.07.2024
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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/m <sup>3</sup>	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	9.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.7	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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





# ENVIRONMENTAL LABORATORIES &

FLOT NO-30, MANSARVAR ENCLAVE, TUPUDAMA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO- 20AAACE97130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



TC-1387

## 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
Address	: Lohardaga, Jharkhand-835302	Location	: Near Pakri Gada Village
		Sampling Date	: 15.07.2024 to 16.07.2024
Mines Status	: Operational	Sample Received Date	: 17.07.2024
Period of Analysis	: 17.07.2024 to 22.07.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	55	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	22.2	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 3

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



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSARVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE971ED12A

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://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	

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

  
Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

The Data/statement stated in Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer to samples only, in the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertised, 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 & fabrication of the content or appearance of the Test Report is allowed and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report release/issue. After this time period stated before, no complaints will be accepted. The active Time schedule mentioned in Test Report is in 30minutes format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LEL (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAACE57130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



ISO 15001

## TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4693
Address	: Lohardaga, Jharkhand-835302	Location	: Near Poi Pol Village
		Sampling Date	: 15.07.2024 to 16.07.2024
Miner Status	: Operational	Sample Received Date	: 17.07.2024
Period of Analysis	: 17.07.2024 to 22.07.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	52	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	16.1	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided in 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 action unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report release/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), NDL (Below Detection Limit), LDC (Lower Detection Limit).

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAACE97130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

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

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

  
Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

  
Authorized Signatory  
**Dr. Deependra Kumar Singh**  
Ph. D Environmental Engg.  
ELES Pvt. Ltd. Technical Manager

Page 2 of 2

The Document issued as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided in the report, except the information which is provided by the clients. 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, advertised, used for any legal actions unless prior permission has been received from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report release/issue. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviations used: N/A (Not Applicable), NDL (Below Detection Limit), LEL (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA  
KATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE97120124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [els\\_ranchi@gmail.com](mailto:els_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U40999JH2018PT001122

## 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	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4694
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shakhupani Village
		Sampling Date	: 15.07.2024 to 16.07.2024
Mines Status	: Operational	Sample Received Date	: 17.07.2024
Period of Analysis	: 17.07.2024 to 22.07.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	58	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	18.5	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-20, MAHARAJA ENCLAVE, TUPUDANA  
KATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE971E0124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

Test Report No. : ELES/RNC/2024/4099	Report Release Date : 22.07.2024
Work Order No. : 13612312113	Work Order Date : 38.03.2024
ULR No. : TC135872400002034F	

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANGARVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAEC97120124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4695
Address	: Lohardaga, Jharkhand-835302	Location	: Near Dipa Kujam Village
		Sampling Date	: 15.07.2024 to 16.07.2024
Mines Status	: Operational	Sample Received Date	: 17.07.2024
Period of Analysis	: 17.07.2024 to 22.07.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	51	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	20.5	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.004	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAKCE97130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011127

## TEST REPORT

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

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

Page 2 of 2

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



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

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

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

**August 2024**



## CONTENT

Minerals & Minerals : Amtipani Chirodih (130.01ha) Bauxite Mine Environmental Monitoring Report August 2024	
Amtipani Chirodih (130.01ha) Bauxite Mine	
	<b>AMBIENT AIR QUALITY- CORE ZONE</b>
1	Mine Site (Amtipani Chirodih Bauxite Mine)
2	Weigh Bridge (Amtipani Chirodih Bauxite Mine)
3	Mine Office (Amtipani Chirodih Bauxite Mine)
4	Entrance Gate (Amtipani Chirodih Bauxite Mine)
	<b>AMBIENT AIR QUALITY- BUFFER ZONE</b>
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhupani Village
4	Near Dipa Kujam Village
	<b>Drinking Water</b>





# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/5579
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Site; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 16.08.2024 to 17.08.2024
Mines Status	: Operational	Sample Received Date	: 20.08.2024
		Type of Sample	: Ambient Air
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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/m <sup>3</sup>	IS 5182 (Part- 23): 2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	8.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.5	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in) ; [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999/JH2018PTC011125

## 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/5580
Address	: Lohardaga, Jharkhand-835302	Location	: Weigh Bridge; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 16.08.2024 to 17.08.2024
Mines Status	: Operational	Sample Received Date	: 20.08.2024
Period of Analysis	: 20.08.2024 to 27.08.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	70	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	24.1	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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 <sub>6</sub> H <sub>6</sub> )	ug/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC031125

## 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	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/5581
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Office: Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 16.08.2024 to 17.08.2024
Mines Status	: Operational	Sample Received Date	: 20.08.2024
		Type of Sample	: Ambient Air
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	66	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	11.6	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	26.2	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.014	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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



CM: G78999/H2018/PTC01123

# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPLUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAEC9713D124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



## 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 (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in 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 limitations of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit)





# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/5582
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 16.08.2024 to 17.08.2024
Mines Status	: Operational	Sample Received Date	: 20.08.2024
Period of Analysis	: 20.08.2024 to 27.08.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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/m <sup>3</sup>	IS 5182 (Part- 23): 2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	37	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	11.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	23.8	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided in 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 limitations of liability, compensation and jurisdiction issues. Any unauthorised alteration & fabrication of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Test schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999/JH2018PTC011125

## 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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA  
NATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AA3CE9713012E

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://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 Date : 28.03.2024
ULR No. : TC135872400002676F	

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

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23); 2022	43	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24); 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1); 2023	5.6	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6); 2022	18.1	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22); 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)

The Certificate stated in Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & misquoting of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report release/issue. After the time period stated herein, no complaints will be accepted. The metric TDS actually mentioned in Test Report is in 200mg/l format. Abbreviations used: N/A (Not Applicable), NDL (Below Detection Limit), LDU (Lower Detection Limit)




### TEST REPORT

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

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

  
Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPIUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
EST NO- 20446297130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290108  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2012PT0001124

## TEST REPORT

Test Report No. : ELES/RNC/2024/4758	Report Release Date : 22.08.2024
Work Order No. : 13612312115	Work Order Date : 28.03.2024
ULR No. : TC135872400002677F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/5441
Address	: Lohardaga, Jharkhand-835302	Location	: Near Pol Pol Village
		Sampling Date	: 12.08.2024 to 13.08.2024
Mines Status	: Operational	Sample Received Date	: 14.08.2024
Period of Analysis	: 14.08.2024 to 22.08.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

## METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	41	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- II/Sec- 1): 2023	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	14.8	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<5.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre approved format. The results shown in the Test Report refer or relate only to the analysis done by the Laboratory only. The information stated in the Test Report reflects the findings done by the Laboratory in the limit of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided in the report, except the information which is provided by the 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 received from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any withdrawal alteration & modification of the content or appearance of the Test Report is inadvisable and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days from the Date of issuance of the Test Report. The samples from Regulatory authorities to be retained as specified. Any type of Objections or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report submission. After the time period stated below, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24 hours format. Abbreviation used: N/A (Not Applicable); GUL (Below Detection Limit); L.DL (Lower Detection Limit).

Save Environment, Save Future



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, FULPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO- 20AAJCE5718U3Z4

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290109  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CG: UTRBCH9018PFC21125

## TEST REPORT

Test Report No.	: ELES/RNC/2024/4758	Report Release Date	: 21.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002677F		

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

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



# ENVIRONMENTAL LABORATORIES &

FLOT NG-30, AKASAROVAR ENCLAVE, TUPUDAMA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAACE118D134

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@elespl.com](mailto:eles.ranchi@elespl.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74909JH2012PT001122

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

## METEOROLOGICAL INFORMATION

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

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	44	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- II/Sec- 1): 2023	5.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	15.1	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AJR/SOP/01: 2021	<2.0	06 (Annual)

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated in 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 in 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 & fabrication of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days from the Date of issuance of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report issuance. After the time period stated before, no complaints will be accepted. The entire Test schedule mentioned in Test Report is in 24 hours format. Abbreviation used: IWA (Over Appraisal), LOD (Below Detection Limit), LFL (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARVAR ENCLAVE, TUPLUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
EST NO- JMAECEP/130114

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CR: UM363adillaPROC01125

## TEST REPORT

Test Report No.	: ELES/RNC/2024/4759	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002678F		

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

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

The Document stated in Test Report, is issued by the Laboratory under General Terms and Conditions, with an Company letter head in pre-approved format. The results shown in the Test Report only or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertised, 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 or falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of submission of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), MDL (Below Detection Limit), LDC (Lower Detection Limit).





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATHA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAACE37130124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74900JH2012PT011321

## 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.	: ELES/RNC/2024/AA/5443
Address	: Lohardaga, Jharkhand-835302	Location	: Near Dipa Kujam Village
		Sampling Date	: 12.08.2024 to 13.08.2024
Mines Status	: Operational	Sample Received Date	: 14.08.2024
Period of Analysis	: 14.08.2024 to 22.08.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

## METEOROLOGICAL INFORMATION

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

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

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated in 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 in 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, advertised, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24 hours format. अधिकाधिक गुणवत्ता (Net Applications, ITO), (Bihar) डेटा (Int'l), LIT, (Kerala) डेटा (Int'l)



# ENVIRONMENTAL LABORATORIES &

FLOT NO-30, MANSarovAR ENCLAVE, TUJUDANA  
HATA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAICE92L3D124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0653-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2016PTC011125

## TEST REPORT

Test Report No.	: ELES/RNC/2024/4760	Report Release Date	: 23.08.2024
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 <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<1.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

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

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's association. 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, abstracted, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days from the Date of completion of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report submission. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24 hours format. Abbreviations used: N/A (Not Applicable); ND (Not in Detection Limit); CD (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/DW/5583
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.08.2024
		Sample Received Date	: 20.08.2024
Mines Status	: Operational	Type of Sample	: Drinking Water
		Source of Sample	: R.O Water
Period of Analysis	: 20.08.2024 to 27.08.2024	Location of Sample	: Kitchen (Amtipani Chirodih Bauxite Mine)
		Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group : Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.7°C)	-	APHA 24 <sup>th</sup> Ed.2023, 4500-H	6.61	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24 <sup>th</sup> Ed.2023, 2130 B	0.42	1.0	5.0
Taste	-	APHA 24 <sup>th</sup> Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	-	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24 <sup>th</sup> Ed.2023, 2120B&D	1.0	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 2540B,C&D	62	500	2000
Chloride (as Cl)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 Cl B	8.61	250	1000
Fluoride (as F)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 2320 B	15.5	200	600
Total Hardness (as CaCO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 2340 C	21.6	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 SO <sub>4</sub> <sup>2-</sup> -E	BDL (DL: 1.0)	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	BDL (DL: 0.5)	45	No Relaxation

Page 1 of 4

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

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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 : Water		Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	0.27	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 3500 Ca B	5.5	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemical		Group : Residues in Water			
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.068	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

Page 2 of 4

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

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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 : Residues in Water		Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated biphenyls (PCB)	µg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation
<b>Pesticides</b>				<b>Limit</b>	
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	20	
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125	
Chlorpyrifos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190	
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0.30	
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1.0	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--	
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0.03	
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.01	
Beta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04	

Page 3 of 4

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

**"Save Environment, Save Future"**



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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	

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	IS 15185: 2021	Not Detected	Shall not be detected
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	

Remarks: L. pH and RFC done at Lab.

Reviewed by  
**AKASH KUMAR**  
Quality Manager  
ELES PVT. LTD.

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

Authorized Signatory  
**Dr. Deependra Kumar Singh**  
Ph. D Environmental Engg.  
ELES Pvt. Ltd. Technical Manager

Page 4 of 4

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

"Save Environment. Save Future"



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)

CIN: U74899JH2018PTC011125

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

Discipline : Chemical		Group : Water		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 Manager  
ELES PVT. LTD.

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

Authorised Signatory

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

Page 1 of 1

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

**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**





## CONTENT

Minerals & Minerals : Amtipani Chirodih (130.01ha) Bauxite Mine Environmental Monitoring Report September 2024	
Amtipani Chirodih (130.01ha) Bauxite Mine	
	<b>AMBIENT AIR QUALITY- CORE ZONE</b>
1	Mine Site (Amtipani Chirodih Bauxite Mine)
2	Weigh Bridge (Amtipani Chirodih Bauxite Mine)
3	Mine Office (Amtipani Chirodih Bauxite Mine)
4	Entrance Gate (Amtipani Chirodih Bauxite Mine)
	<b>AMBIENT AIR QUALITY- BUFFER ZONE</b>
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhupani Village
4	Near Dipa Kujam Village
	<b>AMBIENT NOISE</b>
	<b>WORKZONE NOISE</b>
	<b>Spring Water</b>
1	Sarna Dari
	<b>Stream Water</b>
1	Up Stream (Dhardhari Nadi)
2	Down Stream (Dhardhari Nadi)





# 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



CIN: U74999JH2018PTC011125

## TEST REPORT

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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6506
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Site; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 20.09.2024 to 21.09.2024
Mines Status	: Operational	Sample Received Date	: 23.09.2024
Period of Analysis	: 23.09.2024 to 30.09.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec 1): 2023	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	18.3	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>2</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**Akash Kumar**  
Quality Manager

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

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

Page 1 of 1

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only as Company letter head in pre-approved format. The results shown in the Test Report refer or relate only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertised, 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 unauthorised alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observance or Complaints regarding the Report shall be filed within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LD, (Lower Detection Limit).

**"Save Environment, Save Future"**



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATTA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D1L24

ENGINEERING SERVICES PVT. LTD.

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



CTN: U74999JH2018PTC011125

## TEST REPORT

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 DETAILS		SAMPLE DETAILS	
Customer Name : Minerals & Minerals Limited	Address : Lohardaga, Jharkhand-835302	Sample Ref. No. : ELES/RNC/2024/AA/6507	Location : Weigh Bridge: Amtipani Chirodih Bauxite Mine (130.01 ha)
Mines Status : Operational	Period of Analysis : 23.09.2024 to 30.09.2024	Sampling Date : 20.09.2024 to 21.09.2024	Sample Received Date : 23.09.2024
		Type of Sample : Ambient Air	Sampling Procedure : ELES/DOC/SMPL/02
		Sampling Done By : ELES Pvt. Ltd.	Sample Condition : Sealed & Preserved

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	17.3	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
Akash Kumar  
Quality Manager

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

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

Page 1 of 1

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

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0653-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## TEST REPORT

Test Report No. : ELES/RNC/2024/5612	Report Release Date : 30.09.2024
Work Order No. : RP/MIJ/MM/24/0088/01	Work Order Date : 30.03.2024
ULR No. : TC135872400003510F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6508
Address	: Lohardaga, Jharkhand-835302	Location	: Mine Office; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 20.09.2024 to 21.09.2024
Mines Status	: Operational	Sample Received Date	: 23.09.2024
Period of Analysis	: 23.09.2024 to 30.09.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	48	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 2/Sec1): 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	24.5	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.010	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	$\mu\text{g}/\text{m}^3$	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	$\text{ng}/\text{m}^3$	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
**Akash Kumar**  
Quality Manager

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

Authorized Signature  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.  
Technical Manager

Page 1 of 1

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

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## TEST REPORT

Test Report No. : ELES/RNC/2024/5613	Report Release Date : 30.09.2024
Work Order No. : RP/MJB/MM/24/0088/01	Work Order Date : 30.03.2024
ULR No. : TC135872400003511F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6509
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate; Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Date	: 20.09.2024 to 21.09.2024
Mines Status	: Operational	Sample Received Date	: 23.09.2024
		Type of Sample	: Ambient Air
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	53	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	18.3	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

  
Reviewed by  
**Akash Kumar**  
Quality Manager

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

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

Page 1 of 1

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approval format. The results shown in the Test Report refer to the analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided in 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 is 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 & fabrication of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Report shall be done within 15days from the Date of Test Report release/issue. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24Hours format. Abbreviation used: N/A (Not Applicable); BDL (Below Detection Limit); LRL (Lower Detection Limit).

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

Plot No-86, Mangalvihar Enclave, Turf Road,  
BATA, JALPAIGURI (JHARKHAND)  
GST No- 20AACT29750124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.jalpaiguri@elespl.com](mailto:eles.jalpaiguri@elespl.com)  
Phone no.: 0652-2900103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

Test Report No. : ELES/RNC/2024/5350	Report Release Date : 23.09.2024
Work Order No. : 13612312113	Work Order Date : 29.03.2024
ULR No. : TC135872400003263F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name : Hindalco Industries Limited	Address : Lohardaga, Jharkhand-835302	Mines Status : Operational	Period of Analysis : 16.09.2024 to 23.09.2024
Sample Ref. No. : ELES/RNC/2024/AA/0154	Location : Near Pakri Gade Village	Sampling Date : 14.09.2024 to 15.09.2024	Sample Received Date : 16.09.2024
Type of Sample : Ambient Air	Sampling Procedure : ELES/DOC/SMP/L/02	Sampling Done By : ELES Pvt. Ltd.	Sample Condition : Sealed & Preserved

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	38	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	17	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	13.8	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
Akash Kumar  
Quality Manager

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

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

Page 1 of 1

This Document issued as Test Report, is issued by the Laboratory under General Terms and Conditions, only as Company letter head as pre-approved format. The results shown in the Test Report only relate only to the job/analysis done by the Laboratory only. The information issued 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, otherwise could be any legal actions unless prior permission has been received from the Management of the Laboratory. Laboratory does not take any liability, responsibility and jurisdiction over any unauthorised alteration & dissemination of the content or appearance of the Test Report is unlawful and violation may be prosecuted to the fullest extent of the law. All the samples are returned for 15 days from the Date of completion of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observation or Complaints regarding the Report shall be done within 15 days from the Date of Test Report release/issuance. After the time period stated before, no complaints will be accepted. The exact Time schedule mentioned in Test Report is to always follow. Submission with N/A (Not Applicable) BDN (Below Detection Limit) LSN (Lower Detection Limit)

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-03, MALLARIVAN ENCLAVE, TIPPLEDAMA  
KATA, RANCHI-834003 (JHARKHAND)  
GST NO- 20AARCE7130124

Email: [info@elsgpl.co.in](mailto:info@elsgpl.co.in), [elsgpl.ranchi@gmail.com](mailto:elsgpl.ranchi@gmail.com)  
Phone No.: 0655-2790103  
Website: [www.elsgpl.co.in](http://www.elsgpl.co.in)



## TEST REPORT

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

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

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	31	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	15	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	15.5	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by  
Anshu Kumar  
Quality Manager

====End of Report====

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

Page 1 of 1

The Document titled as Test Report, is issued by the Laboratory under General Terms and Conditions, only as Company letter head in pre-approved format. The results shown in the Test Report refer to results only to the information done by the Laboratory only. The information stated in 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 re-analysed 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, distributed, used for any legal action unless prior permission has been received from the Management of the Laboratory. Attention is drawn to the location of facility, composition and procedure issues. Any unauthorized alteration & distribution of the content or appearance of the Test Report is prohibited and if detected may be prosecuted to the fullest extent of the law. All the compliances required for validity from the Date of issuance of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Report shall be done within 15 days from the Date of Test Report received/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is a 24-hour format. Abbreviations used: M.A. (Over Application), S.O. (Below Detection Limit), L.D. (Lower Detection Limit).

"Save Environment, Save Future"



# ENVIRONMENTAL LABORATORIES &

ZUSTAD-20, BHANGAROWAH ENCLAVE, FARIDABAD  
METTA, KANON-SHARDA (GURGAOHA)  
27 NO- JHAJHOTI ROAD

ENGINEERING SERVICES PVT. LTD.

Email: [info@elapl.co.in](mailto:info@elapl.co.in), [elapl@elapl.co.in](mailto:elapl@elapl.co.in)  
Phone no.: 0551-2299203  
Website: [www.elapl.co.in](http://www.elapl.co.in)



## TEST REPORT

Test Report No.	: ELES/RNC/2024/S352	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003265F		

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

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	51	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 2/Sec1): 2023	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	16.3	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	$\mu\text{g}/\text{m}^3$	ELES/GC/SOP/06: 2023	<2.5	05 (Annual)
Benzo-(a)-Pyrene	$\text{ng}/\text{m}^3$	ELES/GC/SOP/05: 2023	<0.5	01 (Annual)

Reviewed by  
Kshit K. Mittal  
Quality Manager

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

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

Page 1 of 1

The document titled as Test Report, is issued by the Laboratory under General Terms and Conditions, only as Company letter head or pre-approved format. The results shown in the Test Report refer or relate only to the job analysis done by the Laboratory only. The information stated in the Test Report reflects the findings done by the Laboratory at the time of analysis only and is neither the basis of client's operations. The Laboratory is responsible for all the information or data provided in the report, except the information which is provided by the client. The Report cannot be reproduced, copied in full or any part of the report or not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertised, used for any legal action unless express permission has been received from the Management of the Laboratory. Attention is drawn to the liabilities of liability, compensation and jurisdiction issues. Any unauthorised alteration or duplication of document or appearance of the Test Report is prohibited and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days from the Date of release issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Quarantine or Complaints regarding the Report shall be done within 15 days from the Date of Test Report release/issuance. After this time period expired before, no complaints will be accepted. The entire Test schedule mentioned in Test Report is to follow as per: Maharashtra and CGA (for Applicability, BCL (Biosafety Directive Limit), L2H (Lower Detection Limit).





# ENVIRONMENTAL LABORATORIES &

PLT NO-01, MAHENDRA PURI ENCLAVE, TUPUWAHA  
HATIA, RANCHI-834008 (JHARKHAND)  
DIT NO- 33A82257120124

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.com](mailto:info@elespl.com), [elesranchi@gmail.com](mailto:elesranchi@gmail.com)  
Phone no: 0661-2190109  
Website: [www.elespl.com](http://www.elespl.com)



## TEST REPORT

Test Report No. : ELES/RNC/2024/S353	Report Release Date : 23.09.2024
Work Order No. : 13612312113	Work Order Date : 28.03.2024
ULR No. : TC135872400003266F	


CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindico industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6157
Address	: Lohardaga, Jharkhand-835302	Location	: Near Dipa Kujant Village
		Sampling Date	: 14.09.2024 to 15.09.2024
Miner Status	: Operational	Sample Received Date	: 16.09.2024
Period of Analysis	: 16.09.2024 to 23.09.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/03
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

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

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 23): 2022	48	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 2/Sec1): 2023	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 6): 2022	19.4	80 (24hrs)
Ozone (O <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	$\text{ng}/\text{m}^3$	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	$\text{ng}/\text{m}^3$	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	$\mu\text{g}/\text{m}^3$	ELES/GC/SOP/06: 2023	<2.5	05 (Annual)
Benzo-(a)-Pyrene	$\text{ng}/\text{m}^3$	ELES/GC/SOP/05: 2023	<0.5	01 (Annual)

  
Reviewed by  
Anshu Kumar  
Quality Manager

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

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

Page 1 of 1

The Discipline used in Test Report, is used by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer exclusively only to the calculations done by the Laboratory only. The information given on the Test Report reflects the findings done by the Laboratory at the time of measurement 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 client 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 as full or in part shall not be published, altered, used for any legal action unless prior permission has been received from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction clause. Any fraudulent alteration or falsification of the content or appearance of the Test Report is unlawful and offences may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days after the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of observations or Complaints regarding the Report shall be done within 15 days from the Date of Test Report released/issued after the time period stated before any complaints will be accepted. The entire Test Report mentioned in Test Report is in 2 Parts (Sample Observations and ULR (Not Applicable), RUL (Below Detection Limit), LUL (Above Detection Limit)).

**'Save Environment, Save Future'**



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999RJ2018PTC011125

## 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	: Minerals & Minerals Limited	Sampling Date	: 20.09.2024 to 21.09.2024
Address	: Lohardaga, Jharkhand-835302	Sampling Received Date	: 23.09.2024
		Type of Sample	: Ambient Noise
Mines Status	: Operational	Sampling procedure	: ELES/DOC/SMPL/03
		Sampling Done By	: ELES Pvt. Ltd.
		Period of Analysis	: 23.09.2024 to 30.09.2024

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

Discipline : Chemical		Group : Atmospheric Pollution		
Location	Unit	Test Protocol	Result	Regulatory Limit (Industrial Zone)
Near office Shelter Amtipani Chirodih (130.01ha) Bauxite Mine	dB(A)	IS 9989: 2020	Time	$L_{eq}$
			Day Time	60
Sample ID: ELES/RNC/2024/AN/6518			Night Time	44



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

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

Page 1 of 1

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

"Save Environment, Save Future"



CIN: U74999HR2018PTC011125

# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D1Z4**ENGINEERING SERVICES PVT. LTD.**Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)

TC-13887

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

### METEOROLOGICAL INFORMATION

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

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
			Time	L <sub>eq</sub>	
Near Mines Pit – Amtipani Chirodih Bauxite Mine (130.01 ha)	dB(A)	IS-4758: 2017			90 dB (A)
Sample ID: ELES/RNC/2024/WN/6520			Day Time	73	



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

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

Page 1 of 1

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

**Save Environment, Save Future**



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/SW/6504
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20.09.2024
		Sample Received Date	: 23.09.2024
		Type of Sample	: Surface Water
Mines Status	: Operational	Source of Sample	: Spring Water
		Location of Sample	: Sama Dari, Amtipani Chirodih Bauxite Mine (130.01 ha)
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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	6.58	6.5-8.5
Colour	Hazen	IS 3025 (Part-4) : 2021	4.0	300
Odour	-	IS 3025 (Part-5) : 2018	Unobjectionable	--
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 CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-23) : 2023	49.0	--
Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-21): 2019	64.1	--
Sulphate (as SO <sub>4</sub> )	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/L	IS 3025 (Part-60): 2019	0.116	1.5
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	1.56	50

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U72999JH2018PTC011125

## 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 : Water		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)	--
Phenols Compounds (as C <sub>6</sub> H <sub>5</sub> 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	--
Discipline : Chemical		Group : Residues in Water		
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	--
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)	--
Cadmium (as Cd)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.144	50
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	--
Mercury (as Hg)	mg/L	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 <sup>th</sup> Ed.2023; 3111B	0.111	15

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2016PTC011125

## 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 : Residues 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 <sup>th</sup> 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)	--
<b>Pesticides</b>				
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)	--
Chlorpyrifos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	--
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
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)	--
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	--

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



# ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: L74999JH2018PTC011125

## 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 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)	--
<b>Discipline: Biological</b>		<b>Group : Water</b>		
Total Coliform	CFU/100 mL	IS 15185: 2021	8.40×10 <sup>7</sup>	--
Escherichia coli	CFU/100 mL	IS 15185: 2021	BDL (DL: 1.0)	--

Remarks: pH & RFC done at Lab.



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

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

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



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0653-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)

CIN: U74999JH2018PTC011125

## 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	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/SW/6504
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20.09.2024
		Sample Received Date	: 23.09.2024
Mines Status	: Operational	Type of Sample	: Surface Water
		Source of Sample	: Spring Water
Period of Analysis	: 23.09.2024 to 30.09.2024	Location of Sample	: Sarma Dari, Amtipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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 <sup>th</sup> Ed.2023, 2160C	N/A	--
Anionic Surfactants (as MBAS)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Class 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

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





# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles\\_ranchi@gmail.com](mailto:eles_ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/SW/6502
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20.09.2024
		Sample Received Date	: 23.09.2024
		Type of Sample	: Surface Water
Mines Status	: Operational	Source of Sample	: Up Stream
		Location of Sample	: Dhardhari Nadi, Amtipani Chirodih Bauxite Mine (130.01 ha)
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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	6.73	6.5-8.5
Colour	Hazen	IS 3025 (Part -4) : 2021	12.0	300
Odour	-	IS 3025 (Part-5) : 2018	Unobjectionable	--
Turbidity	NTU	IS 3025 (Part-10): 2023	6.4	--
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	151	1500
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-23) : 2023	47.7	--
Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-21): 2019	70.0	--
Sulphate (as SO <sub>4</sub> )	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 <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	1.97	50



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 26AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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	

Discipline : Chemical		Group : Water		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)	--
Phenols Compounds (as C <sub>6</sub> H <sub>5</sub> 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	18.7	--
Discipline : Chemical		Group : Residues in Water		
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	--
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)	--
Cadmium (as Cd)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.144	50
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	--
Mercury (as Hg)	mg/L	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 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.1)	15

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 36days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be close within 15days from the Date of Test Report related/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LDI, (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

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

**ENGINEERING SERVICES PVT. LTD.**

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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	

Discipline : Chemical		Group : Residues 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 <sup>th</sup> 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)	--
<b>Pesticides</b>				
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)	--
Chlorpyrifos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	--
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
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)	--
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	--



### 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 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)	--
<b>Discipline: Biological</b>		<b>Group: Water</b>		
Total Coliform	CFU/100 mL	IS 15185: 2021	1.04×10 <sup>3</sup>	--
Escherichia coli	CFU/100 mL	IS 15185: 2021	94.0	--

Remarks: pH & RFC done at Lab.



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

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



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)

CIN: U74999JH2018PTC011125

## 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	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/SW/6502
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20.09.2024
		Sample Received Date	: 23.09.2024
		Type of Sample	: Surface Water
Mines Status	: Operational	Source of Sample	: Up Stream
Period of Analysis	: 23.09.2024 to 30.09.2024	Location of Sample	: Dhardhari Nadi, Antipani Chirodih Bauxite Mine (130.01 ha)
		Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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 <sup>th</sup> Ed.2023, 2160C	N/A	--
Anionic Surfactants (as MBAS)	mg/L	APHA 24 <sup>th</sup> 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\*\*\*\*

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

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



### 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	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/SW/6503
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20.09.2024
		Sample Received Date	: 23.09.2024
Mines Status	: Operational	Type of Sample	: Surface Water
		Source of Sample	: Down Stream
		Location of Sample	: Dhardhari Nadi, Amtipani Chirodih Bauxite Mine (130.01 ha)
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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	-	IS 3025 (Part-5) : 2018	Unobjectionable	--
Turbidity	NTU	IS 3025 (Part-10): 2023	4.8	--
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	118	1500
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-23) : 2023	41.2	--
Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-21): 2019	58.3	--
Sulphate (as SO <sub>4</sub> )	mg/L	IS 3025 (Part-24/Sec1): 2022	3.42	400
Chloride (as Cl)	mg/L	IS 3025 (Part-32): 2019	9.71	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	0.114	1.5
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	1.02	50



### 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 : Water		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)	--
Phenols Compounds (as C <sub>6</sub> H <sub>5</sub> 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	15.5	--
Discipline : Chemical		Group : Residues in Water		
Aluminum (as Al)	mg/L	IS 3025 (Part-55) : 2003;RA2019	BDL (DL: 0.02)	--
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)	--
Cadmium (as Cd)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.159	50
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	--
Mercury (as Hg)	mg/L	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 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.1)	15



## 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 : Residues 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 <sup>th</sup> 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)	--
<b>Pesticides</b>				
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)	--
Chlorpyrifos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	--
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	--
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)	--
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	--





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE97130174

ENGINEERING SERVICES PVT. LTD.

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



CIN: U74999JH2018PTC011125

## 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)	--
<b>Discipline: Biological</b>		<b>Group: Water</b>		
Total Coliform	CFU/100 mL	IS 15185: 2021	8.68×10 <sup>3</sup>	--
Escherichia coli	CFU/100 mL	IS 15185: 2021	77.0	--

Remarks: pH & RFC done at Lab.



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

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

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in 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 limitations of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable); BDL (Below Detection Limit); LDH (Lower Detection Limit).



# ENVIRONMENTAL LABORATORIES &

ENGINEERING SERVICES PVT. LTD.

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

Email: [info@elespl.co.in](mailto:info@elespl.co.in), [eles.ranchi@gmail.com](mailto:eles.ranchi@gmail.com)  
Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)

CIN: U74999JH2018PTC011125

## 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 DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/SW/6503
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20.09.2024
		Sample Received Date	: 23.09.2024
Mines Status	: Operational	Type of Sample	: Surface Water
		Source of Sample	: Down Stream
		Location of Sample	: Dhardhari Nadi, Amtipani Chirodih Bauxite Mine (130.01 ha)
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Procedure	: ELES/DOC/SMPL/01
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: 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 <sup>th</sup> Ed.2023, 2160C	N/A	--
Anionic Surfactants (as MBAS)	mg/L	APHA 24 <sup>th</sup> 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\*\*\*\*

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

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

# MINERALS & MINERALS LIMITED

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

Tel.-06526-223163

CIN NO. U26990JH1970PLC000875

---

Ref. :

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)

## Annexure 4

<b>Production, Mined Out, Back Filled and Over Burden removal from April'24 to September'24</b>								
<b>S No</b>	<b>Name of the Mines</b>	<b>Mining lease area (ha)</b>	<b>Production Capacity (MT)*</b>	<b>Lease Period*</b>	<b>Production (MT)</b>	<b>Mined out area (ha)</b>	<b>Back filled area (ha)</b>	<b>Over burden (Cu.M)</b>
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

## Annexure 4

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 Gangopadhyay**  
**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.

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

\*\*Part of OB removed cost.



Basudev Gangopadhyay  
AVP (Planning, Environment & Compliance)

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

Certificate No: AMT chirodih 13348

Certified that Mahendra Munda employed as Miner  
has been examined for a INITIAL medical examination. He appears to be chirodih mine  
The findings of the examining authority are given in the attached sheet. It is considered that Mahendra Munda 35 years of age. Form A No. 93

Is medically fit for any employment in mines.

Is suffering from

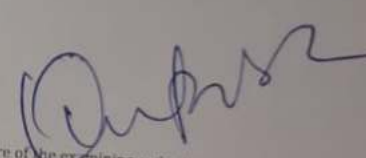
- \_\_\_\_\_ and is medically unfit for
- (i) Any employment in mines, or
  - (ii) Any employment below ground, or
  - (iii) Any employment or work

Is suffering from

\_\_\_\_\_ and should get this disability \*cured/controlled and should be again  
examined within a period of \_\_\_\_\_ months. He appear for re-examination with the result  
of test of \_\_\_\_\_ and the opinion of \_\_\_\_\_  
specialist from \_\_\_\_\_ He  
his duties during this period. \_\_\_\_\_ may be permitted/not permitted to carry on



Mahendra Munda

  
Signature of the examining authority  
Name and designation in Block Letter

**DR OMPRAKASH DUBEY**  
**Sr. CONSULTANT**  
Reg.No-33297/ BR2002

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

Place Rajendra Hospital, Lohardaga  
7/19/2024

\*Delete whatever not applicable.

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

**RAJENDRA HOSPITAL, LOHARDAGA**  
REPORT ON EYE TESTING

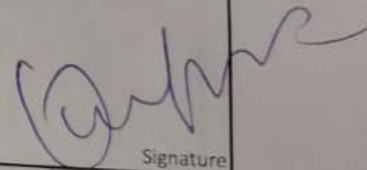
Name of Employee Mahendra Munda Age 35 Sex Male  
 Designation Miner Working Since 12/ 5/12/2009  
 Name of Employer/Industry Hindalco Industries Ltd.(Mines Div.), Lohardaga  
 Form-B No. N/A  
 Visual Acuity \_\_\_\_\_  
 Colour Vision NORMAL  
 Anterior Segment NORMAL

**PRESCRIPTION FOR GLASSES**

RIGHT EYE				LEFT EYE			
SPH	CYL	AXIS	VISION	SPH	CYL	AXIS	VISION

RIGHT EYE				LEFT EYE			
SPH	CYL	AXIS	VISION	SPH	CYL	AXIS	VISION

Advice/Remarks: DISTANCE AND NEAR READING OF VISION ARE NORMAL WITHOUT GLASSES

  
Signature

**Dr. Omprakash Dubey**  
Sr. Consultant  
Hindalco Mines Div., Lohardaga  
Reg. No -33297. BR-2002



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

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

Certificate No. AMT Chirodih 13348

Name Mahendra Munda

Identification Marks A mole mark on left leg

### 1. Cardiological Assessment

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

Clinically Normal

Enclosed ECG

### 2. Neurological Assessment

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

### 3. ILO Classification of Chest Radiograph

Perfusion of Pneumoconiotic opacities	Grades	Types
Absent	1	0/0

Enclosed Chest Radiograph

Centre for Environment & Occupational Health  
A Unit of Rajendra Hospital  
Lohrdaga

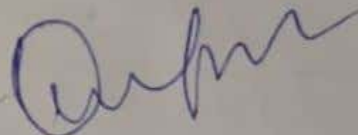
Certificate No. AMT Chirodih 13348 Date: 7/19/2024  
Name Mahendra Munda Age: 35 Sex: Male

CHEST X-RAY PA VIEW REPORT

Trachea: CENTRAL  
Cardiac Shadow: NORMAL  
Both Costophrenic & Cardiophrenic angles: NORMAL  
Both side Bronchovascular markings are: PROMINENT  
I.L.O. Classification of Opacities: 0/0

Impression:

**Normal Chest X-Ray**

  
Dr. OM PRAKASH DUBEY  
Sr. Consultant

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

**4. Audiometry Findings**

	Left Ear	Right Ear
Conduction Type		
Ear Conduction	WNL	WNL
Bone Conduction	WNL	WNL

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)**

Neurological Disturbances	Behavioral Disturbances	Present/Not Present
	Speech Defect	Present/Not Present
	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 Dubey*  
Sr. Consultant

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

## Report of Medical Examination under Mines Rule 29B

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

Certificate No. AMT Chirodih 13348

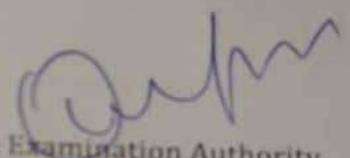
Name Mahendra Munda

Identification Marks A mole mark on left leg

### Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% Of Predicted
Forced Vital Capacity (FVC)	2.87	2.84	99
Forced Exhalation Volume in 1 <sup>st</sup> Second (FEV1)	2.42	2.84	117
FEV1/FVC	84.32	100	119
Peak Expiratory Flow	8.1	7.9	98

Enclosed Spirometry Report:

  
 Signature of the Examination Authority

**Dr. Omprakash Duboy**  
 Sr. Consultant  
 Hindalco Mines Divi., Lohardaga  
 Reg. No - 33297 BB-2002  
 Pg 5 of 5

**Date/Time** Long at 12:59:30 May 3, 2024  
**Trigger Source** Geo: 0.700 mm/s  
**Range** Geo: 254.0 mm/s  
**Record Time** 3.0 sec at 2048 sps  
**Operator/Setup:** Operator/BV.MMB

**Serial Number** UM17410 V 10-89 Micromate ISEE  
**Battery Level** 3.7 Volts  
**Unit Calibration** October 13, 2023 by UES New Delhi  
**File Name** \_\_TEMP.EVT

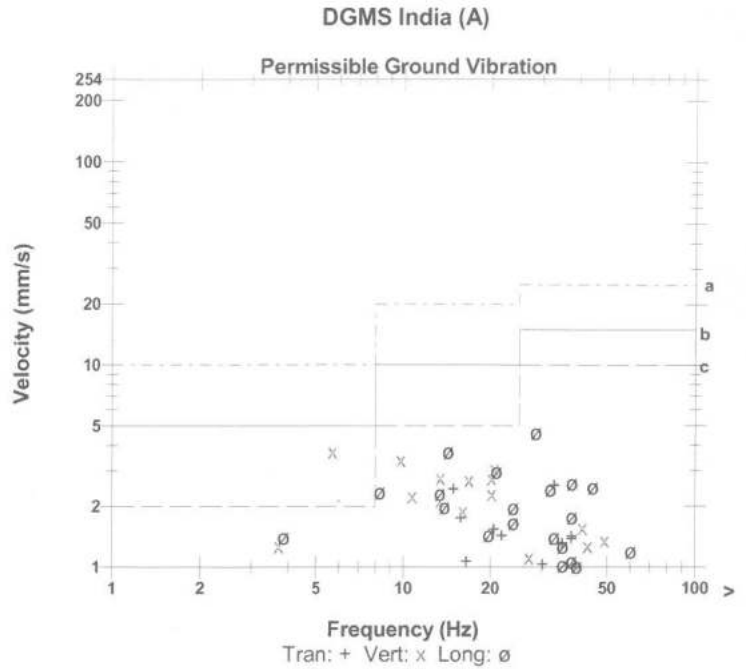
**Notes**

Location:  
 Client:  
 User Name:  
 General:

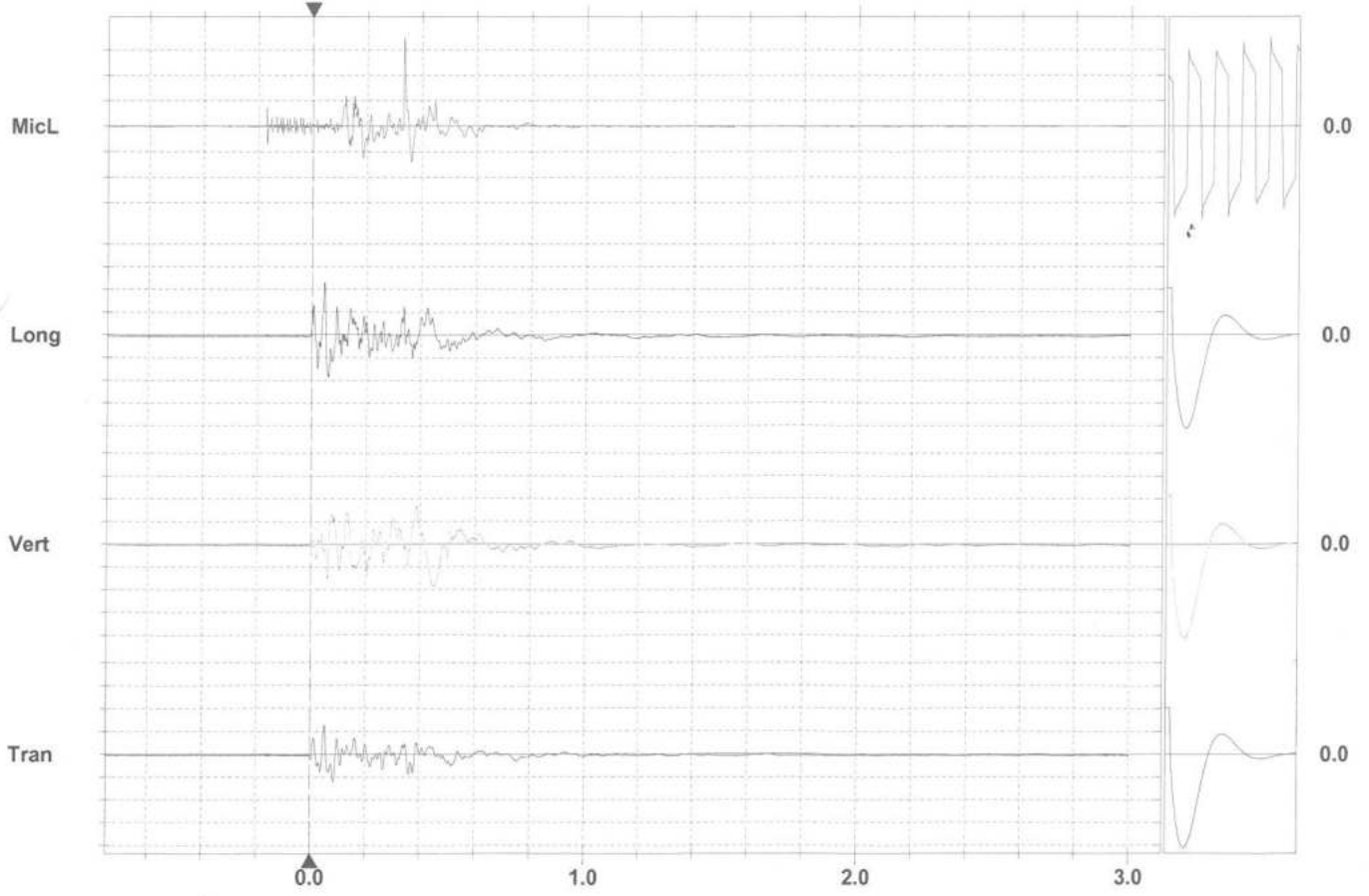
**Microphone** Linear Weighting  
**PSPL** 124.9 dB(L) at 0.333 sec  
**ZC Freq** 23 Hz  
**Channel Test** Passed (Freq = 19.7 Hz Amp = 1141 mv )

	Tran	Vert	Long	
PPV	2.538	3.728	4.642	mm/s
PPV (Ponderated)	2.269	4.078	3.653	mm/s
PPV	59.09	62.43	64.33	dB
ZC Freq	33	5.7	28	Hz
Time (Rel. to Trig)	0.053	0.452	0.045	sec
Peak Acceleration	0.061	0.094	0.122	g
Peak Displacement	0.038	0.080	0.044	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.6	4.6	4.8	

**Peak Vector Sum** 4.833 mm/s at 0.061 sec



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



**Time Scale:** 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div  
**Trigger =** ▶ ◀

Sensor Check

**MINERALS & MINERALS LIMITED**

Regd. Office- Court Road, P.O. &amp; Distt.-Lohardaga, Jharkhand-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 हे0) 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।

*रजिस्ट्रार* पाया

*15.2.022*

प्रधान कार्यकारी अधिकारी  
ग्राम पंचायत अमतीपानी  
प्रखण्ड-विशुनपुर, जिला-गुमना  
(झारखण्ड)।

*खान प्रबंधक*

खान प्रबंधक

(अमतीपानी बॉक्साईट माइंस)

# MINERALS & MINERALS LIMITED

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Jharkhand-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 हे०) 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।

2021 16/09/21 पाया

*Dim*

यंकारी अध्यक्ष  
11म प०- चिरोडीह

खान प्रबंधक

(अमतीपानी बॉक्साईट माइंस)

