

# 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&CC/405

Date: 24<sup>th</sup> November 2025

To,

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

**Sub:** Six Monthly EC Compliance Report for Pakhar (109.507 Ha) Bauxite Mining project of M/s Minerals & Minerals Limited, Lohardaga Jharkhand for the period from April 2025 to September 2025.

**Ref:** Environmental Clearance Letter No. J-11015/518/2008-IA II (M) dated 21<sup>st</sup> October 2010.

Dear Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (109.507 Ha)** Bauxite Mining project of **M/s Minerals & Minerals Limited**, Lohardaga Jharkhand for the period from **April 2025 to September 2025** for your kind perusal please.

The lease details are below:

Lease area (ha)	Production Capacity (MT)	Lease Period
109.507	280000	26.07.2008 to 25.07.2058

Hope you will find the same in order.

Thanking You

Yours faithfully,  
For **Minerals & Minerals 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), [mscb.cpcb@nic.in](mailto:mscb.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** : **Pakhar Bauxite Mine (109.507 ha)**  
**M/s Minerals & Minerals Limited**

**Environment Clearance No. & date** : **J-11015/518/2008-IA.II(M), dated 21.10.2010**

**Period of compliance Report** : **From 1<sup>st</sup> April 20245 to 30<sup>th</sup> September 2025**

### **Specific Conditions**

**Condition i: - The project proponent shall obtain Consent to Establish and Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.**

**Reply:** - Implementations of stipulated conditions in NOC are fulfilled post which consent to operate has been granted by SPCB from time to time. The existing consent to operate is valid up to 31.03.2026. Productions of bauxite are within limits specified in consent to operate.

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

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

**Condition iii: - The mining operation shall be confined to the hill tops only and restricted to above ground water table and it should not intersect the ground water table. In case of working below ground water table, prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained, for which a detailed hydro – geological study shall be carried out.**

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

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

As the water table is not intersected during mining operations, a detailed hydro-geological study is not applicable for this mine.

**Condition iv: - The project proponent shall ensure that no natural watercourse and/or water resources are obstructed due to any mining operations. Adequate measures shall be taken for protection of seasonal channels, if any emanating from the mine lease, during the course of mining operation.**

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

**Condition v:** - The topsoil shall temporarily be stored at earmarked site (s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.

**Reply:** - Topsoil is being stacked temporally properly with proper slope as and when required. Sequential backfilling and reclamation of mined out area are being exercised for which topsoil is being spread on backfilled area for reclamation. The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision.

**Condition vi:** - The over burden (OB) generated shall be temporarily stacked in the earmarked area for a period of one year and thereafter concurrently backfilled. There shall be no external overburden dump. The backfilled area shall be progressively afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneshwar on six monthly basis.

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

**Condition vii:** - The void left unfilled in an area of 0.41 ha shall be converted into water body. The higher benches of excavated void/ mining pits shall be terraced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.

**Reply:** - Implementation of conditions is in progress. Mining is being carried out in a scientific manner. Rainwater harvesting ponds have been constructed on more than 0.41 hectares of area, and proper fencing has been provided. Necessary measures have been implemented for easy accessibility by local people to use this harvested water.



Rainwater Harvesting Pond

**Condition viii: -** Catch drains and siltation ponds of appropriate size should be constructed around the mine working, soil and mineral dumps to prevent run off of water and flow of sediments directly into the agricultural fields, the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon and maintained properly. Garland drain, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit, topsoil, dumps and the mineral dumps to prevent runoff water and flow sediments directly into the agricultural fields, the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

**Reply:** - To collect & manage rainwater during monsoon, part of mined out area is used as settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary. Catch drains, Garland drains of appropriate size are being constructed in both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if applicable. Sump of adequate capacity is being provided and maintained as required. The photographs of the same are attached below.



Garland drains

**Condition ix: -** Dimension of the retaining wall at the toe of the OB benches within the mine to check run-off and siltation should be based on the rainfall data.

**Reply:** - There is no temporary dump within the mining lease area. However, dimensions of the retaining wall of temporary OB dumps will be maintained based on average rain fall, if required.

**Condition x: -** Plantation shall be raised in an area of 6.3 ha including a 7.5 m. wide statutory barrier all around the mining lease, reclaimed and rehabilitated areas, around water body, etc. by planting the native species in consultation with the local DFO / Agriculture Department. The density of the trees should be around 2000 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.

**Reply:** - Progressive plantation of native species is being carried out in consultation with the local forest department within the safety zone and mining lease. During FY 2025–26 till September, a total of 4,570 saplings have been planted within the mining lease area. Cumulatively, plantation has been carried out over 18.96 ha till date. In addition to these agricultural activities are going on reclaimed land as per consent from landowners.



Plantation at Mines

**Condition xi:** - Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

**Reply:** - Regular water sprinkling is being carried out on haul road and in critical areas prone to air pollution. Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory and all parameters are found within the prescribed limit. Monitoring report of AAQ is attached herewith as **Annexure-2**. Photographs of Water Tanker is attached below.



Water Tanker

**Condition xii:** - 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.

**Reply:** - Spring water is being monitored regularly, and Analysis report is attached as **Annexure 2**.

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

**Reply:** - Effective measures have already been implemented. A detailed rainwater harvesting plan to augment ground water has been prepared and suitable measures like water harvesting pond etc. are created for augmentation of ground water in the area in consultation with the Central Ground Water Board. The photograph of Rainwater Harvesting Pond is already attached above.

**Condition xiv: - Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) once in each season)] shall be carried out in consultation with the State Ground Water Board/ Central Ground water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional office Bhubaneshwar, The Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.**

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



**Condition xv: - Appropriate mitigative measures shall be taken to prevent pollution of the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi in consultation with the State Pollution Control Board.**

**Reply:** - We are not discharging any water outside mine lease area. Appropriate mitigative measures have been taken to prevent pollution of nearby water bodies. The drainage system in the mining lease area is designed to collect all rainwater within the lease into the pit/ rainwater harvesting pond only and ensure that water does not flow outside the boundaries of the mine lease under any circumstances.

**Condition xvi: - The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water (from natural spring) required for the project.**

**Reply:** - We are not using any water from natural streams/ ground water for mining operation. Rainwater harvesting ponds with proper fencing have been already constructed in the mine premises. Rainwater harvested during the rainy season is being used for sprinkling on haul roads and raising plantation.

However, we have already obtained NOC for extraction of ground water from CGWA/ CGWB for drinking purpose only. The copy of the same NOC and photograph of rainwater harvesting pond are attached below.

 भारत सरकार राष्ट्रीय स्तर पर जल संसाधन और जल संरक्षण विभाग केंद्रीय जल संसाधन विभाग Government of India Ministry of Jal Shakti Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority																																					
(प्रत्यक्ष निकासी हेतु अनापसि प्रमाण पत्र) <b>NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION</b>																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Project Name:</td> <td colspan="3">Pakhar Bauxite Mining Project (109.507 Ha)</td> </tr> <tr> <td>Project Address:</td> <td colspan="3">Pakhar Bauxite Mining Project, Vill - Pakhar, Tehsil - Kisko</td> </tr> <tr> <td>Village:</td> <td colspan="3">Pakhar</td> </tr> <tr> <td>District:</td> <td colspan="3">Lohardaga</td> </tr> <tr> <td>Block:</td> <td colspan="3">Kisko</td> </tr> <tr> <td>Pin Code:</td> <td colspan="3"></td> </tr> <tr> <td>State:</td> <td colspan="3">Jharkhand</td> </tr> <tr> <td>Communication Address:</td> <td colspan="3">Minerals Minerals Ltd, Court Road Lohardaga, Lohardaga, Lohardaga, Jharkhand - 853001</td> </tr> <tr> <td>Address of CGWB Regional Office</td> <td colspan="3">Central Ground Water Board Mid Eastern Region, 6th &amp; 7th Floor, Lok Nayak Jai Prakash Bhawan, Frazer Road Dak Banglow, Patna, Bihar - 800011</td> </tr> </table>		Project Name:	Pakhar Bauxite Mining Project (109.507 Ha)			Project Address:	Pakhar Bauxite Mining Project, Vill - Pakhar, Tehsil - Kisko			Village:	Pakhar			District:	Lohardaga			Block:	Kisko			Pin Code:				State:	Jharkhand			Communication Address:	Minerals Minerals Ltd, Court Road Lohardaga, Lohardaga, Lohardaga, Jharkhand - 853001			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		
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1. NOC No.:	CGWA/NOC/MIN/REN/2/2024/9798	2. Date of Issue:	01/08/2024																																		
3. Application No.:	21-4/492/JH/MIN/2019	4. Category:	Safe (GWRE 2023)																																		
5. Project Status:	Existing Ground Water	6. NOC Type:	Renewal																																		
7. Valid from:	11/09/2024	8. Valid up to:	10/09/2026																																		
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																																		
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	DW	DCB	BW	TW	MP	MPu																										
0	0	1	0	0	0	0	0	0	0	0	0																										
Abstraction Structure*: 0 0 0 0 0 0 0 0 0 0 0 0																																					
*DW- Dug Well, DCB-Dug-and-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																																					

NOC for Ground water



Rainwater Harvesting Pond

**Condition xvii: - Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.**

**Reply:** - Suitable rainwater harvesting measures like harvesting pond have been constructed on long term basis for augmentation of ground water in the area, in consultation with Central Ground Water Board. The photograph of Rainwater Harvesting Pond is attached above.

**Condition xviii: - Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral within the mine lease up to the stock yard. The mineral transportation within the mine lease shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.**

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



Tarpaulins Covered vehicle

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

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

**Condition xx: - Drills shall either be operated with dust extractors or equipped with water injection system.**

**Reply:** - Wet drilling is in practice.



Wet drilling

**Condition xxi: - Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.**

**Reply:** - Water sprinkling is being carried out regularly at mineral handling area, loading and unloading areas to control the dust.

**Condition xxii: - Sewage treatment plant should be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operations.**

**Reply:** - As of now there is no colony within the lease hold. However, Domestic Wastewater generated from mine office area is being collected through individual Septic Tank and followed by Soak Pit.

No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop and Oil & grease trap system is already installed for Pakhar group of mines to treat this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop. We are not discharging any wastewater outside the mine lease area.

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

**Condition xxiii: - The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 Km. from proposed mine.**

**Reply:** - As a part of Community Health status check we regularly conduct medical camp in nearby areas.

**Condition xxiv: - Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.**

**Reply:** -As a company, we are truly concerned about the health and safety of our on-site workers and in consideration to that, the health examination camps are being setup/scheduled on regularly basis.

**Condition xxv: - The land Outsees and land losers/ affected people shall be compensated/ rehabilitation as per the National Policy of Resettlement and Rehabilitation of project Affected Families (NPRR)**

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

**Condition xxvi: - Door to door sample survey should be undertaken within the impact zone to assess the family-based need of the tribals and it should be appropriately addressed in the CSR activities to be undertaken in the area. An action plan in this regard should be prepared and submitted.**

**Reply:** - As a company, we are deeply committed to enhancing the quality of life for people living in the impact zone area. Therefore, the company's CSR team conducts regular assessments of the family-based needs of the tribals and ensures that their problems are properly addressed.

**Condition xxvii:** - **Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of the temporary structures to be removed after the completion of the project.**

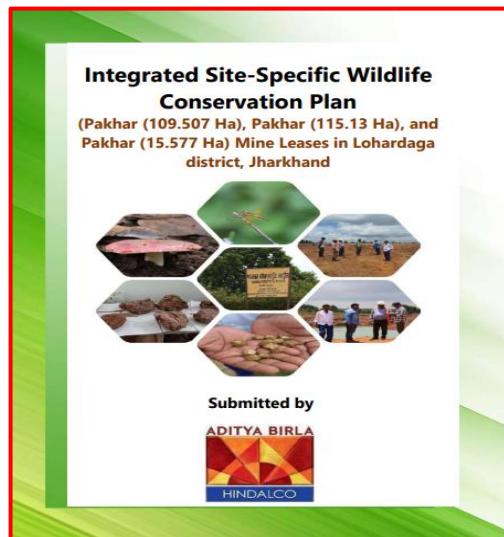
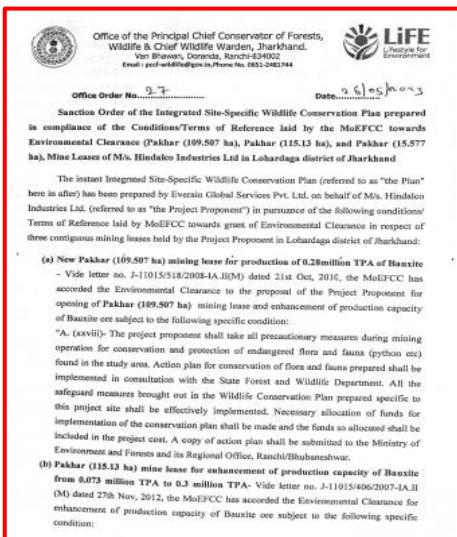
**Reply:** - We believe that the wellbeing of all the labours working within the site should be taken care of on a priority basis, so that they can work in a stress-free environment. Therefore, all the necessary infrastructure and basic facilities are being taken care of. Safe drinking water and medical facilities are already provided.

**Condition xxviii:** - **The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna (python etc.) found in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measured brought out in the Wildlife conservation plan prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.**

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

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

We have also prepared Integrated Site-specific Wildlife Conservation in consultation with State Forest Department and obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No.27 dated 26.05.2023 for conservation and protection of flora and fauna in the core and buffer zone for Pakhar Group of Mines.



### Integrated Site-specific Wildlife Conservation for Pakhar Group of Mines

**Condition xxix: - The critical parameters such as RSPM (Particulate matter with size less than 10  $\mu\text{m}$  (i.e. PM<sub>10</sub>) and NO<sub>x</sub> in the ambient air within the impact zone, peak particle velocity at 300 m. distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharge water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)], The monitored data shall be uploaded on the website of the Company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in Public domain. The Circular no. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry [www.envfor.nic.in](http://www.envfor.nic.in) shall also be referred in this regard for its compliance.**

**Reply:** - Noted and being adhered. We have established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring of Ambient Air Quality and Treated Water is being carried out by NABL accredited Laboratory and reported to the concerned authorities. The Monitoring Report is attached herewith as **Annexure 2**. Half-yearly EC compliance along with Environmental monitoring reports is being uploaded on company website regularly.

A Display board is already installed near the mine gate office. We have also installed an online PM10 analyzer at mine site.

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

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

**General Conditions:-**

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

**Reply:** - Noted.

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

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

**Condition iii: - At least four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10  $\mu\text{m}$  (i.e. PM<sub>10</sub>) & NO<sub>x</sub> monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.**

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

**Condition iv: - Data on ambient air quality RSPM [(Particulate matter with size less than 10  $\mu\text{m}$  i.e. PM<sub>10</sub>) & NO<sub>x</sub>] should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.**

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

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

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

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

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

**Condition vii: - Industrial wastewater (workshops and wastewater from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422**

**(E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.**

**Reply:** - No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop and Oil & grease trap system is already installed for Pakhar group of mines to treat this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop. We are not discharging any wastewater outside the mine lease area.

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

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

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

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

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

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

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

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

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

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

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

**Condition xiii: - The project proponent shall submit six monthly report on the status of the compliance of the stipulated environmental Clearance conditions including results of monitoring data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Officer, Bhubaneshwar, the respective Zonal office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneshwar, the respective Zonal Office of Central Pollution Control Board and State Pollution Control Board.**

**Reply:** - Six monthly reports on status of compliance of the stipulated environmental clearance conditions including monitoring report are being submitted to the MoEFCC, Zonal office of CPCB & JSPCB, Ranchi and also uploaded on the website of the Hindalco's website. Now, the Regional Office of MoEF&CC is in Ranchi.

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

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

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

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

**Condition xvi: - The environmental statement for each financial year ending 31<sup>st</sup> March in Form – V as is mandated to be submitted by the project proponent to the concerned State pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of the compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneshwar by e-mail.**

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

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

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

**Piezometer Monitoring Report**

**Mine: Pakhar Bauxite Mine (109.507 Ha)**

S No	Month	Ground Water Level (BGL) in meter
1	Apr-25	38.95
2	May-25	39.13
3	Jun-25	39.04
4	Jul-25	38.97
5	Aug-25	38.85
6	Sep-25	38.51



# EPIC LabTech Private Limited

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CIN-U74999JH2022PTC019685  
PAN-AAHCE3611M  
GST-20AAHCE3611M12X

Accredited by -  
NABL with certificate number TC-1/1867  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



TC-12887  
Annexure - 2

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000351	Discipline	Chemical		
Report Unique ID	RL0151251619	Group	Atmospheric Pollution		
Issue date/time	21.04.2025/ 15:10	Sub Group	Ambient Air Quality		
<b>Report Issue to</b>					
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE: PAKHAR 109.507 BAUXITE MINE</b>	Contact Person	Mr. Ankit Das			
	Contact Number	+91 9971034775			
	Email Id	ankit.das@adityabirla.com			
	Order Date	05.04.2025/ 10:10			
	Order Number	RP/MJB/MM/25/0114/00			
<b>References of Quality Management System (Steps of Traceability Chain)</b>					
Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251619		
Sample(s) Code	251619 (A) (B) (C) (D)	Sample Receipt (D/T)	15.04.2025/ 10:34		
<b>Sampling References</b>					
Type of Industry	Bauxite mine	Ref. of Sampling Plan	EPIC/LAB/R/036		
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)				
Sampling Start (D/T)	13.04.2025/ 11:56	Sampling End (D/T)	14.04.2025/ 07:29		
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team		
Description/condition of sample	Receipt sample(s) were fit for analysis.				
<b>Environmental Condition during sampling</b>					
Weather condition	Clear	Temperature (°C)	29		
		Humidity %	60		
		Wind direction	40°-220°		
<b>Sampling Location(s) with GPS coordinate(s)</b>					
S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61"/84° 36' 43.95"		
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75"/84° 37' 14.90"		
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52"/84° 37' 28.25"		
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25"/84° 37' 16.05"		
<b>Date(s) of performance of the laboratory activities</b>					
Test start date	15.04.2025/ 12:10	Test completion date	19.04.2025/ 16:30		
<b>--Test Result--</b>					
<b>Sl</b>	<b>Test Parameters</b>	<b>Method used</b>	<b>Unit</b>	<b>Results</b>	<b>Limits</b>
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	A 84.03 B 82.00 C 79.98 D 87.02	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m <sup>3</sup>	A 39.04 B 37.87 C 37.07 D 43.05	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	A 07.94 B 07.92 C 08.92 D 07.91	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	A 28.77 B 29.86 C 29.76 D 27.25	60(24 hr)
5.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	A 31.68 B 32.65 C 31.04 D 33.62	180(1 hr)
6.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	A 49.28 B 51.18 C 49.91 D 53.07	400(24 hr)
7.	Lead (Pb)	IS:5182 (P-22) 2019	µg/m <sup>3</sup>	A BDL (MDL-0.1) B BDL (MDL-0.1) C BDL (MDL-0.1) D BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182 (P-26) 2020	ng/m <sup>3</sup>	A BDL (MDL-0.1) B BDL (MDL-0.1) C BDL (MDL-0.1) D BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	A BDL (MDL-0.001) B BDL (MDL-0.001) C BDL (MDL-0.001) D BDL (MDL-0.001)	-
<b>--Test result End --</b>					

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.  
Operational Status Unit was Operational During sampling.

Analysed by -A. K. SINHA

Checked by  
(B.N. Kumar)  
Technical Head

Verified & issued by  
(Umesh Das)  
Laboratory Head

Authorized Signatory

EPIC LabTech Private Limited Page 1 of 1

Contracted Notes: 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used to prove in the court of law. | 4. Any complaint about this report should be communicated in writing within 15 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to invoices amount only. | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report. | 8. When the results are from external provider are marked as \* mark. |

Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



# EPIC LabTech Private Limited

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epiclabtech@gmail.com

CIN: U74999JH2022PTC019685  
PAN: AAHCE3611M  
GST: 20AAHCE3611M128

Accredited by:  
Jharkhand State Pollution Control Board  
Certified by:  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical					
Report Unique ID	RL0151251619	Group	Atmospheric Pollution					
Issue date/time	21.04.2025/ 15:10	Sub Group	Ambient Air Quality					
<b>Report Issue to</b>								
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE: PAKHAR 109.507 BAUXITE MINE</b>	Contact Person	Mr. Ankit Das						
	Contact Number	+91 9971034775						
	Email Id	ankit.das@adityabirla.com						
	Order Date	05.04.2025/ 10:10						
	Order Number	RP/MJB/MM/25/0114/00						
<b>References of Quality Management System (Steps of Traceability Chain)</b>								
Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251619					
Sample(s) Code	251619 (A) (B) (C) (D)	Sample Receipt (D/T)	15.04.2025/ 10:34					
<b>Sampling References</b>								
Type of Industry	Bauxite mine	Ref. of Sampling Plan	EPIC/LAB/R/036					
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)							
Sampling Start (D/T)	13.04.2025/ 11:56	Sampling End (D/T)	14.04.2025/ 07:29					
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team					
Description/condition of sample	Receipt sample(s) were fit for analysis.							
<b>Environmental Condition during sampling</b>								
Weather condition	Clear	Temperature (°C)	29					
		Humidity %	60					
		Wind direction	40°-220°					
<b>Sampling Location(s) with GPS coordinate(s)</b>								
S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"					
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"					
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"					
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"					
<b>Date(s) of performance of the laboratory activities</b>								
Test start date	15.04.2025/ 12:10	Test completion date	19.04.2025/ 16:30					
<b>--Test Result --</b>								
Sl	Test Parameters	Method used	Unit	A	B	C	D	Limits
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)
<b>--Test Result End --</b>								

Prescribed Limit  
Environmental (Protection) Rules-1986, Schedule VII.  
Operational Status  
Unit was Operational During sampling.

Analysed by -A. K. SINHA



Checked by  
(A. K. Sinha)  
Technical Head

Verified & Issue by  
(Umesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000352	Discipline	Chemical
Report Unique ID	RL0151251620	Group	Water
Issue date/time	21.04.2025/ 15:13	Sub Group	Drinking Water

## Report Issue to

<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE: PAKHAR 109.507 BAUXITE MINE</b>	Contact Person	Mr. Ankit Das
	Contact Number	+91 9971034775
	Email Id	ankit.das@adityabirla.com
	Order Date	05.04.2025/ 10:10
	Order Number	RP/MJB/MM/25/0114/00

## References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251620
Sample(s) Code	251620	Sample Receipt (D/T)	15.04.2025/ 10:43

## Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	13.04.2025/ 15:15	Sampling End (D/T)	13.04.2025/ 15:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

## Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	60	Wind direction	40°-220°
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## Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mines Office	GPS coordinate	23° 32' 24.21" / 84° 36' 38.22"
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## Date(s) of performance of the laboratory activities

Test start date	15.04.2025/ 11:05	Test completion date	21.04.2025/ 11:00
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## --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Acceptable Limit	Limits Permissible limit
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	6.62	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.54	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	<5	5	15
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	220.00	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	40.40	250	1000
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	90.00	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	120.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	43.29	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1)2022	mg/l	9.60	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	2.36	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000352	Discipline	Chemical
Report Unique ID	RL0151251620	Group	Water
Issue date/time	21.04.2025 / 15:13	Sub Group	Drinking Water

### Report Issue to

**M/s - MINERALS & MINERALS LIMITED**

VILLAGE-COURT ROAD,  
POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,  
STATE-JHARKHAND, INDIA 835302

**MONITORING SITE: PAKHAR 109.507 BAUXITE MINE**

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025 / 10:10  
Order Number  
RP/MJB/MM/25/0114/00

15. Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	2.91	30	100
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### Residues and Contaminants in Water- Trace Metals Elements

16. Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation
18. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)	0.01	No relaxation
19. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)	0.003	No relaxation
20. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	0.05	No relaxation
21. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)	0.02	No relaxation
22. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	0.05
23. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	No relaxation
24. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.09)	0.1	0.3
25. Zinc (as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)	5	15

### --Test Result End --

Prescribed Limit IS 10500:2021

Operational Status Unit was Operational During sampling.

Analysed by -Pratima Kumar/ Anjali Kumar



  
Checked by  
(E.N. Kumar)  
Technical Head

  
Verified & Issue by  
(Umesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



# EPIC LabTech Private Limited

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CIN: U74999JH2022PTC019685  
PAN: AAHCE3611M  
GST: 20AAHCE3611M12X

Accredited by:-  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0151251620	Group	Water
Issue date/time	21.04.2025/ 15:13	Sub Group	Drinking Water

### Report Issue to

M/s - MINERALS & MINERALS LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE: PAKHAR 109.507 BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 05.04.2025/ 10:10 RP/MJB/MM/25/0114/00
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### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251620
Sample(s) Code	251620	Sample Receipt (D/T)	15.04.2025/ 10:43

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	13.04.2025/ 15:15	Sampling End (D/T)	13.04.2025/ 15:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	60	Wind direction	40°-220°
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Sampling Location(s) with GPS coordinate(s)		GPS coordinate	23° 32' 24.21" / 84° 36' 38.22"
S. Location A	Near Mines Office		

### Date(s) of performance of the laboratory activities

Test start date	15.04.2025/ 11:05	Test completion date	21.04.2025/ 11:00
-----------------	-------------------	----------------------	-------------------

### ..Test Result..

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL (MDL-0.1)	1.0	1.5

Group-Residues and Contaminants in Water				Sub Group-Trace Metals Elements		
2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL (MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL (MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.05)	0.1	No relaxation

Group-Residues and Contaminants in Water				Sub Group-Pesticides		
6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	125.0	No relaxation
12.	Chloryrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	30.0	No relaxation

Contractual Notes | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to invoice amount only | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report | 8. When the results are from external provider are marked as \* mark | 9. Abbreviation: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). | Page 1 of 2



# EPIC LabTech Private Limited

Address:  
C/o - R.K. Tripathi, Indrapuri,  
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93049 73994  
epiclabtech@gmail.com

CIN: -UT4999JH2022PTC019685  
PAN - AAHCE3611M  
GST - 20AAHCE3611M128

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0151251620	Group	Water
Issue date/time	21.04.2025/ 15:13	Sub Group	Drinking Water

### Report Issue to

M/s - MINERALS & MINERALS LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE: PAKHAR 109.507 BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 05.04.2025/ 10:10 RP/MJB/MM/25/0114/00
--	--	---

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251620
Sample(s) Code	251620	Sample Receipt (D/T)	15.04.2025/ 10:43

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	13.04.2025/ 15:15	Sampling End (D/T)	13.04.2025/ 15:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	60	Wind direction	40°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mines Office	GPS coordinate	23° 32' 24.21" / 84° 36' 38.22"
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### Date(s) of performance of the laboratory activities

Test start date	15.04.2025/ 11:05	Test completion date	21.04.2025/ 11:00
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### --Test Result--

SI	Test Parameters	Method used	Unit	Results	Acceptable Limit	Limits Permissible limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL (MDL-0.1)	1.0	1.5

### Group-Residues and Contaminants in Water

### Sub Group-Trace Metals Elements

2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL (MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL (MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.05)	0.1	No relaxation

### Group-Residues and Contaminants in Water

### Sub Group-Pesticides

6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	125.0	No relaxation
12.	Chlopyriphos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	30.0	No relaxation



## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0151251620	Group	Water
Issue date/time	21.04.2025/ 15:13	Sub Group	Drinking Water

### Report Issue to

#### M/s - MINERALS & MINERALS LIMITED

VILLAGE-COURT ROAD,  
POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,  
STATE-JHARKHAND, INDIA 835302

#### MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

13. Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.02)	0.04	No relaxation
14. Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	3.0	No relaxation
15. Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
16. Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	190.0	No relaxation
17. Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.2)	0.3	No relaxation
18. Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	1.0	No relaxation
19. Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
20. DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.5)	1.0	No relaxation
21. Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL (MDL-0.05)	0.4	No relaxation

-Test Result End--

Prescribed Limit

Operational Status

Analysed by -Pratima Kumar/ Anjali Kumar



IS 10500:2021

Unit was Operational During sampling.

Checked by  
(B.N. Kumar)  
Technical Head

Verified & Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.,  
Ranchi, Jharkhand





# EPIC LabTech Private Limited

Address:  
C/o - R.C. Tripathi, Indrapuri,  
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Jharkhand - 834005, India

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93049 73994  
epiclabtech@gmail.com

CIN - UT4999IH2022PTC019685  
PAN - AAHCE3611M  
GST - 20AAHCE3611M12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL0151251621	Group	Water
Issue date/time	21.04.2025/ 15:15	Sub Group	Drinking Water
<b>Report Issue to</b>			
<b>M/S - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE: PAKHAR 109.507 BAUXITE MINE</b>	Contact Person Mr. Ankit Das	Contact Number +91 9971034775	Email Id ankit.das@adityabirla.com
	Order Date 05.04.2025/ 10:10	Order Number RP/MJB/MM/25/0114/00	
<b>References of Quality Management System (Steps of Traceability Chain)</b>			
Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251621
Sample(s) Code	251621	Sample Receipt (D/T)	15.04.2025/ 10:52
<b>Sampling References</b>			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003 & IS 1622 1981		
Sampling Start (D/T)	13.04.2025/ 15:15	Sampling End (D/T)	13.04.2025/ 15:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		
<b>Environmental Condition during sampling</b>			
Weather condition	Clear	Temperature (°C)	29
		Humidity %	60
		Wind direction	40°-220°
<b>Sampling Location(s) with GPS coordinate(s)</b>			
S. Location A	Near Mines Office	GPS coordinate	23° 32' 24.21" / 84° 36' 38.22"
<b>Date(s) of performance of the laboratory activities</b>			
Test start date	15.04.2025/ 11:05	Test completion date	21.04.2025/ 11:00
<b>--Test Result --</b>			
Sl	Test Parameters	Method used	Unit
1.	Total Coliform	IS 15185 2002	Per 100 ml
2.	E. Coli	IS 15185 2002	Per 100 ml
<b>--Test result End --</b>			

**Prescribed Limit** IS 10500:2021

**Operational Status** Unit was Operational During sampling.

Analysed by - Pratima Kumar/ Aditya Kumar



  
Checked by  
(B.N. Kumar)  
Technical Head

  
Verified & issued by  
(Umesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000353	Discipline	Chemical
Report Unique ID	RL0151251622	Group	Water
Issue date/time	21.04.2025/ 15:17	Sub Group	Ground Water

## Report Issue to

**M/s - MINERALS & MINERALS LIMITED**  
 VILLAGE-COURT ROAD,  
 POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,  
 STATE-JHARKHAND, INDIA 835302  
**MONITORING SITE: PAKHAR 109.507 BAUXITE MINE**

Contact Person  
 Mr. Ankit Das  
 Contact Number  
 +91 9971034775  
 Email Id  
 ankit.das@adityabirla.com  
 Order Date  
 05.04.2025/ 10:10  
 Order Number  
 RP/MJB/MM/25/0114/00

## References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251622
Sample(s) Code	251622	Sample Receipt (D/T)	15.04.2025/ 10:53

## Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	13.04.2025/ 14:50	Sampling End (D/T)	13.04.2025/ 15:10
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Description/condition of sample		Receipt sample(s) were fit for analysis.	

## Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	60	Wind direction	40°-220°
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Sampling Location(s) with GPS coordinate(s)	
S. Location A	Near Bunglapart Village

GPS coordinate 23° 32' 41.46"/84° 36' 03.13"

## Date(s) of performance of the laboratory activities

Test start date	15.04.2025/ 11:10	Test completion date	21.04.2025/ 11:00
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## --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Acceptable Limit	Limits Permissible limit
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	6.79	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.60	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	<5	5	15
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	268.00	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	45.33	250	1000
8.	Total Alkalinity(as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	102.00	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	134.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	48.10	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1)2022	mg/l	14.00	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	3.21	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002

Contractual Notes | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested in prescribed date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to involved amount only. | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report. | 8. When the results are from external provider are marked as \* mark.

Abbreviations - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000353	Discipline	Chemical
Report Unique ID	RL0151251622	Group	Water
Issue date/time	21.04.2025 / 15:17	Sub Group	Ground Water

### Report Issue to

**M/s - MINERALS & MINERALS LIMITED**  
VILLAGE-COURT ROAD,  
POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,  
STATE-JHARKHAND, INDIA 835302  
**MONITORING SITE: PAKHAR 109.507 BAUXITE MINE**

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025 / 10:10  
Order Number  
RP/MJB/MM/25/0114/00

15. Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	3.40	30	100
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### Residues and Contaminants in Water- Trace Metals Elements

16. Copper(as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation
18. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)	0.01	No relaxation
19. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)	0.003	No relaxation
20. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	0.05	No relaxation
21. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)	0.02	No relaxation
22. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	0.05
23. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	No relaxation
24. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.09)	0.1	0.3
25. Zinc(as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)	5	15

--Test Result End --

Prescribed Limit IS 10500:2021

Operational Status Unit was Operational During sampling.

Analysed by -Pratima Kumari/ Nejaly Kumari



Checked by  
(B.N. Kumar)  
Technical Head

Verified & Issue by  
(Jimesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.,  
Ranchi, Jharkhand



# EPIC LabTech Private Limited

Address:  
C/o - R.K. Tripathi, Indrapuri,  
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CIN - U74599JH2022PTC019665  
PAN - AAHCESHTIM  
GST - 20AAHCESHTIM12X

Accredited by -  
Bharat Sanshikshan Prakashan Council Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0151251622	Group	Water
Issue date/time	21.04.2025/ 15:17	Sub Group	Ground Water

### Report Issue to

<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE: PAKHAR 109.507 BAUXITE MINE</b>	Contact Person	Mr. Ankit Das
	Contact Number	+91 9971034775
	Email Id	ankit.das@adityabirla.com
	Order Date	05.04.2025/ 10:10
	Order Number	RP/MJB/MM/25/0114/00

### References of Quality Management System(Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251622
Sample(s) Code	251622	Sample Receipt (D/T)	15.04.2025/ 10:53

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	13.04.2025/ 14:50	Sampling End (D/T)	13.04.2025/ 15:10
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Description/condition of sample		Receipt sample(s) were fit for analysis.	

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	60	Wind direction	40°-220°
-------------------	-------	------------------	----	------------	----	----------------	----------

Sampling Location(s) with GPS coordinate(s)		GPS coordinate	23° 32' 41.46"/84°36' 03.13"
S. Location A	Near Bunglapart Village		

### Date(s) of performance of the laboratory activities

Test start date	15.04.2025/ 11:10	Test completion date	21.04.2025/ 11:00
-----------------	-------------------	----------------------	-------------------

### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Acceptable Limit	Limits Permissible limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	1.0	1.5

### Group-Residues and Contaminants in Water

#### Sub Group-Trace Metals Elements

2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.1	No relaxation

### Group-Residues and Contaminants in Water

#### Sub Group-Pesticides

6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	125.0	No relaxation
12.	Chlopyrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	30.0	No relaxation

Contracted Notes | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility, at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to invoices amount only. | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any cause by use or misuse of this report. | 8. When the results are from external provider are marked as \* mark. |

Abbreviations - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



# EPIC LabTech Private Limited

Address:-  
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Jharkhand - 834005, India

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CIN:-U74999JH2022PTC019685  
PAN:-AAHCE361TM  
GST:-20AAHCE361TM12X

Accredited by:-  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0151251622	Group	Water
Issue date/time	21.04.2025/ 15:17	Sub Group	Ground Water

### Report Issue to

#### M/s - MINERALS & MINERALS LIMITED

VILLAGE-COURT ROAD,  
POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,  
STATE-JHARKHAND, INDIA 835302

#### MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

13. Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
14. Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	3.0	No relaxation
15. Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
16. Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	190.0	No relaxation
17. Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.3	No relaxation
18. Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
19. Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
20. DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
21. Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.4	No relaxation

-Test result End--

Prescribed Limit IS 10500:2021

Operational Status Unit was Operational During sampling.

Analysed by -Protima Kumari/ Nejaly Kumar



Checked by  
(B.N. Kumar)  
Technical Head

12th  
21/4/2025  
Verified & Issue by  
(Umesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

Contractual Notes | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to unvoiced amount only. | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report. | 8. When the results are from external provider are marked as \* mark. |

Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



# EPIC LabTech Private Limited

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CIN - UT4999JH2022PTC019685 Accredited by -  
Jharkhand State Pollution Control Board  
PAN - AAHCE3611M  
GST - 20AAHCE3611M12X  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL0151251623	Group	Water
Issue date/time	21.04.2025/ 15:19	Sub Group	Drinking Water

### Report Issue to

**M/S - MINERALS & MINERALS LIMITED**  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-  
LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
**MONITORING SITE: PAKHAR 109.507 BAUXITE MINE**

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0151	Sample Booking Number	EPIC-251623
Sample(s) Code	251623	Sample Receipt (D/T)	15.04.2025/ 10:54

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003& IS 1622 1981		
Sampling Start (D/T)	13.04.2025/ 14:50	Sampling End (D/T)	13.04.2025/ 15:10
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Description/condition of sample		Receipt sample(s) were fit for analysis.	

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	60	Wind direction	40°-220°
-------------------	-------	------------------	----	------------	----	----------------	----------

Sampling Location(s) with GPS coordinate(s)	
S. Location A	Near Bunglapart Village

GPS coordinate 23° 32' 41.46"/84° 36' 03.13"

Date(s) of performance of the laboratory activities	Test start date	15.04.2025/ 11:10	Test completion date	21.04.2025/ 11:00
---	-----------------	-------------------	----------------------	-------------------

### --Test Result--

SI	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	Not Detected	Shall not be detectable in any 100 ml sample
2.	E.Coli	IS 15185 2002	Per 100 ml	Not Detected	

### --Test result End --

Prescribed Limit	IS 10500:2021
Operational Status	Unit was Operational During sampling.

Analysed by - Pratima Kumar/ Anjali Kumar

Checked by  
(B.N. Kumar)  
Technical Head

21/4/25  
Unmesh Das  
Verified & Issue by  
(Unmesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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PAN - AAHCE3611MA  
GST - 20AAHCE3611M12A

Accredited by -  
ISRO, MOEF Certificate Number TC-12887  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000495	Discipline	Chemical
Report Unique ID	RL0184252003	Group	Atmospheric Pollution
Issue date/time	17.05.2025/ 11:56	Sub Group	Ambient Air Quality

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0184	Sample Booking Number	EPIC-252003
Sample(s) Code	252003 (A) (B) (C) (D)	Sample Receipt (D/T)	12.05.2025/ 10:13

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	09.05.2025/ 11:58	Sampling End (D/T)	10.05.2025/ 07:23
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	27	Humidity %	46	Wind direction	260°-80°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"
S. Location B	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"

### Date(s) of performance of the laboratory activities

Test start date	12.05.2025/ 10:20	Test completion date	16.05.2025/ 13:10
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### -Test Results-

Sl.	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	63.73	75.68	78.58	80.00	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-24) 2019	µg/m <sup>3</sup>	42.75	36.16	38.51	40.12	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	07.22	09.17	07.60	08.21	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	21.01	22.16	22.30	23.69	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	37.01	41.56	39.61	43.18	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	25.04	21.46	26.11	19.67	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)
9.	Arsenic (As)	USEPA 10.3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)

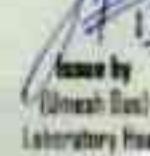
### --Test Results End --

Prescribed Limit  
Environmental (Protection) Rules-1986, Schedule VII.

Operational Status  
Unit was Operational During sampling.

Analysed by - Archana Gorain/AK Sinha

  
Reviewed by  
(A.K. Kumar)  
Technical Head

  
Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi Jharkhand

Page 1 of 1

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CIN - U74999JH2022PTC079685  
PAN - AAHCE3811M  
GST - 20AAHCE3811M128

Accredited By -  
Jharkhand State Pollution Control Board  
Certified By -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical					
Report Unique ID	RL0184252003	Group	Atmospheric Pollution					
Issue date/time	17.05.2025/ 11:56	Sub Group	Ambient Air Quality					
<b>Report Issue to</b>								
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : PAKHAR 109.507 BAUXITE MINE	Contact Person Mr. Ankit Das	Contact Number +91 9971034775	Email Id ankit.das@adityabirla.com					
	Order Date 05.04.2025/ 10:10	Order Number RP/MJB/MM/25/0114/00						
<b>References of Quality Management System (Steps of Traceability Data)</b>								
Customer Registration No.	EPIC/OTH/0184	Sample Booking Number	EPIC-252003					
Sample(s) Code	252003 (A) (B) (C) (D)	Sample Receipt (D/T)	12.05.2025/ 10:13					
<b>Sampling References</b>								
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036					
Sampling Start (D/T)	09.05.2025/ 11:58	Sampling End (D/T)	10.05.2025/ 07:23					
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team					
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)							
Description/condition of sample	Receipt sample(s) were fit for analysis.							
<b>Environmental Condition during sampling</b>								
Weather condition	Clear	Temperature (°C)	27					
		Humidity %	46					
		Wind direction	260°-80°					
<b>Sampling Location(s) with GPS coordinate(s)</b>								
S. Location A	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"					
S. Location B	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"					
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"					
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"					
<b>Date(s) of performance of the laboratory activities</b>								
Test start date	12.05.2025/ 10:20	Test completion date	16.05.2025/ 13:10					
<b>--Test Results--</b>								
Sl	Test Parameters	Method used	Unit	A	B	C	D	Limits
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-
<b>--Test Results End --</b>								

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - A.K Sinha

  
Reviewed by  
(A.K Sinha)  
Technical Head

  
Issue by  
(Omesh Das)  
Laboratory Head  
Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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CIN: U74399JH2022PTC019683  
PAN: AAHC3611M  
GST: 20AAHC3611M128

Accredited by:  
NABL, NABL certificate number TC-12887  
Jharkhand State Pollution Control Board  
Certified by:  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000496	Discipline	Chemical
Report Unique ID	RL0184252004	Group	Atmospheric Pollution
Issue date/time	17.05.2025/ 11:58	Sub Group	Ambient Noise

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@edityabiria.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0184	Sample Booking Number	EPIC-252004
Sample(s) Code	252004 (A) (B) (C) (D)	Sample Receipt (D/T)	12.05.2025/ 10:18

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	09.05.2025/ 11:58	Sampling End (D/T)	10.05.2025/ 07:23
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 9989:1981 (RA 2020) & CPCB Method S.O.50 (E) dated 11/01/2010		
Description/condition of sample		Receipt sample(s) were fit for analysis.	

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	27	Humidity %	46	Wind direction	260°- 80°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Quarry No-K9	GPS coordinate	23°33' 34.75" / 84°37' 14.90"
S. Location B	Near Mine Quarry No-K7	GPS coordinate	23°33' 29.61" / 84°36' 43.95"
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23°33' 48.52" / 84°37' 26.25"
S. Location D	Pakhar Loading Area	GPS coordinate	23°33' 28.25" / 84°37' 16.05"

### Date(s) of performance of the laboratory activities

Test start date	12.05.2025/ 10:30	Test completion date	16.05.2025/ 13:15
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### --Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	L <sub>eq</sub> (Day time)	IS: 9989:1981	dB (A)	48.6	52.3	55.2	51.3	75
2.	L <sub>eq</sub> (Night time)	IS: 9989:1981	dB (A)	38.5	40.4	42.0	37.8	70

### --Test Results End --

Prescribed Limit  
Operational Status  
Analysed by -AK Soha

Environmental (Protection) Rules-1986, Schedule III.

Unit was Operational During sampling.

Reviewed by  
(A.K. Kumar)  
Technical Head

Issue by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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CIN: U74999H2022PTC019685  
PAN: AAHC3611M  
GST: 2DAHCE3611M2X

Accredited by -  
NABL, Lab Certificate Number TC- U987  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 14001:2015



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000682	Discipline	Chemical
Report Unique ID	RL0217252409	Group	Atmospheric Pollution
Issue date/time	12.06.2025/18:26	Sub Group	Ambient Air Quality

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Days of Traceability Data)

Customer Registration No.	EPIC/OTH/0217	Sample Booking Number	EPIC-252409
Sample(s) Code	252409 (A) (B) (C) (D)	Sample Receipt (D/T)	09.06.2025/ 12:21

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	06.06.2025/ 12:25	Sampling End (D/T)	07.06.2025/ 09:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	26	Humidity %	48	Wind direction	280°-100°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"

### Date(s) of performance of the laboratory activities

Test start date	09.06.2025/ 12:50	Test completion date	12.06.2025/ 13:59
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	82.15	80.17	77.72	81.29	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m <sup>3</sup>	37.47	35.04	36.18	41.06	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	08.22	07.05	09.40	07.44	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	22.20	27.48	28.54	25.37	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	47.08	49.03	48.05	51.30	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	30.20	31.36	29.04	32.14	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - Archana Gorain

Reviewed by  
(E.K. Kumar)  
Technical Head

Issue by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.

Ranchi, Jharkhand

Page 1 of 1

Contracted Notes : 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility | 3. Test results are based on the method required and results relate only to the sample tested in prescribed Date & time | 4. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law | 5. Any complaint about this report should be communicated in writing within 10-days of its issue | 6. Total liability of EPIC LabTech Pvt. Ltd. will be limited to invoiced amount only | 7. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 8. Option does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report | 9. When the results are from external provider are marked as \* mark |

Abbreviations - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification).



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CIN - U74899JH2022PTC019923  
PAN - AAHCE5ET1M  
GST - 20AAHCE3871M12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical					
Report Unique ID	RL0217252409	Group	Atmospheric Pollution					
Issue date/time	12.06.2025/18:26	Sub Group	Ambient Air Quality					
Report Issue to								
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : PAKHAR 109.507 BAUXITE MINE	Contact Person	Mr. Ankit Das						
	Contact Number	+91 9971034775						
	Email Id	ankit.das@adityabirla.com						
	Order Date	05.04.2025/ 10:10						
	Order Number	RP/MJB/MM/25/0114/00						
References of Quality Management System (Steps of Traceability Data)								
Customer Registration No.	EPIC/OTH/0217	Sample Booking Number	EPIC-252409					
Sample(s) Code	252409 (A) (B) (C) (D)	Sample Receipt (D/T)	09.06.2025/ 12:21					
Sampling References								
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036					
Sampling Start (D/T)	06.06.2025/ 12:25	Sampling End (D/T)	07.06.2025/ 09:30					
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team					
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)							
Description/condition of sample	Receipt sample(s) were fit for analysis.							
Environmental Condition during sampling								
Weather condition	Clear	Temperature (°C)	26					
		Humidity %	48					
		Wind direction	280°-100°					
Sampling Location(s) with GPS coordinate(s)								
S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"					
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"					
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"					
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"					
Date(s) of performance of the laboratory activities								
Test start date	09.06.2025/ 12:50	Test completion date	12.06.2025/ 13:59					
-Test Results-								
Sl	Test Parameters	Method used	Unit	A	B	C	D	Limits
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS 5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS 5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-
-Test Results End -								

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - A.K. Sinha



  
Reviewed by  
(A.K. Sinha)  
Technical Head

  
Reviewed by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



# EPIC LabTech Private Limited

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• epiclabtech@gmail.com

CIN - UT49999JH2022PTC019683  
PAN - AAHCE3861M  
GST - 20AAHCE3861M12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 43001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0217252410	Group	Atmospheric Pollution
Issue date/time	12.06.2025/18:28	Sub Group	Work Zone Noise

### Report Issue to

**M/s - MINERALS & MINERALS LIMITED**  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
**MONITORING SITE: PAKHAR 109.507 BAUXITE MINE**

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Chart)

Customer Registration No.	EPIC/OTH/0217	Sample Booking Number	EPIC-252410
Sample(s) Code	252410 (A) (B)	Sample Receipt (D/T)	09.06.2025/ 12:26

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D)	06.06.2025	Sampling End (D)	07.06.2025
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 9989:1981 (RA 2020) & CPCB Method S.O.50 (E) dated 11/01/2010		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	26	Humidity %	48	Wind direction	280°-100°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Pakhar Loading Point	GPS coordinate	23° 33' 26.35" / 84° 37' 15.27"
S. Location B	Near Quarry No. K7	GPS coordinate	23° 33' 29.66" / 84° 36' 46.48"

### Date(s) of performance of the laboratory activities

Test start date	09.06.2025/ 12:51	Test completion date	12.06.2025/ 13:58
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results		Limits
				A	B	
1.	$L_{eq}$	IS: 9989:1981	dB (A)	74.4	75.1	85

### -Test Results End -

Prescribed Limit  
Operational Status  
Analysed by - A. K. Saha

  
Ankit Das  
12/06/2025  
Issue by  
(Ankit Das)  
Laboratory Head



Reviewed by  
(A. K. Saha)  
Technical Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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CIN: U74999JH2022PTC019683  
PAN: AAHCE3861M  
GST: 20AAHCE3861M2X

Accredited by :-  
NABL, ISO-Certification Number TC-12887  
Jharkhand State Pollution Control Board  
Certified by :-  
ISO 9001:2015 and ISO 14001:2015

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000831	Discipline	Chemical
Report Unique ID	RL02442528024	Group	Atmospheric Pollution
Issue date/time	12.07.2025/18:26	Sub Group	Ambient Air Quality

## Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

## References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0244	Sample Booking Number	EPIC- 2528024
Sample(s) Code	2528024 (A) (B) (C) (D)	Sample Receipt (D/T)	07.07.2025/ 11:27

## Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	05.07.2025/ 12:21	Sampling End (D/T)	06.07.2025/ 09:48
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

## Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	29	Humidity %	68	Wind direction	0°-180°
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## Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 26.25"
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"

## Date(s) of performance of the laboratory activities

Test start date	07.07.2025/ 12:09	Test completion date	11.07.2025/ 16:05
-----------------	-------------------	----------------------	-------------------

## -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	81.64	79.22	76.81	80.79	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-24) 2019	µg/m <sup>3</sup>	36.64	34.97	35.08	40.88	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	08.23	07.13	08.66	07.16	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	20.77	27.09	27.18	24.06	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	46.65	48.34	48.06	50.03	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	29.89	30.53	31.48	33.71	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1(MDL-0.1)
9.	Arsenic (As)	USEPA 10.3.2:1999	ng/m <sup>3</sup>	BDL(MDL- 1.8)	BDL(MDL- 1.8)	BDL(MDL- 1.8)	BDL(MDL- 1.8)	BDL(MDL- 1.8)

## -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - Vishal Kumar

  
Reviewed by  
(Vishal Kumar)  
Technical Head

  
Issued by  
(Dinesh Das)  
Laboratory Head

Authorized Signature

EPIC LabTech Pvt. Ltd.

Page 1 of 1



# EPIC LabTech Private Limited

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CIN - U74999JH2022PTC019883 Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Sample Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical					
Report Unique ID	RLD2442528024	Group	Atmospheric Pollution					
Issue date/time	12.06.2025/18:26	Sub Group	Ambient Air Quality					
<b>Report Issue to</b>								
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : PAKHAR 109.507 BAUXITE MINE	Contact Person Mr. Ankit Das	Contact Number +91 9971034775	Email Id ankit.das@adityabirla.com					
	Order Date 05.04.2025/ 10:10	Order Number RP/MJB/MM/25/0114/00						
<b>References of Quality Management System (Steps of Traceability Chain)</b>								
Customer Registration No.	EPIC/OTH/0244	Sample Booking Number	EPIC- 2528024					
Sample(s) Code	2528024 (A) (B) (C) (D)	Sample Receipt (D/T)	07.07.2025/ 11:27					
<b>Sampling References</b>								
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036					
Sampling Start (D/T)	05.07.2025/ 12:21	Sampling End (D/T)	06.07.2025/ 09:48					
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team					
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)							
Description/condition of sample	Receipt sample(s) were fit for analysis.							
<b>Environmental Condition during sampling</b>								
Weather condition	Cloudy	Temperature (°C)	29					
		Humidity %	68					
		Wind direction	0°-180°					
<b>Sampling Location(s) with GPS coordinate(s)</b>								
S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"					
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"					
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 46.52" / 84° 37' 28.25"					
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 26.25" / 84° 37' 16.05"					
<b>Date(s) of performance of the laboratory activities</b>								
Test start date	07.07.2025/ 12:09	Test completion date	11.07.2025/ 16:05					
<b>--Test Results--</b>								
Sl.	Test Parameters	Method used	Unit	A	B	C	D	Limits
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

-Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analyzed by - Vishal Mangaraj



Reviewed by  
(E.N. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand

Page 1 of 1

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Abbreviations : BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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PAN - AAHCE3881M  
GST - 20AAHCE3881M12X

Accredited by -  
MHRD, MHRD Certificate Number TC-52887  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000832	Discipline	Chemical
Report Unique ID	RL02442528025	Group	Water
Issue date/time	11.07.2025/ 17:03	Sub Group	Drinking Water

## Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST - LOHARDAGA, STATE - JHARKHAND, INDIA 835302  
MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

## References of Quality Management System (Steps of Traceability Chart)

Customer Registration No.	EPIC/OTH/0244	Sample Booking Number	EPIC-2528025
Sample(s) Code	2528025	Sample Receipt (D/T)	07.07.2025/ 11:32

## Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	05.07.2025/ 16:25	Sampling End (D/T)	05.07.2025/ 16:35
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS: 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

## Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	68	Wind direction	270°-90°
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## Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mines Office	GPS coordinate	23° 32' 24.21" / 840 36' 38.22"
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## Date(s) of performance of the laboratory activities

Test start date	07.07.2025/ 12:10	Test completion date	11.07.2025/ 16:30
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## -Test Result-

Sl.	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible limit
1.	pH value at 26°C	IS 3025 (P-11) 2022	-	6.58	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.85	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	5	5	15
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	218.0	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	38.43	250	1000
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	86.00	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	118.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	40.08	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1) 2022	mg/l	9.2	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	2.33	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	4.37	30	100

Page 1 of 2

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Abbreviations - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



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CIN - U74999JH2022PTC019583  
PAN - AAHCE3811M  
GST - 20AAHCE3811M12X

Accredited by -  
NABL, with certificate Number TC- U2867  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000832	Discipline	Chemical
Report Unique ID	RL02442528025	Group	Water
Issue date/time	11.07.2025/ 17:03	Sub Group	Drinking Water

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

Group- Residues and Contaminants in Water Sub Group- Trace Metals Elements

16. Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation
18. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)	0.01	No relaxation
19. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)	0.003	No relaxation
20. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	0.05	No relaxation
21. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)	0.02	No relaxation
22. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	0.05
23. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	No relaxation
24. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.09)	0.1	0.3
25. Zinc (as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)	5	15

-Test result End -

Prescribed Limit

IS 10500:2021

Operational Status

Unit was Operational During sampling.

Analysed by -Pratima Kumar



  
Reviewed by  
(P.N. Kumar)  
Technical Head

  
Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

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Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



# EPIC LabTech Private Limited

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CTN - U743999H2022PTC019985  
PAN - AAHCE3611M  
GST - 20AAHCE3611MF2X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Sample Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02442528025	Group	Water
Issue date/time	11.07.2025/ 17:03	Sub Group	Drinking Water

### Report issue to

<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE : PAKHAR 109.507 BAUXITE MINE</b>	Contact Number	Mr. Ankit Das +91 9971034775
	Email Id	ankit.das@adityabiria.com
	Order Date	05.04.2025/ 10:10
	Order Number	RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0244	Sample Booking Number	EPIC-2528025
Sample(s) Code	2528025	Sample Receipt (D/T)	07.07.2025/ 11:32

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	05.07.2025/ 16:25	Sampling End (D/T)	05.07.2025/ 16:35
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	68	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mines Office	GPS coordinate	23° 32' 24.21" / 840 36' 38.22"
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### Date(s) of performance of the laboratory activities

Test start date	07.07.2025/ 12:10	Test completion date	11.07.2025/ 16:30
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### --Test Result--

Sl.	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	1.0	1.5
<b>Group-Residues and Contaminants in Water</b>						
2.	Aluminum	IS 3025 (P-55)-2019	mg/l	BDL(MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57)-2021	mg/l	BDL(MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.1	No relaxation

<b>Group-Residues and Contaminants in Water</b>						
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6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
8.	Dieidrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	125.0	No relaxation
12.	Chlopyriphos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	30.0	No relaxation
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	3.0	No relaxation
15.	Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation

Page 1 of 2

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Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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CIN: U74999JH2022PTC019983  
PAN: AAHCESETIM  
GST: 20AAHCE3611M12X

Accredited by:  
Jharkhand State Pollution Control Board  
Certified by:  
ISO 9001:2015 and ISO 45001:2018

Environmental Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02442528025	Group	Water
Issue date/time	11.07.2025/ 17:03	Sub Group	Drinking Water

## Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabiria.com  
05.04.2025/ 10:10  
RP/MJB/MM/25/0114/00

16. Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	190.0	No relaxation
17. Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.3	No relaxation
18. Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
19. Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
20. DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
21. Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.4	No relaxation

--Test result End --

Prescribed Limit  
Operational Status

IS 10500:2021  
Unit was Operational During sampling



Reviewed by  
(P.K. Kumar)  
Technical Head

  
Issued by  
(Umesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.,  
Ranchi, Jharkhand



Page 2 of 2

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Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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CIN - U74999JH2022PTC019685 Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2015

## Aditya Birla Group

### Report Details

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL02442528026	Group	Water
Issue date/time	11.07.2025/ 17:06	Sub Group	Drinking Water

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0244	Sample Booking Number	EPIC-2528026
Sample(s) Code	2528026	Sample Receipt (D/T)	07.07.2025/ 11:32

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	05.07.2025/ 15:25	Sampling End (D/T)	05.07.2025/ 16:35
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample		Receipt sample(s) were fit for analysis.	

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	68	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Office	GPS coordinate	23° 32' 24.21" / 840 36' 38.22"
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### Date(s) of performance of the laboratory activities

Test start date	07.07.2025/ 11:40	Test completion date	11.07.2025/ 16:00
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### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	Not Detected	Shall not be detectable in any 100 ml sample
2.	E.Coli	IS 15185 2002	Per 100 ml	Not Detected	

### --Test result End --

### Prescribed Limit

IS 10500:2021

### Operational Status

Unit was Operational During sampling.

Analyzed by - Sujata Kumar

  
Reviewed by  
(S.K. Kumar)  
Technical Head

  
Issued by  
(Umesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





# EPIC LabTech Private Limited

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CIN: U74999JH2022PTC019683  
PAN: AAHCE3611M  
GST: 20AAHCE3611M12X

Accredited by -  
NABL, Lab. Certificate Number TC-12887  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 17025:2017 and ISO 45001:2018



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000984	Discipline	Chemical
Report Unique ID	RL02762533014	Group	Atmospheric Pollution
Issue date/time	21.08.2025/ 16:30	Sub Group	Ambient Air Quality

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person: Mr. Ankit Das  
Contact Number: +91 9971034775  
Email Id: ankit.das@adityabirla.com  
Order Date: 05.04.2025/ 10:10  
Order Number: RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC-2533014
Sample(s) Code	2533014 (A) (B) (C) (D)	Sample Receipt (D/T)	16.08.2025/ 10:38

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	14.08.2025/ 12:22	Sampling End (D/T)	15.08.2025/ 09:33
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	69	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"

### Date(s) of performance of the laboratory activities

Test start date	16.08.2025/ 10:58	Test completion date	21.08.2025/ 15:00
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	80.64	78.21	75.80	79.82	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m <sup>3</sup>	35.33	33.53	34.09	39.43	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	07.85	07.13	08.27	07.16	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	20.77	25.01	25.07	21.97	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	45.53	47.22	46.94	49.18	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	28.72	29.68	30.31	32.55	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA ID 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### -Test Results End -

Prescribed Limit: Environmental (Protection) Rules-1986, Schedule VII.

Operational Status: Unit was Operational During sampling.

Analysed by - Vishal Mangaraj



Reviewed by  
(E.N. Kumar)  
Technical Head

1/2  
16/8/2025  
Issue by  
(Unni Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand

Page 1 of 1

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Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



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PAN - AAHC3611M  
GST - 20AAHC3611M12X

Accredited by -  
Bharatpur State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical					
Report Unique ID	RL02762533014	Group	Atmospheric Pollution					
Issue date/time	21.08.2025/ 16:30	Sub Group	Ambient Air Quality					
<b>Report Issue to</b>								
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : PAKHAR 109.507 BAUXITE MINE	Contact Person Mr. Ankit Das Contact Number +91 9871034775 Email Id ankit.das@adityabirla.com Order Date 05.04.2025/ 10:10 Order Number RP/MJB/MM/25/0114/00							
<b>References of Quality Management System (Steps of Traceability Data)</b>								
Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC-2533014					
Sample(s) Code	2533014 (A) (B) (C) (D)	Sample Receipt (D/T)	16.08.2025/ 10:38					
<b>Sampling References</b>								
Type of industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036					
Sampling Start (D/T)	14.08.2025/ 12:22	Sampling End (D/T)	15.08.2025/ 09:33					
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team					
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)							
Description/condition of sample	Receipt sample(s) were fit for analysis.							
<b>Environmental Condition during sampling</b>								
Weather condition	Cloudy	Temperature (°C)	26					
		Humidity %	69					
		Wind direction	90°-270°					
<b>Sampling Location(s) with GPS coordinate(s)</b>								
S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"					
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"					
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"					
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"					
<b>Date(s) of performance of the laboratory activities</b>								
Test start date	16.08.2025/ 10:58	Test completion date	21.08.2025/ 15:00					
<b>-Test Results-</b>								
Sl	Test Parameters	Method used	Unit	A	B	C	D	Limits
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-
<b>-Test Results End -</b>								

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analyzed by - Vishal Mangaraj

Reviewed by  
(E.N. Kumar)  
Technical Head



Page 1 of 1

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**Abbreviations** - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification)



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CIN: U74999JH2022PTC019683  
PAN: AAHCE3611M  
GST: 20AAHCE3611M12X

Accredited by -  
NABL, license certificate number 3C\_12001  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 14001:2015

TC-12887

**Analysed Test Certificate**

Unique Lab Report No.	TC1288725000000965	Discipline	Chemical
Report Unique ID	RL02782533015	Group	Water
Issue date/time	21.08.2025/ 16:33	Sub Group	Ground Water

**Report Issue to**

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
05.04.2025/ 10:10  
RP/MJB/MM/25/0114/00

**References of Quality Management System (Days of Traceability Data)**

Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC-2533015
Sample(s) Code	2533015	Sample Receipt (D/T)	16.08.2025/ 10:40

**Sampling References**

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	14.08.2025/ 16:10	Sampling End (D/T)	14.08.2025/ 16:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample		Receipt sample(s) were fit for analysis.	

**Environmental Condition during sampling**

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	69	Wind direction	90°-270°
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**Sampling Location(s) with GPS coordinate(s)**

S. Location A	Near Bungiapart Village	GPS coordinate	23° 32' 41.46" / 84° 36' 03.13"
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**Date(s) of performance of the laboratory activities**

Test start date	16.08.2025/ 10:55	Test completion date	21.08.2025/ 15:00
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**--Test Result--**

Sl.	Test Parameters	Method used	Unit	Results	Acceptable Limit	Limits Permissible limit
1.	pH value at 25.9°C	IS 3025 (P-11) 2022	-	6.76	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.88	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	<5	5	15
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	264.00	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	43.00	250	1000
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	98.00	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	132.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	46.00	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1) 2022	mg/l	13.00	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	3.18	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	3.40	30	100
16.	Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17.	Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation

**Group - Residues and Contaminants in Water,****Sub Group - Trace Metals Elements**

16.	Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17.	Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation



# EPIC LabTech Private Limited

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CTN-U74998JH2022PTC019685  
PAN-AAHCE3611M  
GST-20AAHCE3611M12X

Accredited by:-  
NABL, Registration Number TC-12887  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000985	Discipline	Chemical		
Report Unique ID	RL02762533015	Group	Water		
Issue date/time	21.08.2025/ 16:33	Sub Group	Ground Water		
Report Issue to					
M/s - MINERALS & MINERALS LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : PAKHAR 109.507 BAUXITE MINE	Contact Person	Mr. Ankit Das			
	Contact Number	+91 9971034775			
	Email Id	ankit.das@adityabirla.com			
	Order Date	05.04.2025/ 10:10			
	Order Number	RP/MJB/MM/25/0114/00			
18. Lead (as Pb)	APHA 3111B 2023	mg/l	BDL(MDL-0.01)	0.01	No relaxation
19. Cadmium (as Cd)	APHA 3111B 2023	mg/l	BDL(MDL-0.003)	0.003	No relaxation
20. Total Chromium (as Cr)	APHA 3111B 2023	mg/l	BDL(MDL-0.05)	0.05	No relaxation
21. Nickel (as Ni)	APHA 3111B 2023	mg/l	BDL(MDL-0.02)	0.02	No relaxation
22. Total Arsenic (as As)	APHA 3114B 2023	mg/l	BDL(MDL-0.005)	0.01	0.05
23. Selenium (as Se)	APHA 3114B 2023	mg/l	BDL(MDL-0.005)	0.01	No relaxation
24. Manganese (as Mn)	APHA 3111B 2023	mg/l	BDL(MDL-0.09)	0.1	0.3
25. Zinc (as Zn)	APHA 3111B 2023	mg/l	BDL(MDL-0.04)	5	15

-Test result End -

Prescribed Limit  
Operational Status

IS 10500:2021

Unit was Operational During sampling.



Reviewed by  
(P.K. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



# EPIC LabTech Private Limited

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CIN - U74999/JH2022PTC019685  
HAN - XAHCE3611M  
GST - 20AAHCE3611M12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical			
Report Unique ID	RL02762533015	Group	Water			
Issue date/time	21.08.2025/ 16:33	Sub Group	Ground Water			
<b>Report Issue to</b>						
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE : PAKHAR 109.507 BAUXITE MINE</b>	Contact Person	Mr. Ankit Das				
	Contact Number	+91 9971034775				
	Email Id	ankit.das@adityabirla.com				
	Order Date	05.04.2025/ 10:10				
	Order Number	RP/MJB/MM/25/0114/00				
<b>References of Quality Management System (Steps of Traceability Data)</b>						
Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC-2533015			
Sample(s) Code	2533015	Sample Receipt (D/T)	16.08.2025/ 10:40			
<b>Sampling References</b>						
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036			
Sampling Start (D/T)	14.08.2025/ 16:10	Sampling End (D/T)	14.08.2025/ 16:20			
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team			
Sampling method used	IS : 3025 (Part-1) 1987, R-2003					
Description/condition of sample	Receipt sample(s) were fit for analysis.					
<b>Environmental Condition during sampling</b>						
Weather condition	Cloudy	Temperature (°C)	26			
		Humidity %	89			
		Wind direction	90°-270°			
<b>Sampling Location(s) with GPS coordinate(s)</b>						
S. Location A	Near Bungiapart Village	GPS coordinate	23° 32' 41.46" / 84° 36' 03.13"			
<b>Data(s) of performance of the laboratory activities</b>						
Test start date	16.08.2025/ 10:55	Test completion date	21.08.2025/ 15:00			
<b>--Test Result--</b>						
<b>Sl</b>	<b>Test Parameters</b>	<b>Method used</b>	<b>Unit</b>	<b>Results</b>	<b>Limits</b>	
					Acceptable Limit	Permissible limit
1.	Fluoride (as F)	APHA 4500-F-C 2023	mg/l	BDL(MDL-0.1)	1.0	1.5
<b>Group-Residues and Contaminants in Water</b>				<b>Sub Group-Trace Metals Elements</b>		
2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.05)	0.1	No relaxation
<b>Group-Residues and Contaminants in Water</b>				<b>Sub Group-Pesticides</b>		
6.	Alachlor	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	125.0	No relaxation
12.	Chlopyriphos	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	30.0	No relaxation
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.02)	0.04	No relaxation
14.	Ethion	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	3.0	No relaxation
15.	Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	2.0	No relaxation

Page 1 of 2

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Abbreviations : - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification) |



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CIN - UT49999/JH2022PTC019683  
PAN - AAHCE3611M  
GST - 20AAHCE3611M12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analysed Test Components

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02762533015	Group	Water
Issue date/time	21.08.2025/ 16:33	Sub Group	Ground Water

### Report Issue to

**M/s - MINERALS & MINERALS LIMITED**  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
**MONITORING SITE : PAKHAR 109.507 BAUXITE MINE**

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
05.04.2025/ 10:10  
RP/MJB/MM/25/0114/00

16. Malathion	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	190.0	No relaxation
17. Methyl parathion	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.2)	0.3	No relaxation
18. Monocrotophos	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	1.0	No relaxation
19. Phorate	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	2.0	No relaxation
20. DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.5)	1.0	No relaxation
21. Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	ug/l	BDL(MDL-0.05)	0.4	No relaxation

—Test result End—

Prescribed Limit

IS 10500:2021

Operational Status

Unit was Operational During sampling.



Reviewed by  
(P.K. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head  
Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000986	Discipline	Chemical
Report Unique ID	RL02762533016	Group	Water
Issue date/time	21.08.2025/ 16:36	Sub Group	Surface Water

## Report Issue to

**M/s - MINERALS & MINERALS LIMITED**  
 VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
 DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
**MONITORING SITE : PAKHAR 109.507 BAUXITE MINE**

Contact Person  
 Mr. Ankit Das  
 Contact Number  
 +91 9971034775  
 Email Id  
 ankit.das@adityabirla.com  
 Order Date  
 05.04.2025/ 10:10  
 Order Number  
 RP/MJB/MM/25/0114/00

## References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC- 2533016
Sample(s) Code	2533016	Sample Receipt (D/T)	16.08.2025/ 10:42

## Sampling References

Type of industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	16.08.2025/ 13:00	Sampling End (D/T)	16.08.2025/ 13:08
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

## Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	69	Wind direction	90°-270°
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## Sampling Location(s) with GPS coordinate(s)

S. Location A	Dumar Part (Spring Water)	GPS coordinate	23° 33' 41.03" / 84° 37' 01.16"
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## Date(s) of performance of the laboratory activities

Test start date	16.08.2025/ 11:02	Test completion date	21.08.2025/ 15:00
-----------------	-------------------	----------------------	-------------------

## --Test Result--

Sl.	Test Parameters	Method used	Unit	Results	Limits
1.	pH value at 25.4°C	IS 3025 (P-11) 2022	-	6.58	-
2.	Turbidity	IS 3025 (P-10) 1984	NTU	1.26	-
3.	Colour	IS 3025 (P-04) 2021	Hazen	5.0	-
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	-
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	-
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	290.00	-
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	20.0	-
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	72.00	-
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	84.33	-
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	16.83	-
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	-
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1) 2022	mg/l	8.51	-
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	4.49	-
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	-
15.	Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	-

## Group - Residues and Contaminants in Water,

## Sub Group - Trace Metals Elements

Page 1 of 2

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Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



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CIN - U74999JH2022PTC19683  
PAN - AAHCES611M  
GST - 20AAHCES611M12X

Accredited by -  
NABL, NABL Certificate Number TC-12887  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000986	Discipline	Chemical
Report Unique ID	RL02762533016	Group	Water
Issue date/time	21.08.2025 / 16:36	Sub Group	Surface Water

### Report issue to

M/S - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST - LOHARDAGA, STATE - JHARKHAND, INDIA 835302  
MONITORING SITE: PAKHAR 109.507 BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
05.04.2025 / 10:10  
RP/MJB/MM/25/0114/00

16. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)
17. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)
18. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)
19. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)
20. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)
21. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)
22. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)
23. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.09)
24. Zinc (as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)

--Test result End--

### Prescribed Limit

### Operational Status

Analyzed by - Pappu Kumar

Unit was Operational During sampling.

Reviewed by  
(P.K. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



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Page 2 of 2

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Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



## Analytical Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02762533016	Group	Water
Issue date/time	21.08.2025/ 16:36	Sub Group	Surface Water

### Report Issue to

<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE : PAKHAR 109.507 BAUXITE MINE</b>	Contact Person	Mr. Ankit Das
	Contact Number	+91 9971034775
	Email Id	ankit.das@adityabirla.com
	Order Date	05.04.2025/ 10:10
	Order Number	RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC- 2533016
Sample(s) Code	2533016	Sample Receipt (D/T)	16.08.2025/ 10:42

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	16.08.2025/ 13:00	Sampling End (D/T)	16.08.2025/ 13:08
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	69	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Dumar Part (Spring Water)	GPS coordinate	23° 33' 41.03" / 84° 37' 01.16"
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### Date(s) of performance of the laboratory activities

Test start date	16.08.2025/ 11:02	Test completion date	21.08.2025/ 15:00
-----------------	-------------------	----------------------	-------------------

### -Test Result-

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	-
<b>Group-Residues and Contaminants in Water</b>					<b>Sub Group-Trace Metals Elements</b>
2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	-
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	-
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	-
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	-
<b>Group-Residues and Contaminants in Water</b>					<b>Sub Group-Pesticides</b>
6.	Aalachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	-
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	-
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	-
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
12.	Chloryrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	-
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
15.	Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-

Page 1 of 2

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Abbreviations : - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



# EPIC LabTech Private Limited

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0651-4866392  
98357 86677  
93049 12694  
epiclabtech@gmail.com

CIN - U74999JH2022PTC019685  
PAN - AAHCE3611M  
GST - 20AAHCE3611M12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02762533016	Group	Water
Issue date/time	21.08.2025/ 16:36	Sub Group	Surface Water
Report Issue to			
<b>M/s - MINERALS &amp; MINERALS LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE : PAKHAR 109.507 BAUXITE MINE</b>	Contact Person Mr. Ankit Das Contact Number +91 9971034775 Email Id ankit.das@adityabirla.com Order Date 05.04.2025/ 10:10 Order Number RP/MJB/MM/25/0114/00		
16. Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)
17. Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)
18. Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)
19. Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)
20. DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)
21. Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)

-Test result End -

Prescribed Limit

Operational Status

Analysed by - Pappu Kumar

Unit was Operational During sampling.



Reviewed by  
(R.K. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

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# EPIC LabTech Private Limited

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98357 88677  
93049 73994  
epiclabtech@gmail.com

CIN: U74999JH2022PTC019681  
PAN: AAHCE3611M  
GST: 25AAHCE3611M12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL02762533017	Group	Water
Issue date/time	21.08.2025/ 16:39	Sub Group	Ground Water

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC-2533017
Sample(s) Code	2533017	Sample Receipt (D/T)	16.08.2025/ 10:48

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	14.08.2025/ 16:10	Sampling End (D/T)	14.08.2025/ 16:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample		Receipt sample(s) were fit for analysis.	

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	69	Wind direction	90°-270°
-------------------	--------	------------------	----	------------	----	----------------	----------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Bungiapart Village	GPS coordinate	23° 32' 41.46" / 84° 36' 03.13"
---------------	-------------------------	----------------	---------------------------------

### Date(s) of performance of the laboratory activities

Test start date	16.08.2025/ 10:55	Test completion date	21.08.2025/ 15:00
-----------------	-------------------	----------------------	-------------------

### Test Result

Sl.	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	Not Detected	Shall not be detectable in any 100 ml sample
2.	E.Coli	IS 15185 2002	Per 100 ml	Not Detected	

### Test result End

Prescribed Limit

Operational Status

Analyzed by - Sujata Kumar



Reviewed by  
(S. Kumar)  
Technical Head

Issued by  
Ankit Das  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand

Page 1 of 1

Contractual Notes: 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility, at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used, as proof in the court of law. | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to incurred amount only | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report. | 8. When the results are from external provider are marked as \* mark. |

Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation)



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93049 13994  
epiclabtech@gmail.com

CIN-U74999JH2022PTC079685  
PAN-AKHCE3611M  
GST-20AAHCE3611M12X

Accredited by -  
Bihar State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 43001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL02762533018	Group	Water
Issue date/time	21.08.2025/ 16:42	Sub Group	Surface Water

### Report Issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
05.04.2025/ 10:10  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0276	Sample Booking Number	EPIC- 2533018
Sample(s) Code	2533018	Sample Receipt (D/T)	16.08.2025/ 10:48

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	16.08.2025/ 13:00	Sampling End (D/T)	16.08.2025/ 13:08
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	69	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Dumar Part (Spring Water)	GPS coordinate	23° 33' 41.03" / 84° 37' 01.16"
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### Date(s) of performance of the laboratory activities

Test start date	16.08.2025/ 11:02	Test completion date	21.08.2025/ 15:00
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### —Test Result—

Sl.	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185:2002	Per 100 ml	350	
2.	E.Coli	IS 15185:2002	Per 100 ml	170	

### —Test result End —

### Prescribed Limit

### Operational Status

Unit was Operational During sampling.

Analyzed by - Sujata Kumar



Reviewed by  
(S. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 1 of 1

**Contractual Notes** | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to invoiced amount only | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any claim by user or assessor of this report | 8. When the results are from external provider are marked as \* mark | 9. Abbreviations - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation) |



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001168	Discipline	Chemical
Report Unique ID	RL03042537007	Group	Atmospheric Pollution
Issue date/time	12.09.2025/ 15:20	Sub Group	Ambient Air Quality

## Report issued to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

## References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0304	Sample Booking Number	EPIC-2537007
Sample(s) Code	2537007 (A) (B) (C) (D)	Sample Receipt (D/T)	09.09.2025/ 11:03

## Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	07.09.2025/ 12:23	Sampling End (D/T)	08.09.2025/ 09:50
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

## Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	29	Humidity %	68	Wind direction	270°-90°
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## Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"

## Data(s) of performance of the laboratory activities

Test start date	09.09.2025/ 11:23	Test completion date	12.09.2025/ 15:00
-----------------	-------------------	----------------------	-------------------

## --Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	55.06	56.94	53.85	57.97	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-24) 2019	µg/m <sup>3</sup>	27.33	24.44	25.37	22.48	60 (24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	09.35	08.22	09.71	08.58	80 (24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	18.70	19.72	17.63	18.65	80 (24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2016	µg/m <sup>3</sup>	21.08	20.80	20.24	19.39	400 (24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	13.72	14.04	15.00	15.32	180 (1 hr)
7.	Lead (Pb)	IS:5182 (P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0 (24 hr)
8.	Nickel (Ni)	IS:5182 (P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)				
9.	Arsenic (As)	USEPA 10.3.2:1996	ng/m <sup>3</sup>	BDL (MDL-0.001)				

## --Test Results End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj

Reviewed by  
(E.N. Kumar)  
Technical HeadIssued by  
(E.N. Kumar)  
Laboratory Head

Authorized Signatory

EPIC LabTech Pvt. Ltd.

Page 1 of 1

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Abbreviations - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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93049 73994  
Email: [epiclabtech@gmail.com](mailto:epiclabtech@gmail.com)

CIN: U74999JH2022PTC019685 Accredited by:  
Jharkhand State Pollution Control Board  
Certified by:  
ISO 9001:2015 and ISO 45001:2018

## Environmental Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03042537007	Group	Atmospheric Pollution
Issue date/time	12.09.2025/ 15:20	Sub Group	Ambient Air Quality

### Report issue to

M/s - MINERALS & MINERALS LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : PAKHAR 109.507 BAUXITE MINE

Contact Person  
Mr. Ankit Das  
Contact Number  
+91 9971034775  
Email Id  
ankit.das@adityabirla.com  
Order Date  
05.04.2025/ 10:10  
Order Number  
RP/MJB/MM/25/0114/00

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0304	Sample Booking Number	EPIC-2537007
Sample(s) Code	2537007 (A) (B) (C) (D)	Sample Receipt (D/T)	09.09.2025/ 11:03

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	07.09.2025/ 12:23	Sampling End (D/T)	08.09.2025/ 09:50
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	29	Humidity %	68	Wind direction	270°-90°
-------------------	--------	------------------	----	------------	----	----------------	----------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Mine Quarry No-K7	GPS coordinate	23° 33' 29.61" / 84° 36' 43.95"
S. Location B	Near Mine Quarry No-K9	GPS coordinate	23° 33' 34.75" / 84° 37' 14.90"
S. Location C	Near Mine Quarry No-K5	GPS coordinate	23° 33' 48.52" / 84° 37' 28.25"
S. Location D	Pakhar Loading Area	GPS coordinate	23° 33' 28.25" / 84° 37' 16.05"

### Date(s) of performance of the laboratory activities

Test start date	09.09.2025/ 11:23	Test completion date	12.09.2025/ 15:00
-----------------	-------------------	----------------------	-------------------

### --Test Results--

Sl.	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.0)	BDL (MDL-1.0)	BDL (MDL-1.0)	BDL (MDL-1.0)	-

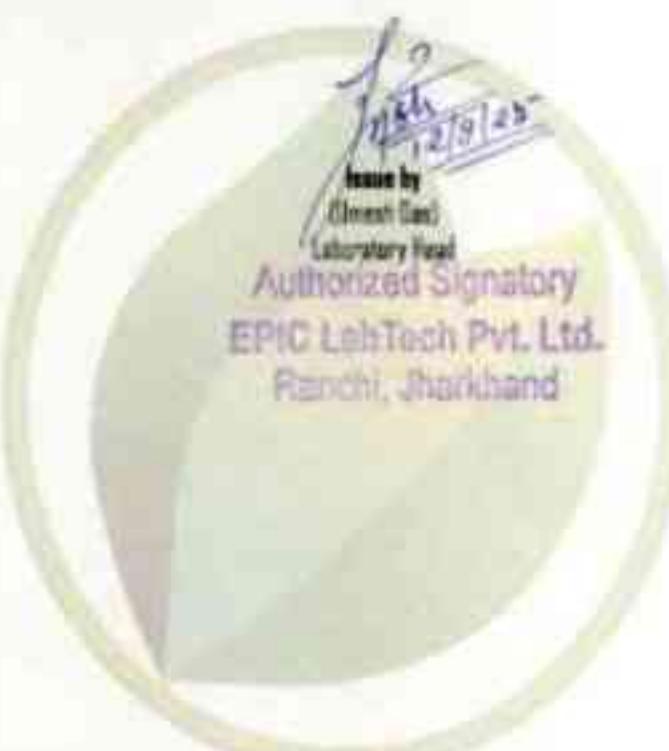
### --Test Results End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj

Reviewed by  
(R.K. Kumar)  
Technical Head



# MINERALS & MINERALS LIMITED

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

Tel.-06526-223163

CIN NO. U26990JH1970PLC000875

---

Ref. :

Date .....

## Annexure 3

Date - 01.05.2025

### Office Order

Environmental Cell has been re-constituted for Pakhar Group of Mines (Pakhar - 109.507 ha, Pakhar - 15.58 ha Bauxite Mines). This cell consists of the following team members who will ensure compliance with the Environment Acts, Rules & Regulations in respect of the said mines of Minerals & Minerals Limited.

1. Mr. Jitendra Kumar (Coordinator)
2. Mr. Chandan Kumar (Geologist)
3. Mr. Girija Tamrakar (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 acts, rules and regulations for the above mines.



Basudev Gangopadhyay  
AVP (Planning, Environment & Compliance)

**Annexure 4**

<b>Production, Mined Out, Back Filled and Over Burden removal from April 2025 to September 2025</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>Backfilled 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	79390	0.21	0.45	87427.68
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	41829	0.11	0.23	13246.30
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	124975	1.58	0.50	153576.56
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	500	0.03	0.01	0.00
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	57100	2.01	1.60	70755.24
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	8547	0.13	0.10	8842.10
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	94470	4.30	3.31	125642.99
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	NIL	NIL	NIL	NIL
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	63140	1.67	0.51	56988.56
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	93765	3.168	1.21	209999.64

**Annexure 4**

<b>Minerals &amp; Minerals Limited</b>								
14	Pakhar (109.507) Bauxite Mine	109.507	280000	26.07.2008 to 25.07.2058	100280	1.630	0.72	175833.99
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	77100	0.849	0.30	62788.97
17	Amtipani Chirodih Bauxite Mine	130.01	450000	11.01.2017 to 10.01.2067	157400	5.320	4.600	218030.43

\*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 2025-26**

The composite cost during the year 2025-26 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Bagru (75.41 ha), Hisri New (14.55 ha), Bhusar (65.31 ha), Pakhar (115.13 ha), Pakhars (109.507 ha), Pakhar (15.58 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Sherangdag (155.81 ha), Serangdag (77.89 ha), Jalim & Sanai (12.14 ha), Bimarla Bauxite Mines (134.526 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.87 ha) Kujam II (157.38 ha), and Amtipani Chirodih (130.01 ha) Bauxite mines.

S. No	Description	Budget (in Rupees) FY 2025-26 (From Apr'25 to Sep'25)	Actual (in Rupees) FY 2025-26 (From Apr'25 to Sep'25)
1	Pollution Control and Environmental Monitoring	1,71,00,000	59,45,184
2	Reclamation/ Back filing & Rehabilitation**	2,04,00,000	1,19,00,000
3	Green belt, Plantation & Water sprinkling arrangement	1,20,00,000	42,73,045
4	Rural Development	7,92,00,000	2,59,84,599

\*\*Part of OB removed cost



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