SIX MONTHLY COMPLIANCE REPORT OF

ENVIRONMENTAL CLEARANCE

FOR THE PERIOD APRIL TO SEPTEMBER 2024
2 MTPA

SUBMITTED BY

Lafarge Umiam Mining Pvt Ltd

FOR
NONGTRAI LIMESTONE MINE
VILLAGE NONGTRAI,
DISTRICT EAST KHASI HILLS, MEGHALAYA

NOV 2024

LafargeHolcim

November 22, 2024

Ministry of Environment, Forest and Climate Change
Government of India
Integrated Regional Office,
Shillong – 793021, Meghalaya

Subject: Implementation of conditions stipulated in the Ministry's environmental clearance letter No. J-11015/10/2000 IA. II (M) dated 09 August 2001 and modified letter No.J-11015/10/2000 IA.II (M) dated 19 April 2010 regarding limestone opencast mining project at Phlangkaruh, Nongtrai, Tehsil-Sohra, Distt.East Khasi Hills, Meghalaya of M/S Lafarge Umiam Mining Pvt. Ltd.

Madam,

With reference to the environmental clearance letter stated above, we are pleased to submit following reports as detailed below. This is as per EIA notification 14 September 2006.

Half yearly Environmental Monitoring Report for the month of April to September 2024 along with Compliance status as on 30th September 2024 and the Conditions of Environmental Clearance No. J-11015/10/2000 IA. II (M) dated 09 August 2001 and modified letter No. J-11015/10/2000 IA. II (M) dated 19 April 2010.

The above report is also displayed on our official website "http://www.lumpl.com"

We are fully committed to comply with environmental safeguards.

Thanking You,

George Chacko
Director Corporate Affairs

Enclosure: As stated above

Cc: 1. The Member Secretary Meghalaya State Pollution Control Board, Arden Lumpyngad Shillong
2. Zonal Officer, Central Pollution Control Board Shillong Meghalaya "TUM-SIR", Lower Motinagar; Near Fire Brigade
3. Director (S), Impact Assessment Division Ministry of Environment, Forests and Climate Change Indira Paryavaran Bhavan Jorbagh Road New Delhi - 110 003 INDIA

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Half Yearly Compliance Status for the period of April to September 2024 on the Conditions of Environmental Clearance No. J-11015/10/2000-IA. II. (M) dated 9 August 2001 and Transferred to LUMPL dated 30 July 2002

<table>
<tr><td colspan="3">Conditions as per Environmental Clearance Letter dated 9 August 2001 as amended on 19 April 2010 with respect to Specific Condition A and General Conditions B</td></tr>
<tr><td colspan="2">A: Specific Conditions</td><td></td></tr>
<tr><td>(i)</td><td>Topsoil should be properly stacked at earmarked dump site(s) with adequate measures and should be used for reclamation and rehabilitation of mined out areas.</td><td>

Availability of top soil in the mining lease area is almost negligible as the area within the mine lease is devoid of any overburden. Any trapped soil, encountered from the crevices or fractured rocks (due to Karst topography) is being collected and properly stacked.
As the limestone is exposed on the surface and the mining area is practically devoid of any overburden or topsoil, no overburden waste dumping is involved.
Records of topsoil recovered during the last three years is presented as following:

<table>
<tr><th>Status as on</th><th>Clay/ Top Soil Recovered in tonne</th><th>Clay/ Top Soil Used in Greenbelt/ Plantation in tonne</th><th>Balance Clay Available in tonne</th><th>Remarks</th></tr>
<tr><td>December 2022</td><td>9.290</td><td>7.000</td><td>12.480</td><td>Use at Nursery, Green belt & Safety zone</td></tr>
<tr><td>December 2023</td><td>3.440</td><td>4.000</td><td>11.920</td><td>Use at Nursery, Safety zone & Block A</td></tr>
<tr><td>September 2024</td><td>2.570</td><td>4.800</td><td>9.690</td><td>Use at Nursery, Safety Zone, Block A & B</td></tr>
</table>

Measures for rehabilitation of mined out areas will be done as per progressive mine closure plan and five years prior to

</td></tr>
</table>

		decommissioning of mines as per prior approval of IBM and Mining and Geology Department Government of Meghalaya.
(ii)	Check dams and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted and maintained. Garland drain (size, gradient & length) and sump capacity should be designed keeping 50 % safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.	• Eight check dams have been constructed in the gullies and area surrounding the mine. • Drains have been constructed along the active mine benches linking it with siltation ponds. However most of the rain water gets percolated down from the mine surface (having crevices and fractured rocks due to Karst topography). • The mine is yet to achieve the solid surface, once the fractured zone of the mine benches is exhausted, the garland drains are envisaged to be constructed on the lower benches to carry rainwater to the siltation pond (at lower benches) for its effective collection and use in watering the mine area, roads, green belt etc.  Check Dam near Transit House Checkdam to West of the Mine Check dam to Southeast of the mine Check dam near Mine Entrance Gate Check dam to Southeast below PWD Road Check dam near the origin of Pilangkaruh River Check dam to South of the Mine Check dam to Southwest of the Mine

(iii)	A thick green belt in an around the mine site, crushing, loading and unloading facilities, corridor of belt conveyor route, township should be developed. Width of greenbelt on the eastern and southern sites of lease area should be at least 50 m (7.5 m within ML area and 42.5 m outside ML area) and 100 m (7.5 m within ML area and 92.5 m outside ML area) respectively as per the plan submitted in EMP.	• Being complied with • LUMPL has also been carrying out plantation by maintaining a green belt of 100 m width (including 7.5 m within ML area) as per the condition of EC no. J-11015/10/2000-IA. II. (M) dated 9 August 2001 and Transferred to LUMPL dated 30 July 2002 modified by MoEFCC on 19 April 2010 for 2.0 MTPA limestone mining. • Total plantations carried out in the greenbelt area, along the roads and safety zones are 45,399 as on 30th September 2024 with survival rate of approximately ~ 77.1%.
(iv)	Adequate measures should be taken for treatment of the upper catchments of the lease area.	• Report on Upper Catchment Area Treatment Plan as prepared by CIMFR, Nagpur and NEERI, Nagpur was submitted to MoEF, New Delhi and its Regional Office, Shillong through a covering letter dated 30th June 2010. • MoEF vide letter no. F.No.8-64/2007-FC dated 29 December 2011, advised LUMPL to deposit the funds required to implement the Catchment Area Treatment (CAT) Plan amounting to Rs.50,00,000/- (Rupees Fifty Lakh Only). The requisite amount was deposited by LUMPL in CAMPA Fund in account No. SB01025217 with Corporation Bank on 5th January, 2012 for implementation of CAT Plan. • As part of the recommendations of Catchment Area Treatment Plan, eight check dams have been constructed in the gullies and area surrounding the mine. Drains have been constructed along the active mine benches linking it with siltation ponds. However most of the rain water gets percolated down from the mine surface (having crevices and fractured rocks due to karst topography). Greenbelt of 100 m all along the mine is being maintained.

(v)	Blasting operations should be carried out only during the daytime. To ensure slope stability and minimum damage to sub-surface caves and channels, controlled blasting should be adopted. The mitigative measures suggested in the EMP for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	• Blasting is being practiced only during daytime. • To control ground vibration, air overpressure and fly rocks, blasting is carried out by NONEL (Non-Electric Detonators) system as per the recommended parameters by CIMFR Nagpur. The peak particle velocity and air overpressure remained within the safe limits of prescribed standards as laid down in the Circular issued by the Directorate General of Mines Safety, Government of India. • Refer to **Annexure- I** the monitored ground vibrations along with other environmental parameters included in six monthly compliance report for the period April to September 2024 (as enclosed) have also been displayed at company's website "http://www.lumpl.com". ▪ Further LUMPL has engaged Central Institute of Mining and Fuel Research (CIMFR), Nagpur in the year 2017- 2018 to carry out Scientific Investigation in respect of "blast induce ground vibration, fly rock and air blast". Based on the recommendations of the study, LUMPL has further modified the blast design. The study report was submitted during the reporting period April to September 2018.
(vi)	Sewage treatment plant for treating residential and waste from industrial area should be provided. ETP shall also be provided for the workshop and wastewater generated during the mining operation. (as amended through MoEF letter dated 19 April 2010)	▪ Being complied with. ▪ Six package STPs are operational for treatment of domestic wastewater. ▪ An ETP is operational for treatment of wastewater generated during washing of HEMMs at the workshop. ▪ LUMPL upgraded the existing STPs and ETP by changing the air lining, replace the old pipes, applied Fiber Reinforced Plastic coating in the reactor tank, changing the filters etc. and it is operational.
(vii)	Scientific monitoring within 1 km radius around the lease area should be carried on monthly basis for the following: • Out flow of all the springs, • Hills slope, and collapse of caves and cavities within and around the ML area and blockage of	▪ No caves have been observed inside the mining lease area. Within 1 km radius around the mine, there exist twin sink holes and cave located outside the mining lease area. Detailed mapping of the cave located along the south-western part outside the mine lease area have been carried out and these have been marked on the plan. Fencing around the twin sink holes at 100 m distance have been

	sub-surface water channels.	carried out during June 2011 to restrict movement of people and or machine. ▪ Monthly monitoring within 1 km around the mine lease area is being carried out covering flows of Phlangkaruh springs located to the south of the mine across the road down the hill slopes. ▪ No mining operation in the area of the sink holes and area near cave are done as these are located outside the mine lease area. ▪ Monitoring of outflow of springs is included in Table 16 to 17 of the compliance report of April to September 2024 (as enclosed). ▪ LUMPL in partnerships with the Nongtrai Village Durbar has launched Geo and Bio Diversity Protection Programme in the year 2008, which is an initiative for protecting the cave located in the vicinity of Nongtrai Limestone Mine site. A protective enclosure was constructed around the entrance of about approximately 125 m long cave.  **Fencing around Cave Area for its Protection.**

(viii)	Regular monitoring of water quality of Phlangkaruh springs and river including ground water for physico-chemical and biological parameters should be carried out. Monitoring should be continuous during initial mining operations. If required, a check dam should be constructed on the Phlangkaruh immediately below the springs with the approval of concerned authorities, if any, to arrest silt & screen escape from the mine.	▪ Monitoring of water quality of Phlangkaruh springs (upstream and downstream), and Umiam River (upstream and down streams) is being carried out by ABNS SCIENTIFIC SERVICES PRIVATE LIMITED recognized by Meghalaya State Pollution Control Board (MSPCB) on monthly basis in their laboratory in Guwahati. ▪ The water quality results is included in the **Annexure –II** of the compliance report of April to September 2024 (as enclosed). ▪ A check dam is operative across the Phlangkaruh River.
(ix)	After the mine becomes operational, ground vibrations due to blasting and its impact on various mine structures should be studied in detail and report submitted to MoEF.	▪ LUMPL has been implementing recommendations of the scientific investigations conducted by Central Institute of Mining and Fuel Research (CIMFR), Government of India in 2015 to control blast induced ground vibration, fly rock and air overpressure. ▪ Monitoring of ground vibrations during every blast is done in two different directions using two seismographs of “MINIMATE“model DS-567 imported from INSTANTEL, Canada. Based on the results from these machines further modification in blasting is done from time to time. The monitoring of peak particle velocity during the period 1st April to 30th September 2024 remained well below 5 mm/sec at the distance of 200 to 300 m, which is well within the Indian Standard limits as prescribed by Directorate General of Mines Safety – DGMS (Tech.) Circular No.7 dated 29th September 1997). ▪ Further LUMPL has engaged Central Institute of Mining and Fuel Research (CIMFR), Nagpur in the year 2017- 2018 to carry out Scientific Investigation in respect of “blast induce ground vibration, fly rock and air blast”. Based on the recommendations of the study, LUMPL has further modified the blast design. The study report submitted during the reporting period April to September 2018.

(x)	Crusher should be operated with high efficiency bag filters. Water sprinkling system should be provided to check fugitive emissions from crushing operations.	▪ Being complied with. ▪ Mitigation measures to control dust emission including provision of water sprinkling, bag filters, fogging system and rain-gun are in place on crushing operations done through two stages crushers and transfer points. Belt conveyor is covered to avoid air borne dust.   **Bag Filter units attached to Crushers** ▪ Effective water sprinkling, water fogger in crusher hopper and rain gun system at crushers charging platform to check any fugitive dust emissions.  **Rain Water Gun at Crushers Charging Platform**
(xi)	Vehicular emissions should be kept under control and regularly monitored.	▪ All the HEMM (diesel driven vehicles) are being serviced as per periodical maintenance. Vehicle emission test of all HEMMs deployed

		in the mining operations monitored by Meghalaya State Pollution Control Board on half yearly basis.*P*UC certificate obtained from MSPCB is valid up to December 2024. A sample of the report is enclosed as **Annexure- III** of the six monthly compliance report of April to September 2024.
(xii)	The twin sinkholes and the surrounding vegetation should be left undisturbed during the entire mine life and protected as a reserve of site biodiversity.	▪ Being complied with. ▪ No mining will be carried out near the twin sink holes and the surrounding vegetation is being protected against any degradation. ▪ Fencing around the twin sink holes at 100 m distance has been maintained since June 2011 to restrict movement of people and or machine. ▪ An area of around 1.785 ha from the mining lease have been left out for the protection of twin sink hole
(xiii)	Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in three years for monitoring land use pattern and physiography of the area and report submitted to the Ministry and its Regional Office at Shillong.	▪ The digital processing of the entire lease area using remote sensing technique was carried out for the period of 2020-2022 and the study report was submitted during the reporting period April to September 2023.
(xiv)	A detailed mine decommissioning plan should be submitted to the Ministry of Environment & Forests 5 years in advance for approval.	▪ Noted and will be complied 5 years in advance for approval.
(xv)	Other project specific environmental protection measures suggested in the Environmental Management Plan should also be implemented.	▪ Being complied with
B: General conditions		
(i)	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.	▪ Noted.

(ii)	No change in the calendar plan including excavation, quantum of limestone, waste/ OB dumps should be made.	▪ Noted.
(iii)	Five ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM 10), SO2 and NOx monitoring. Location of the ambient air quality stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board." (as amended through MoEF letter dated 19 April 2010)	▪ Ambient Air Quality (AAQ) is being monitored with respect to PM10, PM2.5, SO2 and NOx at five locations within and surrounding areas (covering core and buffer zones) as selected by MSPCB through their letter dated 24 February 2012. The locations are; 1) HEMM Workshop 2) Near Magazine 3) Near Phlangkaruh Village 4) Pyrkan Village; and 5) Shella Bazar. ▪ The observed results of ambient air quality parameters (as monitored from (April to September 2024) remained within the prescribed limits and are being reported as in Tables 2 to 11 of the six monthly compliance report of April to September 2024 (as enclosed).
(iv)	Data on ambient air quality RSPM (particulate matter with size less than 10micron i.e., PM 10) SO2 and NOx should be regularly submitted to the Ministry including its Regional Office located at Shillong and the State Pollution Control Board/Central Pollution Control Board once in six months. (as amended through MoEF letter dated 19 April 2010)	▪ Being done regularly. ▪ Observations have been included in the compliance report.
(v)	Adequate measures for control of fugitive emissions should be taken during drilling and blasting operations, loading and transportation of minerals etc.	Steps that have been taken as on date to control fugitive emissions include the following: Effective safeguard measures to control dust and PM_{10} & $PM_{2.5}$ generation include the following: ▪ Provision of dry drilling with dust extraction system in place or wet drilling of holes;

		▪ Use of good quality explosives, implementing CIMFR recommended measures during blasting i.e. provision of proper stemming after charging of explosives and use of delay detonators minimizing dust throw and its spread in ambient air; ▪ Ensuring blasting is done only in the daytime when no strong winds are blowing or there is no overcast or lightening event. ▪ Loading /unloading of limestone from an optimum height and use of sharp teeth for shovel to reduce dust blow; ▪ Avoiding overloading of haul trucks to eliminate spillage during transit on haul road; ▪ Water sprinkling on unpaved areas and haul road during dry wind periods through fixed sprinklers supplemented with water tankers in active mine pit area; ▪ Ensuring speed controls as already practiced to the limit of 20 km/hour on vehicle movements on haul roads; ▪ Preventive maintenance of mine machinery and regular fine-tuning of engines of HEMMs in use to ensure that the emission levels remain within the stipulated norms and maintaining Pollution Under Control (PUC) Certificates; ▪ Provision of water sprinkling, rain gun and fogger system to minimize dust generation while unloading of dumper into the crusher hopper; ▪ Provision of dust extraction system with bag filters in crushing and transfer operations. High efficiency dust collection system will continue to operate to achieve particulate emission to less than 50 mg/Nm3 through crushers, TB-1 and TB-2 stacks; ▪ Provision of water sprinkling for transfer of crushed limestone through hoods/chutes before unloading on long belt conveyor to prevent dust emissions; ▪ Provision of close type long belt conveyor provided with water sprinkling for transportation of crushed limestone; ▪ Personnel working in dusty area are mandated to use protective gears such as dust masks.

		  **Water Sprinklers fixed along the median of Haul Road.**   **Water Sprinklers in Dump Hopper and Rain water Gun for water sprinkling in the surrounding area**
(vi)	Adequate measures should be taken for control of noise levels below 75 dB (A) in the work environment.	▪ Measures have been adopted to minimize noise levels in the work environment. ▪ Mitigations measures are in place to minimize noise levels. All working areas are being maintained within the prescribed noise levels. Workers engaged in operations of HEMM have been provided with ear plugs/muffs.
(vii)	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the	▪ Personal protective equipment including dust masks, ear plugs, safety shoes, illuminating jacket, hard hat are compulsory for all workers working in the mine. Life Saving (Tool Box) talk is held daily. Refresher training on safety and health is imparted on regular basis to all the workers.

	workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	▪ Qualified doctors based at the site have been providing medical support to the employees and community in the surrounding villages. ▪ Qualified Occupational Health Specialist available at site for regular and periodic medical examination of the workers engaged in the project. ▪ Records of periodical medical examinations done in the recent past are being maintained for all employees (including contractor workers) as per the requirement of Mines Rules, 1955.
(viii)	The funds earmarked for Environmental Protection measures should be kept in separate account and not diverted for other purpose. Year–wise expenditure should be reported to the Ministry of Environment & Forests.	▪ Separate account for environmental expenses is being maintained. ▪ Funds earmarked for environment protection are being maintained in the separate bank account. ▪ Expenditure incurred for the period 1st April to 30th September 2024 was INR 27.02 Lakhs.
(ix)	The Regional Office of this Ministry located at Shillong shall monitor compliance of the stipulated environmental safeguards. The project authorities should send one set of EIA/EMP report and mining plan to them and extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	▪ Complied with.
(x)	The project authority should inform to the Regional Office located at Shillong as well as to the Ministry of Environment & Forests regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	▪ Complied with
(xi)	A copy of the clearance letter will be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been received while	▪ Complied with

	processing the proposal.	
(xii)	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's office/Tehsildar Office for 30 days.	▪ Complied with
(xiii)	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within 7 days 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 may also be seen at web site of the Ministry of Environment & Forests at *http://envfor.nic.in* and a copy of the same should be forwarded to Regional Office of the Ministry located at Shillong.	▪ Complied with

Half Yearly Compliance Status for the period of 01 April to September 30, 2024 on the Conditions of Environmental Clearance No. J-11015/10/2000-IA.II.(M) partial modification by MoEF dated 19 April 2010

S. No.	Conditions	Status of Compliance
1. Additional Conditions as per Partial Modification of Environmental Clearance Letter dated 19 April 2010		
A -Specific conditions		
A (i)	The project proponent shall prepare a detailed Catchment Area Treatment Plan and implement the same in consultation with the Competent Authority in the State Government. A copy of the plan shall be submitted to the Ministry and its Regional Office at Shillong.	▪ Report on Upper Catchment Area Treatment Plan as prepared by CIMFR, Nagpur and NEERI, Nagpur was submitted to MoEF, New Delhi and its Regional Office, Shillong through a covering letter dated 30th June 2010. ▪ MoEF vide letter no. F.No.8-64/2007-FC dated 29th December 2011, advised LUMPL to deposit the funds required to implement the Catchment Area Treatment (CAT) Plan amounting to Rs.50,00,000/- (Rupees Fifty Lakh Only). The requisite amount was deposited by LUMPL in CAMPA Fund in account No. SB01025217 with Corporation Bank on 5th January, 2012 for implementation of CAT Plan. ▪ As part of the recommendations of Catchment Area Treatment Plan, eight check dams have been constructed in the gullies and area surrounding the mine. Drains have been constructed along the active mine benches linking it with siltation ponds. However, most of the rainwater gets percolated down from the mine surface (having crevices and fractured rocks due to karst topography). Greenbelt of 100 m all along the mine is being maintained.
A (ii)	The project proponent shall explore the use of Surface Miner technology and submit its report to the Ministry within three months.	▪ Central Institute of Mining and Fuel Research (CIMFR) conducted a study in 2010 on Applicability of Surface Miner in Nongtrai Limestone Mine of Lafarge Umiam Mining Private Limited in Meghalaya. As per the study, the application of surface miner for mining limestone in Nongtrai mine is not a technically viable proposition and should not be tried at

		present. The rock is too strong to be mechanically excavated for the purpose of mining yielding bulk production. ▪ The Expert Appraisal Committee of MoEF during its meeting on 29th June 2010, as recorded in the minutes under paragraph 2.19, states that "as regards adoption of 'Surface Miners', the Committee agreed with the recommendations of CIMFR that it is not technically viable to use surface miners in Nongtrai. The rocks in the ore body are too strong and undulating to lend themselves for excavation by using 'Surface Miners', which are suitable for softer mineral bodies in flatter terrain."
A (iii)	The project proponent shall discontinue agreement, if any, for procuring limestone on the basis of disorganized and unscientific and ecologically unsustainable mining in the area.	▪ An Amendment Agreement between Nongtrai Durbar and LUMPL was executed on 6th July 2010 whereby clause related to procurement of Limestone by Nongtrai Durbar for LUMPL was deleted. ▪ A copy of the amendment was submitted to the State Government on 7th July 2010.
A (iv)	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna spotted in the study area. Action plan for conservation of flora and fauna shall be prepared in consultation with the State Forest and Wildlife Department. All the safeguard measures 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, Shillong.	Following reports amongst other were appraised by EAC of MoEF during its meeting held on 21st July 2010: a) Assessment of Floral and Faunal Diversity in Core and Buffer Zones of Nongtrai Limestone Mine of Lafarge Umiam Mining Pvt. Ltd. and its Surrounding Areas by Professor S.K. Barik, Project Coordinator, North-Eastern Hill University (NEHU), Shillong – 793022, June 2010, and; b) Biodiversity Conservation Plan for Nongtrai Limestone Mine of Lafarge Umiam Mining Pvt. Ltd. and its Surrounding Areas by Government of Meghalaya, Shillong, June 2010. Four season baseline report for the study area was submitted on 7th May 2013.

		▪ Action Plan for the conservation measures prepared by the State Government along with a budget of INR 439 lakhs to be spent over in next 10 years for biodiversity conservation. The total amount for the implementation of the Biodiversity Conservation Plan (BCP) amounting to INR 439 lakhs has been deposited in the CAMPA account of Meghalaya No. SB010 25217 on 5th January 2012. ▪ The status of the implementation of the Biodiversity Conservation plan was submitted during the reporting period October 2023 to March 2024.
A (v)	The project proponent shall maintain a strip of at least 100 meter of forest area on the boundary of mining area as a green belt.	▪ Being complied with. ▪ After the EC modification letter dated 19th April 2010, a survey of the area completed and rope fencing has been provided to demarcate 100-meter strips as greenbelt surrounding the forest land of the mining lease. The rope fencing is also periodically surveyed for its presence. ▪ Green belt of 100 m width is being maintained. LUMPL has entered into agreements dated 6th July 2010 with Nongtrai Village Durbar. ▪ LUMPL has carried out plantations of 45,399 as on 30 September 2024 with survival rate of approximately ~ 77.1 %. LUMPL will ensure plantation of only the Forest Department specified plant species during monsoon seasons.
A (vi)	The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the first order and the second order streams, if any emanating/passing through the mine lease area during the course of mining operation.	▪ LUMPL will continue to ensure that measures shall be in place so that no natural water course and /or water resources shall be obstructed due to mining activities. ▪ Mitigation measures will be implemented in due course of time when stable ground is encountered in the mine thus to ensure that the flow is not obstructed and water stream is conserved and protected of any

		contamination due to the mining operations.
A (vii)	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as haul road, loading and unloading point and all transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Effective safeguard measures to control dust and PM_{10} & $PM_{2.5}$ generation include the following: ▪ Provision of dry drilling with dust extraction system in place or wet drilling of holes; ▪ Use of good quality explosives, implementing CIMFR recommended measures during blasting i.e. provision of proper stemming after charging of explosives and use of delay detonators minimizing dust throw and its spread in ambient air; ▪ Ensuring blasting is done only in the daytime when no strong winds are blowing or there is no overcast or lightening event. ▪ Loading /unloading of limestone from an optimum height and use of sharp teeth for shovel to reduce dust blow; ▪ Avoiding overloading of haul trucks to eliminate spillage during transit on haul road; ▪ Water sprinkling on unpaved areas and haul road during dry wind periods through fixed sprinklers supplemented with water tankers in active mine pit area; ▪ Ensuring speed controls as already practiced to the limit of 20 km/hour on vehicle movements on haul roads; ▪ Preventive maintenance of mine machinery and regular fine-tuning of engines of HEMMs in use to ensure that the emission levels remain within the stipulated norms and maintaining Pollution Under Control (PUC) Certificates; ▪ Provision of water sprinkling, rain gun and fogger system to minimize dust generation while unloading of dumper into the crusher hopper; ▪ Provision of dust extraction system with bag filters in crushing and transfer operations. High efficiency dust collection system will continue to operate to achieve particulate emission to less than 50 mg/Nm^3 through crushers, TB-1 and TB-2 stacks;

		▪ Provision of water sprinkling at transfer points of crushed limestone through chutes before unloading on long belt conveyor to prevent dust emissions; ▪ Provision of close conduit type long belt conveyor provided with water sprinkling for transportation of crushed limestone; ▪ Personnel working in dusty area to be provided protective gears such as dust masks.  **Automatic Water Sprinklers fixed along the median of Haul Road.**   **Water Rain Gun** **Water Fogger at Dump Hopper**
A (viii)	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year pre-monsoon	▪ Three Piezometers installed outside at (i) PWD Road (to the Southwest of the mine), (ii) Near Mine Entry Gate (to the South of the mine); and (iii) Near Transit House (to the Southeast of the mine).

	(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 Shillong, the Central Ground Water Authority and the Regional Director, Central Ground Water Board (CGWB). If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.	• The groundwater levels and ground water quality are being monitored covering all the four seasons. The month wise Piezometers monitored ground water levels and ground water quality are included in **Annexure-IV** of the six monthly Compliance Report for the period April to September 2024.The monitored results are being submitted to CGWA/CGWB on six monthly basis. ▪ It is being ensured that no natural water course and water resources are obstructed due to mining operations.
A (ix)	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	▪ LUMPL has established rainwater harvesting system at two locations by collecting rainwater from roof top of Transit House (residential accommodation) and mine office buildings (each provided with a tank of $20m^3$ capacity). Water harvesting system has been installed at two locations i.e. the roof top of the transit camp area and roof top of the office area. Requisite information was submitted to Regional Director, Central Ground Water Board Guwahati for necessary guidance. ▪ Water being recharged in to recharge pit also being stored in a separate tank for domestic use. ▪ Replacement of old PVC pipes by UPVC pipes on the Transit House buildings and Office buildings completed in the year 2020.

		 **Rain Water Harvesting**
A (x)	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	▪ Qualified doctors based at the site have been providing medical support to the employees and community in the surrounding villages. ▪ Qualified Occupational Health Specialist available at site for regular and periodic medical examination of the workers engaged in the project ▪ Records of periodical medical examinations done in the recent past are being maintained for all employees (including contractor workers) as per the requirement of Mines Rules, 1955.
A (xi)	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 temporary structures to be removed after the completion of the project.	▪ LUMPL is committed to ensure that for any construction labour deployment, necessary infrastructure will be provided within the existing project footprint and facilities including cooking, toilets, package STP, safe drinking water, health care facility etc.
A (xii)	The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM10) and NOx in the ambient air within the impact zone. Peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored	▪ The ambient air quality (AAQ) is being monitored with respect to *PM10, $PM_{2.5}$, SO_2 and NOx* at five locations within the core and buffer zones as recommended by Meghalaya State Pollution Control Board. All parameters that were monitored during the period 1st April to 30th September 2024 remained within the permissible limits.

	periodically. Further, quality of discharged 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, shall also be referred in this regard for its compliance.	▪ Peak particle velocity (i.e. ground vibrations) is being measured with every blast. All the measured values remained less than 5 mm/sec at the distance of 200 m to 300 m, which is well within the standard of 10 mm/sec (for dominant frequency range of 8 to 25 Hz) as prescribed by Directorate General of Mines Safety – DGMS (Tech.) Circular No.7 dated 29 September 1997). ▪ Discharged water quality for TDS, DO, TSS and pH are being monitored by ABNS SCIENTIFIC SERVICES PRIVATE LIMITED Recognized by Meghalaya State Pollution Control Board on monthly basis in their laboratory. The monitored values remained within the prescribed limits. The monthly monitored results are being displayed (on public domain) as per the requirement of MoEF Circular dated 27 May 2009 through: ➢ LED screen for digital display of critical pollutants near the main gate entry to the Nongtrai Limestone Mine; and ➢ Six monthly compliance reports are available on Company's website ".www.lumpl.com".
A (xiii)	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	▪ Noted. ▪ Final Mine Closure Plan with Corpus Fund as approved by IBM shall be submitted to MoEFCC five years in advance of final mine closure for approval.
B - General Conditions		
B (i)	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Shillong, the respective Zonal Office of Central Pollution Control Board	▪ Being complied with ▪ LUMPL is submitting six monthly reports to MoEFCC, Regional Office at Shillong, MSPCB and Zonal office of Central Pollution Control Board, Shillong on regular basis and the same will be continued.

	and 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, Shillong, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	▪ Status of compliance including monitoring results is also being uploaded periodically on the company website "www.lumpl.com".
B (ii)	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the 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 compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Shillong by e-mail.	▪ Being complied with ▪ LUMPL has been submitting annual Environmental Statement as per Form-V under the Rule 14 of the EPA Rules, 1986 to MSPCB. ▪ Environmental Statement for the year ending 31st March 2024 has been submitted to MSPCB with a copy to MoEFCC RO on 28th August 2024.

. In addition, Ministry has decided the following changes to be incorporated in the Environmental clearance letter of even number dated 09.08.2001.				
1.	**FOR**	**READ**		• Complied with. • 6 nos. of Package Sewage Treatment Plants (STPs) and 1 no. of Effluent Treatment Plant (ETP) are operational.
	"A. Specific Conditions (vi) Sewage treatment plant for treating residential and waste from industrial area should be provided."	"A. Specific Conditions (vi) Sewage treatment plant for treating residential and waste from industrial area should be provided. ETP shall also be provided for the workshop and wastewater generated during the mining operation."		
2.	"B. General Conditions (iii) Five ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO2, NOX and CO monitoring. Location of the ambient air quality stations should be decided based on the meteorological data, topographical	"B. General Conditions (iii) Five ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM 10), SO2 and NOx monitoring. Location of the stations should be		▪ Being complied with. ▪ Ambient Air Quality (AAQ) is being monitored with respect to PM_{10}, $PM_{2.5}$, SO_2 and NO_x at five locations within and surrounding areas as selected by MSPCB through their letter dated 24th February 2012. The locations are (i) HEMM Workshop (ii) Near Magazine (iii) Near Phlangkaruh Village (iv) Pyrkan Village and (v) Shella Bazar. ▪ The observed results of ambient air quality parameters remained within the prescribed limits and are being reported to MoEFCC RO, Shillong with a copy to MSPCB as part of the six-monthly compliance reporting.

	features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board."	decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board."		
3.	"B. General Conditions (iv) Data on ambient air quality should be regularly submitted to the Ministry including its Regional Office located at Shillong and the State Pollution Control Board/Central Pollution Control Board once in six months."	"B. General Conditions (iv) Data on ambient air quality RSPM (particulate matter with size less than 10micron i.e., PM 10) SO2 and NOx should be regularly submitted to the Ministry including its Regional Office located at Shillong and the State Pollution Control Board/Central Pollution Control Board once in six		▪ Being done regularly. ▪ Observations have been included in the compliance report.

	months."	
3.	All other conditions of the above referred environmental clearance letter shall remain unchanged.	▪ Noted
4.	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	▪ Noted
5.	Failure to comply with any of the conditions given above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act 1986.	▪ Noted
6.	The above conditions will be enforced inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act 1974 the Air Prevention & Control of Pollution) Act 1981 the Environment (Protection) Act 1986 and the Public Liability Insurance Act 1991 along with their amendments and rules made thereunder.	▪ Noted

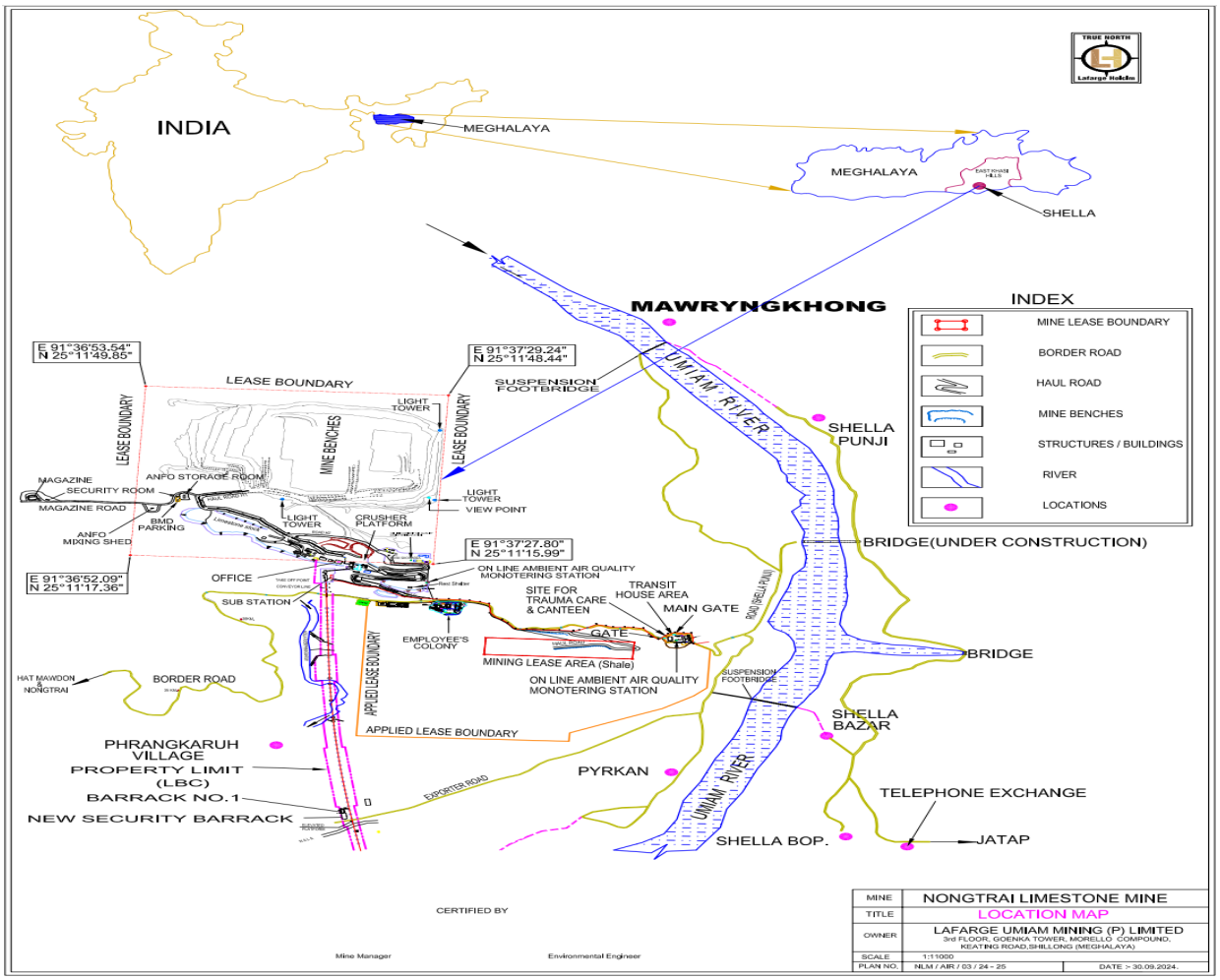
2 ENVIRONMENTAL MONITORING CONDUCTED FROM 1 APRIL TO 30 SEPTEMBER 2024

2.1 INTRODUCTION

Lafarge Umiam Mining Pvt. Ltd. (LUMPL), a company incorporated in India as a 100% subsidiary of LafargeHolcim Bangladesh Ltd., (formerly Lafarge Surma Cement Ltd.) has been operating Nongtrai Limestone Mine located at village Nongtrai, District East Khasi Hills in Meghalaya, India for the purpose of extraction and export of limestone via long belt conveyor to its parent company in Bangladesh for the manufacture of clinker and cement. This report on environmental monitoring for the period from 01 April to 30 September 2024 covers compliance status of conditions of Environmental Clearances J-11015/10/2000-IA. II. (M) dated 9 August 2001 & J-11015/10/2000-IA. II(M) dated 19 April 2010.

The location of Nongtrai Limestone Mine is shown in **Figure 2.1.**

Figure 2.1: Location of Nongtrai Limestone Mine



2.2 ENVIRONMENTAL MONITORING

This six-monthly report covers the environmental monitoring done for the period from 1 April to 30 September 2024 covering the following environmental monitoring results:

i) Micrometeorology
ii) Ambient Air Quality
iii) Water Quality
iv) Water Flow
v) Noise level
vi) Cave Protection

2.3 Micrometeorology

A weather monitoring station has been installed on rooftop of the mine office building of Nongtrai Limestone Mine for recording of hourly temperature, humidity, wind speed, wind direction and rainfall data. The observed meteorology is described in the following subsections.

a) Wind speed and wind direction

The predominant wind direction recorded was N-NE with wind speed varying from 0.0 to 13.9 km per hour during Apr to Jun 2024 and 0.0 to 6.8 km per hour during Jul to Sep 2024. The details wind direction is given in Table 1.

b) Temperature

The maximum and minimum temperature recorded during Apr - Jun 2024 was 46.3ºC and 16.1ºC respectively while during Jul to Sep 2024 the maximum and minimum temperature recorded was 42.5ºC and 23.0ºC respectively (Table No.1). The diurnal variation of temperature is shown in Exhibit No.1 for the month of Apr to Jun 2024 and Exhibit No.2 for the month of Jul to Sep 2024.

c) Humidity:

The maximum and minimum Humidity during Apr to Jun 2024 was 95.2% and 13.0% respectively while during Jul to Sep 2024 the maximum and minimum humidity recorded was 98.3% and 26.1% respectively (Table No.1) The diurnal variation of humidity is shown in Exhibit No.3 for the month of Apr to Jun 2024 and Exhibit No.4 for the month of Jul to Sep 2024.

d) Rainfall:

The total rainfall observed during the period 1 April to 30 September 2024 was 6331.0 mm.

2.4 Ambient Air Quality Monitoring Locations

Ambient air quality monitoring is carried out twice a week at five stations selected as per recommendation of Meghalaya State Pollution Control Board as per their letter no. MPCB/TB-CON-227(Pt-II)/2011-2012/19 24 February 2012. Two monitoring stations are located in the core zone and three in the buffer zone for monitoring of Particulate Matter of size less than 10 micron (PM10), Particulate Matter of size less than 2.5 micron (PM2.5),

Sulphur Dioxide (SO2) and Nitrogen Oxide (NOx) for the study period using Respirable Dust Sampler of Envirotech make. The distance and direction of the ambient air quality monitoring stations are summarized in Table 2.1:

Table 2.1: AAQ Monitoring Locations

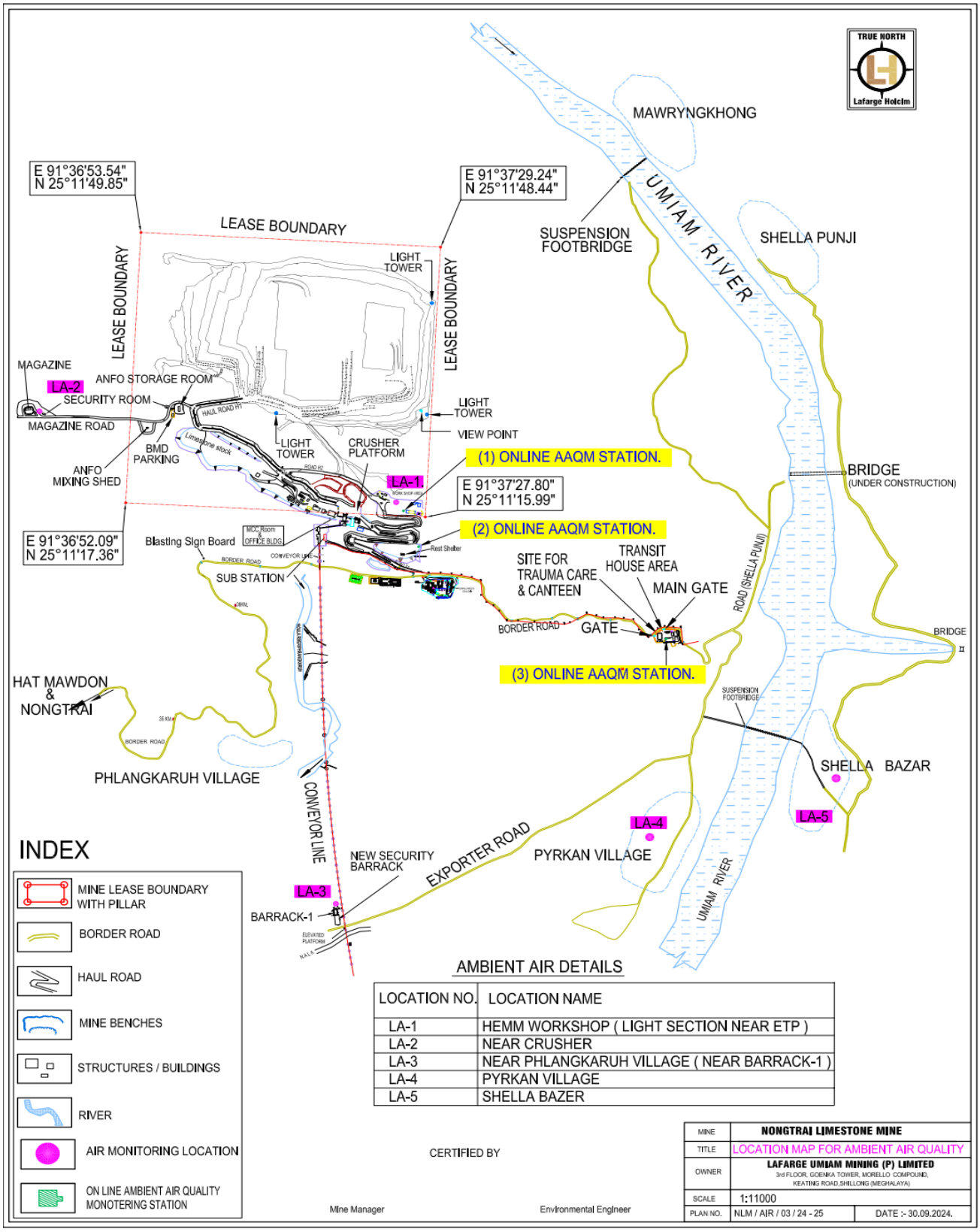
AAQ Monitoring Station Code	Distance and Bearing from Centre of the Mine	AAQ Description
LA–1: HEMM Workshop (Light section near ETP)	0.7 km to Southeast	Respirable Dust Sampler was placed near HEMM Workshop (Light section near ETP) in the quarry to assess the present pollution level in the core zone.
LA –2: Magazine Area	0.40 km to West	Respirable Dust Sampler was placed near Magazine area in the core zone.
LA–3: Phlangkaruh Village (near Security Barrack-I)	1.40 km to South	Respirable Dust Sampler was placed near Phlangkaruh Village (near Security Barrack-I) in the buffer zone.
LA – 4: Pyrkan Village	2.60 km to South Southeast	Respirable Dust Sampler was placed near Pyrkan Village in the buffer zone.
LA –5: Shella Bazaar	3.40 km to Southeast	Respirable Dust Sampler was placed near Shella Bazaar in the buffer zone on the roof top of a House.

The location of five ambient air quality stations is shown in **Figure 2.2.**

Concentrations of PM_{10}, $PM_{2.5}$, SO_2 and NOx recorded at all the five locations are described in **Tables 2 to 11**. All the observed values were found to be below the prescribed NAAQS.

Graphical representation of Ambient Air Quality is shown in **Exhibit Nos. 5 & 6** on the Industrial and mixed areas for the months of Apr to Jun 2024 and Jul to Sep 2024 and **Exhibit Nos. 7 & 8** on the Residential areas for the months Apr to Jun 2024 and Jul to Sep 2024 respectively.

Figure 2.2: Locations of Ambient Air Quality Stations



2.5 Surface Water Quality Monitoring Locations

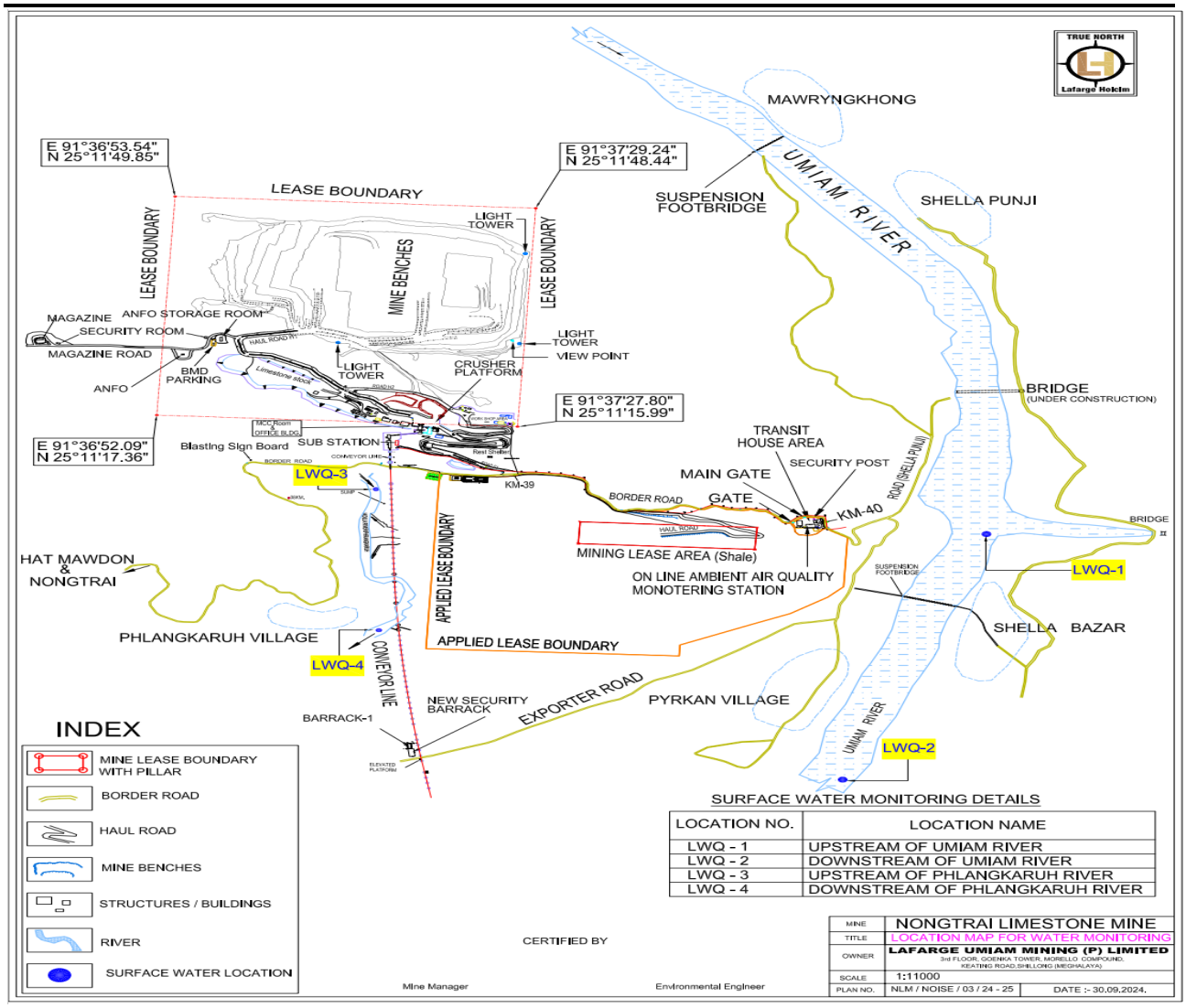
Surface water quality was assessed by collecting once a month water samples from four locations as per the recommendations of Meghalaya State Pollution Control Board vide letter no. MPCB/TB-CON-227(Pt-II)/2011-2012/19. The locations of surface water sampling are described as following:

Table 2.2: Surface Water Quality Monitoring Locations

Surface Water Sampling Location Code	Surface Water Sampling Description
LWQ - 1:	Upstream of Umiam River
LWQ - 2:	Downstream of Umiam River
LWQ - 3:	Upstream of Phlangkaruh River
LWQ - 4:	Downstream of Phlangkaruh River

The surface water quality sampling locations are shown in **Figure 2.3**

Figure 2.3: Surface Water Quality and Flow Measurement Locations



The observed surface water quality is described as following:

LWQ-1 Upstream of Umiam River:

The sample represents the quality of surface water Upstream of Umiam River. The results of samples collected during April to September 2024 are shown in **Table No. 12.**

The water quality parameters were pH 7.8 - 8.1; Sulphates 21.0 – 38.0 mg/l; Total hardness 54.9 – 102.0 mg/l; Fluorides 0.04 – 0.06 mg/l; TDS 102.0 – 156.0 mg/l; Chlorides 12.7 - 25.4mg/l; Nitrates 0.28 – 3.40 mg/l; and Total Coliform were 18.0 – 194.0 MPN/100ml. Heavy metals (As, Cu, Pb, Cd, Ni, & Mn) remained below detectable limits.

LWQ-2 Downstream of Umiam River:

The results of samples collected during April to September 2024 are shown in **Table No. 13.** The concentrations were within the prescribed limit.

The analyzed water quality parameters were pH 7.7 – 8.0; Chlorides 9.4 – 23.0 mg/l; Sulphates 21.5 – 50.3 mg/l; Nitrates 0.4 – 4.6 mg/l; Total hardness 57.3 – 151.2 mg/l; TDS 76.0 - 186.0mg/l and Fluorides were 0.04 - 0.05 mg/l and total coliform were 43.0 - 327.0 MPN/100ml. Heavy metals (As, Cu, Pb, Cd, Ni, & Mn) remained below detectable limits.

LWQ-3 Upstream of Phlangkaruh River:

This sample represents the quality of surface water. The results of samples collected during April to September 2024 are shown in **Table No. 14.**

The analyzed water quality parameters were pH 7.8 - 8.0; Chlorides 19.3 - 39.0 mg/l; Sulphates 8.4 - 44.5 mg/l; Nitrates 0.4 – 2.7 mg/l; Total hardness 28.6- 99.5 mg/l; Fluorides 0.05 - 0.06 mg/l; TDS were 74.0-143.0 mg/l and total coliform were 11.0 – 75.0 MPN/100ml. Heavy metals (As, Cu, Pb, Cd, Ni, & Mn) remained below detectable limits.

LWQ-4 Downstream of Phlangkaruh River:

This sample represents the quality of surface water. The results of April to September 2024 are shown in **Table No. 15.**

The analyzed water quality parameters were pH 7.8 – 8.2; Chlorides 18.3 - 31.0 mg/l; Sulphates 25.3 - 41.0 mg/l; Nitrates 0.30 – 3.80 mg/l; Total hardness 38.2 - 75.5 mg/l; Fluorides 0.04 - 0.06 mg/l; TDS 62.0 – 136.0 mg/l; and Total coliform were 22.0 – 68.0 MPN/100 ml. Heavy metals (As, Cu, Pb, Cd, Ni, & Mn) remained below detectable limits.

2.6 Surface Water Flow Measurement Locations

Surface water flow measurements were carried out once a month at two locations to assess the surface water quantity of the nearby water bodies. The sampling locations are described in Table 2.3 and shown in Figure 2.3.

Table 2.3: Surface Water Flow Measurement Locations

Surface Water Sampling Location Code	Surface Water Sampling Description
LWF - 1:	Downstream of Umiam River (near Shella Bazar)
LWF - 2:	Downstream of Phlangkaruh River near Phlangkaruh Village

Water Flow Measurements were carried out at two locations using water current meter using Bureau of Indian Standards method IS: 1192 (1959). The results and cross section of the water flow measurements are given in **Tables 16-17 e.** From the table, it can be seen that the water flow downstream of Umiam River near the bridge (during fair weather) (LWF-1) was highest followed by Downstream of Phlangkaruh River (LWF2). The results are given below:

SL.NO	Location	Discharge in m^3/hour					
		Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24
1	LWF-1 UMIAM RIVER	25068.96	30512.16	85050.0	111094.2	98128.8	80067.96
2	LWF-2 PHLANGKARUH RIVER	3951.0	5983.2	10209.6	7581.6	8071.2	7434.0

2.7 Noise Levels Monitoring

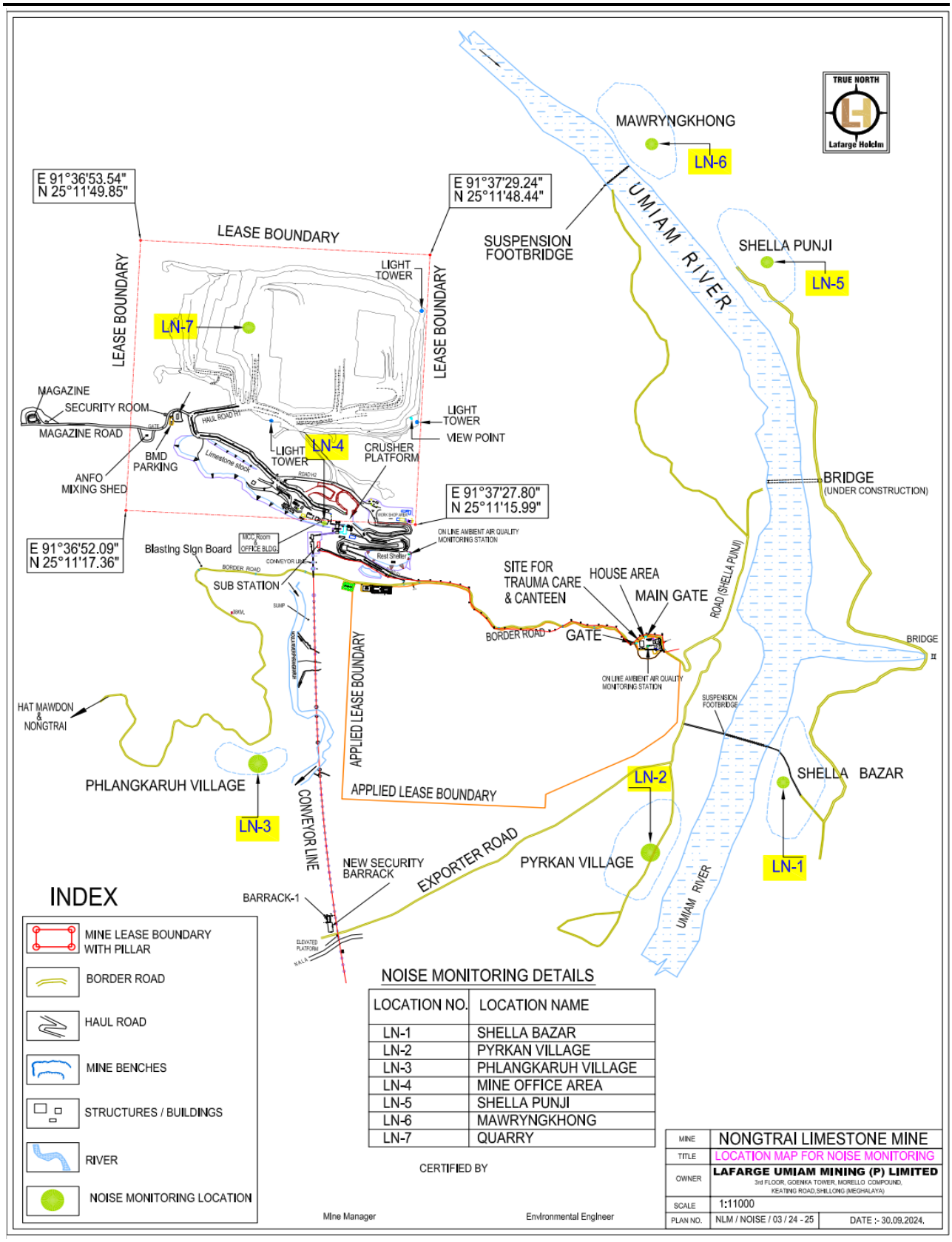
Monitoring of Noise levels was done at six locations during the period April to September 2024 by using an integrating sound level meter (Type II Envirotech). Out-door noise level measurements were made at a height of 1.5 meter above the ground, and away from the sound reflecting sources like walls, buildings. Noise levels were measured at six locations once per month as per description given in **Table 2.4**.

Table 2.4: Noise Levels Monitoring Locations

Noise Levels Monitoring Location Code	Noise Monitoring Location Description
LN-1: Shella Bazar (non-market day)	Noise monitoring was done at Shella Bazaar on non-market day in front of PWD guest house
LN - 2: Pyrkan Village	Noise monitoring was done in Pyrkan Village near Ram Krishna Mission School
LN-3: Phlangkaruh Village	Noise monitoring was done at Phalangkaruh Village
LN- 4: Mine lease area (office area)	Noise monitoring was done to assess the noise levels within the core zone.
LN-5: Shellapunji Village	Noise monitoring was done at Shellapunji village to assess the noise levels.
LN-6: Mawryngkhong Village	Noise monitoring was done at Mawryngkhong Village

The noise levels monitoring locations are shown in **Figure 2.4**.

Figure 2.4: Noise Levels Monitoring Locations



Noise monitoring was carried out at 6 locations during the period April to September 2024**.** The Leq (day and night), Lmax and Lmin were analyzed from the recorded sound level meter (SLM). **Refer to Tables 18 - 29.**

APRIL TO JUNE 2024					
NOISE LEVEL AT THE VILLAGES					
Location	Range in dB(A)	Leq.Value in dB(A) Day time	Leq.Value in dB(A) Night time	Permissible limit Day time	Permissible limit Night
LN 1	44.2-59.6	55.9-56.2	47.2-47.8	65	55
LN 2	41.2-57.4	53.1-54.1	44.4-44.8	55	45
LN 3	41.6-57.9	53.0-53.9	44.4-44.5	55	45
LN 5	41.2-57.1	53.1-53.8	44.1-44.7	55	45
LN 6	41.2-57.8	53.1-54.0	44.3-44.7	55	45
AMBIENT NOISE INSIDE THE QUARRY					
LN 4	45.6-63.8	57.7-59.0	48.6-49.3	75	70
JULY TO SEPTEMBER 2024					
NOISE LEVEL AT THE VILLAGES					
Location	Range in dB(A)	Leq.Value in dB(A) Day time	Leq.Value in dB(A) Night time	Permissible limit Day time	Permissible limit Night
LN 1	43.2-60.1	55.8-56.3	46.3-47.0	65	55
LN 2	41.4-57.9	53.3-54.2	44.0-44.8	55	45
LN 3	41.6-57.6	53.4-54.1	44.6-44.8	55	45
LN 5	41.5-57.4	53.5-53.9	44.2-44.4	55	45
LN 6	41.5-57.2	53.1-54.0	44.5-44.6	55	45
AMBIENT NOISE INSIDE THE QUARRY					
LN 4	43.6-63.5	56.7-58.8	47.9-48.7	75	70

2.8 Vehicular emission:

Vehicular emission monitored was done once during the study period of April to September 2024 for all the Heavy Earth Moving Machines (HEMM) operating in the mine by Meghalaya State Pollution Control Board using Smoke Density Meter.

2.9 Cave Protection

Monitoring of cave was conducted by physical inspection. The entry to the cave has been protected by providing fencing and gate which is locked to prevent unauthorized entry as shown in figure (Refer Plate No.1). Photographs of twin sink holes during the study period also shown in plate No.1 of page No.86.

3 CONCLUSION

AIR ENVIRONMENT:

The ambient air quality monitored at the five locations in the core and buffer zones from 1 April to 30 September 2024 remained well within the permissible limits.

WATER QUALITY:

The surface water quality results indicate that all parameters were well within the permissible limits as prescribed for surface water (IS-2296 Class C).

NOISE ENVIRONMENT:

Noise monitoring results show that noise levels remained well within the prescribed limits.

CAVE PROTECTION:

Based on visual observation, no change in physical appearance was observed on twin sink holes and cave. Cave openings have been protected as shown in (Plate No.1).

4. Tables, Exhibits and Plates

Table No.1

Sl.No	Parameters	Apr to Jun 2024	Jul to Sep 2024
1	**Predominant Wind with direction from**	N-NW	N-NE
2	**Temperature º C**		
	I)Minimum	16.1 º C	23.0 º C
	ii)Maximum	46.3 º C	44.8 º C
	Average Temperature	30.7 º C	30.6 º C
3	**Humidity %**		
	I)Minimum	13.0 %	26.1 %
	ii)Maximum	95.2 %	98.3 %
	Average humidity	68.5 %	79.0 %
4	**Rainfall (mm)**	2883.5 mm	3447.5 mm

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

HEMM Workshop (Light Section Near ETP)

STATION : LA-1

Table :2

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Apr-2024	55.6	23.5	6.5	10.4
5-Apr-2024	56.5	23.6	6.5	10.2
8-Apr-2024	57.2	25.4	6.4	10.8
11-Apr-2024	58.2	26.2	6.2	12.4
14-Apr-2024	54.6	24.2	6.2	9.4
18-Apr-2024	55.7	22.4	6.2	10.2
22-Apr-2024	53.2	21.5	6.2	8.4
25-Apr-2024	56.5	23.8	6.2	10.0
29-Apr-2024	57.8	24.6	6.5	8.8
2-May-2024	55.8	22.4	6.2	8.5
5-May-2024	54.6	24.2	6.2	9.4
8-May-2024	56.2	22.7	6.2	9.5
11-May-2024	54.7	23.2	6.8	10.4
14-May-2024	57.4	24.2	6.8	9.2
18-May-2024	55.7	22.4	6.5	8.4
22-May-2024	57.2	23.6	5.2	9.5
25-May-2024	58.2	26.5	6.2	12.4
29-May-2024	55.6	25.2	6.7	10.3
2-Jun-2024	54.7	23.2	6.8	10.4
5-Jun-2024	56.8	24.5	6.7	9.8
8-Jun-2024	57.2	24.6	5.2	9.5
11-Jun-2024	55.8	23.6	6.7	10.6
14-Jun-2024	49.5	21.2	5.4	6.2
18-Jun-2024	45.2	19.4	4.8	5.8
22-Jun-2024	49.7	19.8	4.5	6.8
25-Jun-2024	51.2	21.8	5.4	7.2
29-Jun-2024	49.7	19.8	4.5	6.8

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observation	27	27	27	27
Arithmetic Mean	54.8	23.2	6.1	9.3
Geometric Mean	54.7	23.2	6.0	9.2
STD. GEO. Devn. (24 hrs)	3.2	1.8	0.7	1.7
Max. Concentration	58.2	26.5	6.8	12.4
Min. Concentration	45.2	19.4	4.5	5.8
98 Percentile values	58.2	26.3	6.8	12.4
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Near Magazine

STATION : LA-2

Table:3

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Apr-2024	53.5	22.4	5.5	8.3
5-Apr-2024	54.6	22.8	5.8	6.2
8-Apr-2024	55.2	23.4	5.7	7.2
11-Apr-2024	56.8	24.2	6.0	10.2
14-Apr-2024	52.5	22.8	5.4	7.8
18-Apr-2024	53.6	21.8	5.9	7.6
22-Apr-2024	51.4	20.5	4.8	6.4
25-Apr-2024	54.6	22.6	5.5	7.4
29-Apr-2024	55.6	22.4	5.8	6.9
2-May-2024	53.7	21.2	5.4	6.8
5-May-2024	52.5	22.8	5.4	7.8
8-May-2024	54.2	22.4	5.2	7.8
11-May-2024	52.8	21.5	5.7	8.5
14-May-2024	55.7	23.5	5.8	8.5
18-May-2024	54.7	21.2	5.8	7.8
22-May-2024	54.7	22.5	4.9	5.8
25-May-2024	56.8	24.2	6.0	10.2
29-May-2024	53.6	23.2	5.4	8.3
2-Jun-2024	52.8	21.5	5.7	8.5
5-Jun-2024	54.2	23.4	6.2	7.8
8-Jun-2024	54.7	22.5	4.9	5.8
11-Jun-2024	53.6	22.6	5.6	8.2
14-Jun-2024	47.8	20.2	5.0	5.9
18-Jun-2024	43.2	18.6	4.6	5.4
22-Jun-2024	47.5	18.2	5.2	7.5
25-Jun-2024	49.6	21.4	5.2	6.8
29-Jun-2024	47.5	18.2	5.2	7.5
	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	52.9	21.9	5.5	7.5
Geometric Mean	52.8	21.9	5.5	7.4
STD. GEO. Devn. (24 hrs)	3.2	1.6	0.4	1.2
Max. Concentration	56.8	24.2	6.2	10.2
Min. Concentration	43.2	18.2	4.6	5.4
98 Percentile values	56.8	24.2	6.1	10.2
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Near Phlangkaruh village (Near Barrack I)

STATION : LA-3

Table :4

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Apr-2024	51.3	22.1	4.8	5.2
5-Apr-2024	52.6	21.5	5.0	6.2
8-Apr-2024	52.8	22.6	5.2	6.5
11-Apr-2024	55.4	23.2	5.2	6.8
14-Apr-2024	50.5	21.7	5.4	6.2
18-Apr-2024	51.5	20.2	5.6	6.5
22-Apr-2024	49.7	19.2	4.8	5.8
25-Apr-2024	52.4	22.5	5.5	6.4
29-Apr-2024	53.5	22.8	5.4	6.5
2-May-2024	52.4	20.3	5.4	6.5
5-May-2024	50.5	21.7	5.4	6.2
8-May-2024	51.2	20.5	5.2	6.0
11-May-2024	50.4	21.3	5.4	6.7
14-May-2024	53.7	22.4	5.6	6.8
18-May-2024	53.2	20.5	5.2	6.1
22-May-2024	52.4	20.2	4.3	5.4
25-May-2024	55.4	23.2	5.2	6.8
29-May-2024	51.2	22.2	5.4	6.5
2-Jun-2024	50.4	21.3	5.4	6.7
5-Jun-2024	52.2	22.4	5.2	6.0
8-Jun-2024	52.4	20.2	4.3	5.4
11-Jun-2024	51.2	22.0	4.9	5.3
14-Jun-2024	45.8	19.7	4.5	5.6
18-Jun-2024	41.2	18.0	4.2	5.2
22-Jun-2024	46.2	17.5	4.8	5.5
25-Jun-2024	47.6	20.5	4.2	5.4
29-Jun-2024	46.2	17.5	4.8	5.5

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	50.9	21.0	5.0	6.1
Geometric Mean	50.8	20.9	5.0	6.0
STD. GEO. Devn. (24 hrs)	3.1	1.6	0.4	0.6
Max. Concentration	55.4	23.2	5.6	6.8
Min. Concentration	41.2	17.5	4.2	5.2
98 Percentile values	55.4	23.2	5.6	6.8
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Pyrkan village

STATION : LA-4

Table:5

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Apr-2024	49.3	21.2	4.2	5.5
5-Apr-2024	50.2	21.2	3.6	4.9
8-Apr-2024	50.4	20.5	3.6	5.2
11-Apr-2024	51.4	21.2	4.2	5.5
14-Apr-2024	48.6	20.7	3.8	5.4
18-Apr-2024	49.8	20.1	4.7	6.4
22-Apr-2024	47.6	19.8	3.8	4.2
25-Apr-2024	50.7	20.8	3.6	4.8
29-Apr-2024	51.4	21.2	4.8	5.7
2-May-2024	50.7	19.5	3.8	5.6
5-May-2024	48.6	20.7	3.8	5.4
8-May-2024	50.6	20.4	3.5	5.6
11-May-2024	48.7	20.2	3.4	5.8
14-May-2024	51.7	20.5	4.5	5.4
18-May-2024	51.7	19.8	3.5	5.7
22-May-2024	50.2	19.7	3.2	4.4
25-May-2024	51.4	21.2	4.2	5.5
29-May-2024	49.7	21.2	3.6	5.3
2-Jun-2024	48.7	20.2	3.4	5.8
5-Jun-2024	50.4	22.2	4.0	5.2
8-Jun-2024	50.2	19.7	3.2	4.4
11-Jun-2024	49.2	21.0	4.3	5.4
14-Jun-2024	43.2	18.8	3.0	4.3
18-Jun-2024	39.5	17.8	2.8	4.0
22-Jun-2024	43.5	16.5	2.5	4.2
25-Jun-2024	45.2	19.8	4.4	5.2
29-Jun-2024	43.5	16.5	2.5	4.2

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	48.7	20.1	3.7	5.1
Geometric Mean	48.6	20.0	3.6	5.1
STD. GEO. Devn. (24 hrs)	3.1	1.4	0.6	0.6
Max. Concentration	51.7	22.2	4.8	6.4
Min. Concentration	39.5	16.5	2.5	4.0
98 Percentile values	51.7	21.7	4.7	6.1
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Shella Bazar

STATION : LA-5

Table:6

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Apr-2024	50.6	22.3	4.2	5.5
5-Apr-2024	49.5	20.6	4.4	5.6
8-Apr-2024	51.8	21.5	4.0	4.8
11-Apr-2024	52.8	22.4	4.2	5.4
14-Apr-2024	50.2	21.5	4.2	5.6
18-Apr-2024	50.6	20.8	3.7	5.2
22-Apr-2024	48.5	19.7	3.6	4.8
25-Apr-2024	51.7	21.2	4.5	5.4
29-Apr-2024	52.4	22.2	4.5	5.8
2-May-2024	51.4	20.8	3.8	5.2
5-May-2024	50.2	21.5	4.2	5.6
8-May-2024	51.8	21.6	4.2	5.2
11-May-2024	49.7	19.4	4.5	5.6
14-May-2024	53.2	21.5	4.5	5.8
18-May-2024	52.4	21.2	4.5	5.4
22-May-2024	51.7	18.6	3.2	4.8
25-May-2024	52.8	22.4	4.2	5.4
29-May-2024	51.7	21.8	3.5	5.4
2-Jun-2024	49.7	19.4	4.5	5.6
5-Jun-2024	51.6	22.6	4.6	5.4
8-Jun-2024	51.7	18.6	3.2	4.8
11-Jun-2024	50.7	22.5	4.3	5.5
14-Jun-2024	45.4	19.6	3.4	4.6
18-Jun-2024	40.5	17.9	3.0	4.2
22-Jun-2024	44.7	18.2	3.8	4.7
25-Jun-2024	46.8	20.2	3.8	4.9
29-Jun-2024	44.7	18.2	3.8	4.7

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	50.0	20.7	4.0	5.2
Geometric Mean	49.9	20.6	4.0	5.2
STD. GEO. Devn. (24 hrs)	3.0	1.5	0.5	0.4
Max. Concentration	53.2	22.6	4.6	5.8
Min. Concentration	40.5	17.9	3.0	4.2
98 Percentile values	53.0	22.5	4.5	5.8
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

HEMM Workshop (Light Section Near ETP)

STATION : LA-1

Table :7

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Jul-2024	44.7	16.5	4.2	6.2
5-Jul-2024	46.8	18.6	5.2	6.8
8-Jul-2024	48.2	19.8	4.5	6.8
11-Jul-2024	45.4	16.5	4.2	6.4
14-Jul-2024	49.7	20.5	5.0	5.9
18-Jul-2024	51.2	21.5	5.6	6.8
22-Jul-2024	51.7	21.7	5.4	7.2
25-Jul-2024	52.5	23.6	6.8	10.5
29-Jul-2024	50.4	20.2	5.3	8.4
2-Aug-2024	51.5	19.5	5.4	7.2
5-Aug-2024	53.2	23.8	6.5	9.2
8-Aug-2024	52.8	22.4	6.2	8.5
11-Aug-2024	49.7	20.4	5.6	6.4
14-Aug-2024	51.7	21.5	5.6	6.8
18-Aug-2024	52.8	22.4	6.2	8.5
22-Aug-2024	50.2	20.4	4.5	8.6
25-Aug-2024	53.2	22.8	6.5	9.2
29-Aug-2024	55.4	23.6	6.6	10.5
2-Sep-2024	53.2	22.8	6.5	9.2
5-Sep-2024	55.4	22.2	6.1	8.5
8-Sep-2024	56.5	23.4	6.3	9.8
11-Sep-2024	57.2	24.6	5.2	9.5
14-Sep-2024	57.6	24.5	6.2	10.5
18-Sep-2024	58.2	26.2	6.2	12.4
22-Sep-2024	56.7	24.5	6.6	10.5
25-Sep-2024	55.6	22.5	7.2	9.5
29-Sep-2024	54.6	24.2	6.2	9.4

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observation	27	27	27	27
Arithmetic Mean	52.4	21.9	5.8	8.5
Geometric Mean	52.3	21.7	5.7	8.3
STD. GEO. Devn. (24 hrs)	3.6	2.4	0.8	1.7
Max. Concentration	58.2	26.2	7.2	12.4
Min. Concentration	44.7	16.5	4.2	5.9
98 Percentile values	57.9	25.4	7.0	11.4
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Near Magazine

STATION : LA-2

Table:8

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Jul-2024	42.5	16.0	4.2	5.2
5-Jul-2024	44.5	17.5	4.8	6.2
8-Jul-2024	47.5	18.2	5.2	7.5
11-Jul-2024	43.6	16.2	4.3	5.5
14-Jul-2024	46.5	19.8	4.8	5.6
18-Jul-2024	49.5	20.8	5.2	6.8
22-Jul-2024	49.6	21.4	5.2	7.4
25-Jul-2024	50.2	21.8	5.8	8.7
29-Jul-2024	48.7	19.8	4.8	6.5
2-Aug-2024	49.4	18.2	4.5	6.8
5-Aug-2024	51.7	20.4	5.5	8.2
8-Aug-2024	50.7	21.8	5.4	7.8
11-Aug-2024	47.8	19.8	4.8	5.6
14-Aug-2024	49.5	20.8	5.2	7.4
18-Aug-2024	50.7	21.8	5.4	7.8
22-Aug-2024	48.6	19.2	4.1	7.6
25-Aug-2024	51.7	20.4	5.5	8.2
29-Aug-2024	53.4	22.5	5.6	8.4
2-Sep-2024	51.7	20.4	5.5	8.2
5-Sep-2024	53.5	20.2	5.2	6.1
8-Sep-2024	54.2	22.2	5.6	6.8
11-Sep-2024	54.7	22.5	4.9	5.8
14-Sep-2024	55.6	23.4	5.8	7.9
18-Sep-2024	56.8	24.2	6.0	10.2
22-Sep-2024	54.5	23.8	5.8	8.7
25-Sep-2024	53.5	20.2	6.2	7.8
29-Sep-2024	52.5	22.8	5.4	7.8

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	50.5	20.6	5.2	7.3
Geometric Mean	50.4	20.5	5.2	7.2
STD. GEO. Devn. (24 hrs)	3.6	2.1	0.5	1.2
Max. Concentration	56.8	24.2	6.2	10.2
Min. Concentration	42.5	16.0	4.1	5.2
98 Percentile values	56.2	24.0	6.1	9.4
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Near Phlangkaruh village (Near Barrack I)

STATION : LA-3

Table :9

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Jul-2024	41.5	15.8	4.2	5.0
5-Jul-2024	43.6	16.8	4.0	5.2
8-Jul-2024	46.2	17.5	4.8	5.5
11-Jul-2024	44.2	16.1	4.2	5.2
14-Jul-2024	44.8	18.6	4.5	5.4
18-Jul-2024	47.2	20.5	4.2	5.4
22-Jul-2024	47.6	21.2	5.0	5.6
25-Jul-2024	48.7	21.7	5.6	6.9
29-Jul-2024	46.2	18.6	4.9	5.9
2-Aug-2024	47.9	17.5	4.7	6.2
5-Aug-2024	48.2	20.7	5.2	6.5
8-Aug-2024	48.7	21.2	5.2	5.8
11-Aug-2024	45.6	19.2	4.5	5.7
14-Aug-2024	47.6	21.2	5.0	5.6
18-Aug-2024	48.7	21.2	5.2	5.8
22-Aug-2024	47.6	18.4	4.2	8.2
25-Aug-2024	48.2	20.7	5.2	6.5
29-Aug-2024	51.7	22.1	5.2	6.0
2-Sep-2024	48.2	20.7	5.2	6.5
5-Sep-2024	51.5	19.8	4.7	5.8
8-Sep-2024	52.4	19.8	4.9	6.5
11-Sep-2024	52.4	20.2	4.3	5.4
14-Sep-2024	53.5	22.2	5.5	6.5
18-Sep-2024	55.4	23.2	5.2	6.8
22-Sep-2024	52.1	22.2	5.4	6.0
25-Sep-2024	51.4	20.2	5.3	6.5
29-Sep-2024	50.5	21.7	5.4	6.2

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	48.6	20.0	4.9	6.0
Geometric Mean	48.5	19.9	4.9	6.0
STD. GEO. Devn. (24 hrs)	3.3	2.0	0.5	0.7
Max. Concentration	55.4	23.2	5.6	8.2
Min. Concentration	41.5	15.8	4.0	5.0
98 Percentile values	54.4	22.7	5.5	7.5
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Pyrkan village

STATION : LA-4

Table:10

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Jul-2024	38.6	15.5	2.8	3.7
5-Jul-2024	40.2	16.4	2.6	4.8
8-Jul-2024	43.5	16.5	2.5	4.2
11-Jul-2024	39.8	15.8	2.2	3.9
14-Jul-2024	42.8	19.2	3.2	4.5
18-Jul-2024	44.7	19.4	3.2	4.5
22-Jul-2024	45.2	19.8	4.4	5.2
25-Jul-2024	46.4	20.5	3.4	5.9
29-Jul-2024	43.7	16.5	3.8	4.7
2-Aug-2024	45.4	16.2	3.5	5.4
5-Aug-2024	45.8	19.7	3.2	5.5
8-Aug-2024	48.2	19.8	3.5	5.2
11-Aug-2024	43.2	19.0	3.0	4.4
14-Aug-2024	44.7	19.4	3.2	4.5
18-Aug-2024	48.2	19.8	3.5	5.2
22-Aug-2024	44.6	17.2	3.2	5.7
25-Aug-2024	45.8	19.7	3.2	5.5
29-Aug-2024	48.5	20.2	3.8	4.7
2-Sep-2024	45.8	19.7	3.2	5.5
5-Sep-2024	49.7	20.2	4.3	5.6
8-Sep-2024	50.5	20.2	4.1	5.4
11-Sep-2024	50.2	19.7	3.2	4.4
14-Sep-2024	51.2	21.8	3.8	4.8
18-Sep-2024	51.4	21.2	4.2	5.5
22-Sep-2024	49.8	21.2	4.2	5.3
25-Sep-2024	49.7	20.2	3.8	5.6
29-Sep-2024	48.6	20.7	3.8	5.4

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	46.2	19.1	3.4	5.0
Geometric Mean	46.0	19.0	3.4	5.0
STD. GEO. Devn. (24 hrs)	3.5	1.8	0.6	0.6
Max. Concentration	51.4	21.8	4.4	5.9
Min. Concentration	38.6	15.5	2.2	3.7
98 Percentile values	51.3	21.5	4.3	5.8
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

LAFARGE UMIAM MINING PVT. LTD.

AMBIENT AIR QUALITY DATA

Shella Bazar

STATION : LA-5

Table:11

DATE	24 HOURLY			
	PM_{10}	$PM_{2.5}$	SO_2	NOx
2-Jul-2024	40.7	15.3	3.4	4.5
5-Jul-2024	43.5	16.8	3.2	5.2
8-Jul-2024	44.7	18.2	3.8	4.7
11-Jul-2024	41.7	16.2	3.4	4.7
14-Jul-2024	43.5	19.5	3.4	4.5
18-Jul-2024	45.9	20.2	3.6	4.8
22-Jul-2024	46.8	20.4	3.8	4.9
25-Jul-2024	49.5	20.2	4.5	5.9
29-Jul-2024	46.5	17.2	3.2	4.7
2-Aug-2024	46.2	18.6	3.5	5.8
5-Aug-2024	47.5	19.8	4.2	5.5
8-Aug-2024	50.2	20.4	3.5	4.8
11-Aug-2024	44.8	19.4	3.4	4.8
14-Aug-2024	45.9	20.2	3.6	4.8
18-Aug-2024	50.2	20.4	3.5	4.8
22-Aug-2024	45.6	17.2	3.5	5.8
25-Aug-2024	47.5	19.8	4.2	5.5
29-Aug-2024	50.4	22.2	4.2	5.4
2-Sep-2024	47.5	19.8	4.2	5.5
5-Sep-2024	51.2	21.3	4.2	5.3
8-Sep-2024	51.2	21.5	3.8	5.1
11-Sep-2024	51.7	18.6	3.2	4.8
14-Sep-2024	52.4	22.0	4.2	5.2
18-Sep-2024	52.8	22.4	4.2	5.4
22-Sep-2024	50.7	22.4	4.0	5.2
25-Sep-2024	51.8	21.7	3.8	4.5
29-Sep-2024	50.2	21.5	4.2	5.6

	PM_{10}	$PM_{2.5}$	SO_2	NOx
Number of observations	27	27	27	27
Arithmetic Mean	47.8	19.7	3.8	5.1
Geometric Mean	47.7	19.7	3.7	5.1
STD. GEO. Devn. (24 hrs)	3.4	1.9	0.4	0.4
Max. Concentration	52.8	22.4	4.5	5.9
Min. Concentration	40.7	15.3	3.2	4.5
98 Percentile values	52.6	22.4	4.3	5.8
Detection Limit ($\mu g/m^3$)				
NOTE:	ALL VALUES ARE IN $\mu g/m^3$			

Permissible Limit ($\mu g/m^3$)	
PM 10	100 µg/m3
PM 2.5	60 µg/m3
Sox	80 µg/m3
Nox	80 µg/m3

SURFACE WATER QUALITY DATA

Project : Lafarage Umiam Mining Pvt. Ltd.
State : Meghalaya
Code : LWQ-1
Sampling Location :Up Stream of Umiam River

Table:12

Sl. No.	Parameter	Results						Standard IS - 2296 Class C
		Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	
		27-Apr-24	29-May-24	18-Jun-24	25-Jul-24	29-Aug-24	21-Sep-24	
1	**Temperature (0°C) Air-Water**	-	-	-	-	-	-	
2	Colour (Hazen Units)	-	-	-	-	-	-	300.00
3	pH	7.8	7.9	8.1	7.9	7.9	7.8	6.5-8.5
4	Electrical Conductivity (µmhos/cm)	238.0	225.0	220.0	240.0	197.9	187.2	
5	Turbidity (NTU)	3.7	4.2	4.2	2.9	4.4	3.8	
6	Dissolve Oxygen(mg/l)	6.4	6.8	7.2	6.4	6.2	3.2	4.00
7	Biochemical Oxygen Demand(mg/l)	2.60	2.40	3.00	5.00	2.90	6.60	3.00
8	Chemical Oxygen Demand (mg/l)	13.20	12.00	11.00	16.00	10.50	12.80	
9	Total Dissolve Solids (mg/l)	156.00	118.00	117.00	116.00	102.00	122.00	1500.00
10	Total Suspended Solids	16.00	20.00	16.00	18.00	18.00	10.00	100.00
11	Total hardness (mg/l)	88.60	62.10	61.53	54.90	102.00	82.00	
12	Chlorides as Cl (mg/l)	25.40	21.90	21.50	19.20	12.70	18.60	600.00
13	Alkalinity (mg/l)	72.50	116.00	76.00	57.25	53.50	54.60	
14	Calcium as Ca (mg/l)	27.80	32.53	34.19	31.84	31.10	23.60	
15	Sulphates SO4(mg/l)	36.60	36.60	28.50	28.50	38.00	21.00	400.00
16	Sulphides (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
17	Nitrate (mg/l)	0.88	0.82	0.69	0.28	2.04	3.40	50.00
18	Nitrite (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
19	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
20	Ammonia Nitrogen (mg/l)	0.15	0.13	0.17	0.08	0.18	0.12	
21	Arsenic as As (mg/l)	BDL	BDL	BDL.	BDL	BDL	BDL	0.20
22	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.05
23	Iron as Fe (mg/l)	0.22	0.21	0.20	0.22	0.22	0.19	0.50
24	Fluoride as F (mg/l)	0.04	0.04	0.06	0.04	0.04	BDL	1.50
25	Lead as Pb (mg/l)	BDL	BDL	BDL.	BDL	BDL	BDL	0.10
26	Copper as Cu (mg/l)	BDL	BDL	BDL.	BDL	BDL	BDL	1.50
27	Zinc as Zn (mg/l)	1.140	0.750	0.24	0.56	0.13	0.280	15.00
28	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.01
29	Sodium (mg/l)	10.40	15.00	11.00	20.00	6.30	4.60	
30	Magnessium (mg/l)	12.30	7.30	5.92	8.74	6.00	3.40	
31	Manganese (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
32	Phosphate (mg/l)	3.220	2.540	1.86	0.440	2.150	1.800	
33	Potassium (mg/l)	2.30	3.00	1.80	2.50	2.70	0.80	
	Microbiological Parameters							
1	Total Coliform (MPN/100 ml)	133.00	28.00	30.00	18.00	112.00	194.00	5000.00

Remarks:- Analysis is done by ABNS Scientific Services Private Limited.
Recognized by Meghalaya State Pollution Control Board, refer to Annexure II
BDL :- Below Detection Limit

SURFACE WATER QUALITY DATA

Project : Lafarage Umiam Mining Pvt. Ltd.
State : Meghalaya
Code : LWQ-2
Sampling Location :Down Stream of Umiam River

Table:13

Sl. No.	Parameter	Results						Standard IS - 2296 Class C
		Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	
		27-Apr-24	29-May-24	18-Jun-24	25-Jul-24	29-Aug-24	21-Sep-24	
1	**Temperature (0^{o}C) Air-Water**	-	-	-	-	-	-	
2	Colour (Hazen Units)	-	-	-	-	-	-	300.00
3	pH	7.7	7.8	8.0	8.0	8.0	8.0	6.5-8.5
4	Electrical Conductivity (µmhos/cm)	210.0	185.0	176.0	196.0	282.0	272.0	
5	Turbidity (NTU)	10.5	4.16	3.5	3.1	8.3	7.4	
6	Dissolve Oxygen(mg/l)	6.80	6.20	6.40	6.20	6.60	5.80	4.00
7	Biochemical Oxygen Demand(mg/l)	3.10	3.00	2.20	4.80	2.10	2.20	3.00
8	Chemical Oxygen Demand (mg/l)	17.50	16.00	18.00	10.00	6.80	9.00	
9	Total Dissolve Solids (mg/l)	173.00	89.00	124.00	76.00	156.00	186.00	1500.00
10	Total Suspended Solids	15.00	18.00	18.00	16.00	16.00	18.00	100.00
11	Total hardness (mg/l)	118.40	64.18	64.19	57.28	161.20	122.80	
12	Chlorides as Cl (mg/l)	17.30	21.00	23.00	18.50	9.80	9.40	600.00
13	Alkalinity (mg/l)	59.40	94.00	54.82	63.15	99.00	98.00	
14	Calcium as Ca (mg/l)	23.40	28.16	24.95	24.93	43.30	48.20	
15	Sulphate as SO4(mg/l)	50.30	27.50	21.70	21.50	43.00	23.00	400.00
16	Sulphides (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
17	Nitrate (mg/l)	3.31	0.57	0.78	0.41	2.23	4.60	50.00
18	Nitrite (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
19	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
20	Ammonia Nitrogen (mg/l)	0.25	0.09	0.21	0.13	0.13	0.18	
21	Arsenic as As (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.20
22	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.05
23	Iron as Fe (mg/l)	0.21	0.20	0.21	0.21	0.21	0.18	0.50
24	Fluoride as F (mg/l)	0.05	0.05	0.05	0.05	0.05	0.04	1.50
25	Lead as Pb (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.10
26	Copper as Cu (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	1.50
27	Zinc as Zn (mg/l)	0.270	0.93	0.370	0.280	0.270	0.270	15.00
28	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.01
29	Sodium (mg/l)	11.60	14.00	9.00	18.00	5.50	5.80	
30	Magnesium (mg/l)	6.40	4.73	3.07	7.62	12.90	9.54	
31	Manganese (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
32	Phosphate (mg/l)	4.160	1.82	0.370	0.510	0.160	0.240	
33	Potassium (mg/l)	2.60	4.20	2.20	2.70	1.60	1.20	
	Microbiological Parameters							
1	Total Coliform (MPN/100 ml)	327.0	21.00	12.0	14.0	85.0	42.0	5000.0

Remarks:- Analysis is done by ABNS Scientific Services Private Limited.
Recognized by Meghalaya State Pollution Control Board, refer to Annexure II
BDL :- Below Detection Limit

SURFACE WATER QUALITY DATA

Project : Lafarage Umiam Mining Pvt. Ltd.
State : Meghalaya
Code : LWQ-3
Sampling Location :Up Stream of Phlangkaruh River

Table:14

Sl. No.	Parameter	Results						Standard IS - 2296 Class C
		Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	
		27-Apr-24	29-May-24	18-Jun-24	25-Jul-24	29-Aug-24	21-Sep-24	
1	**Temperature (0°C) Air-Water**	-	-	-	-	-	-	
2	Colour (Hazen Units)	-	-	-	-	-	-	300.00
3	pH	7.9	7.8	7.9	8.0	8.0	7.8	6.5-8.5
4	Electrical Conductivity (µmhos/cm)	184.00	196.00	185.00	184.00	217.00	217.00	
5	Turbidity (NTU)	6.50	3.80	4.20	2.80	3.20	3.60	
6	Disslove Oxygen(mg/l)	5.60	5.80	5.60	7.20	4.90	4.80	4.00
7	Biochemical Oxygen Demand(mg/l)	2.80	2.20	5.40	4.60	2.30	2.40	3.00
8	Chemical Oxygen Demand (mg/l)	9.80	14.00	20.00	13.00	8.70	10.60	
9	Total Dissolve Solids (mg/l)	127.00	112.00	102.00	74.00	134.00	143.00	1500.00
10	Total Suspended Solids	14.00	16.00	16.00	18.00	18.00	24.00	100.00
11	Total hardness (mg/l)	99.50	70.25	42.82	45.18	28.60	58.40	
12	Chlorides as Cl (mg/l)	30.60	19.50	19.30	23.70	39.00	23.00	600.00
13	Alkalinity (mg/l)	67.20	78.12	65.10	102.44	54.40	69.60	
14	Calcium as Ca (mg/l)	33.60	35.72	19.76	26.75	20.20	18.60	
15	Sulphate as SO4(mg/l)	27.60	32.00	26.40	23.40	44.50	8.40	400.00
16	Sulphides (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
17	Nitrate (mg/l)	2.74	0.66	0.42	0.64	0.38	1.02	50.00
18	Nitrite (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
19	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
20	Ammonia Nitrogen (mg/l)	0.44	0.11	0.25	0.12	0.22	BDL	
21	Arsenic as As (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.20
22	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.05
23	Iron as Fe (mg/l)	0.20	0.22	0.21	0.21	0.21	0.09	0.50
24	Fluoride as F (mg/l)	0.06	0.05	0.05	0.06	0.06	BDL	1.50
25	Lead as Pb (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.10
26	Copper as Cu (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	1.50
27	Zinc as Zn (mg/l)	1.25	0.81	0.89	0.19	BDL	BDL	15.00
28	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.01
29	Sodium (mg/l)	8.50	12.00	17.00	24.00	7.20	6.00	
30	Magnessium (mg/l)	15.50	5.03	4.07	6.52	10.90	6.20	
31	Manganese (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
32	Phosphate (mg/l)	1.270	2.19	0.520	0.740	1.860	0.800	
33	Potassium (mg/l)	3.10	2.00	2.80	2.40	0.18	1.90	
	Microbiological Parameters							
1	Total Coliform (MPN/100 ml)	75.00	46.00	32.00	11.00	31.00	N.D	5000.00

Remarks:- Analysis is done by ABNS Scientific Services Private Limited.
Recognized by Meghalaya State Pollution Control Board, refer to Annexure II
BDL :- Below Detection Limit

SURFACE WATER QUALITY DATA

Project : Lafarage Umiam Mining Pvt. Ltd.

State : Meghalaya

Code : LWQ-4

Sampling Location :Down Stream of Phlangkaruh River

Table:15

Sl. No.	Parameter	Results						Standard IS - 2296 Class C
		Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	Date of Collection	
		19-Oct-24	29-May-24	18-Jun-24	25-Jul-24	29-Aug-24	21-Sep-24	
1	**Temperature (0°C) Air-Water**	-	-	-	-	-	-	
2	Colour (Hazen Units)	-	-	-	-	-	-	300.00
3	pH	7.8	7.9	7.8	8.1	8.1	8.2	6.5-8.5
4	Electrical Conductivity (µmhos/cm)	193.0	225.0	235.0	175.0	157.0	152.0	
5	Turbidity (NTU)	8.2	3.9	3.7	3.5	6.5	6.5	
6	Disslove Oxygen(mg/l)	5.80	6.80	5.80	6.80	7.00	6.20	4.00
7	Biochemical Oxygen Demand(mg/l)	4.00	3.00	4.20	5.20	3.60	4.80	3.00
8	Chemical Oxygen Demand (mg/l)	22.30	16.00	14.00	16.00	14.20	18.00	
9	Total Dissolve Solids (mg/l)	136.00	92.00	134.00	62.00	86.40	89.00	1500.00
10	Total Suspended Solids	12.00	14.00	16.00	18.00	18.00	25.00	100.00
11	Total hardness (mg/l)	75.50	58.46	38.16	39.42	50.60	43.20	
12	Chlorides as Cl (mg/l)	27.70	18.30	31.00	19.70	21.70	20.60	600.00
13	Alkalinity (mg/l)	80.30	82.52	85.71	59.16	65.50	62.50	
14	Calcium as Ca (mg/l)	41.70	42.76	22.05	25.19	23.80	20.80	
15	Sulphate as SO4(mg/l)	27.00	29.00	25.30	41.00	38.80	29.60	400.00
16	Sulphides (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
17	Nitrate (mg/l)	1.93	0.28	0.59	0.73	1.77	3.84	50.00
18	Nitrite (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
19	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
20	Ammonia Nitrogen (mg/l)	0.82	0.16	0.19	0.17	0.53	BDL	
21	Arsenic as As (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.20
22	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.05
23	Iron as Fe (mg/l)	0.21	0.21	0.22	0.20	0.20	0.23	0.50
24	Fluoride as F (mg/l)	0.05	0.06	0.04	0.05	0.05	BDL	1.50
25	Lead as Pb (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.10
26	Copper as Cu (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	1.50
27	Zinc as Zn (mg/l)	BDL	0.91	0.74	0.64	BDL	BDL	15.00
28	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.01
29	Sodium (mg/l)	15.60	11.00	14.00	16.00	10.80	9.40	
30	Magnessium (mg/l)	17.20	6.21	2.97	5.03	4.70	3.40	
31	Manganese (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	
32	Phosphate (mg/l)	5.42	3.10	0.93	0.680	2.860	0.820	
33	Potassium (mg/l)	3.70	2.40	3.20	5.00	2.20	1.00	
	Microbiological Parameters							
1	Total Coliform (MPN/100 ml)	35.00	25.00	57.0	22.0	49.0	68.0	5000.00

Remarks:- Analysis is done by ABNS Scientific Services Private Limited.
Recognized by Meghalaya State Pollution Control Board, refer to Annexure II
BDL :- Below Detection Limit

WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. Ltd State : Meghalaya

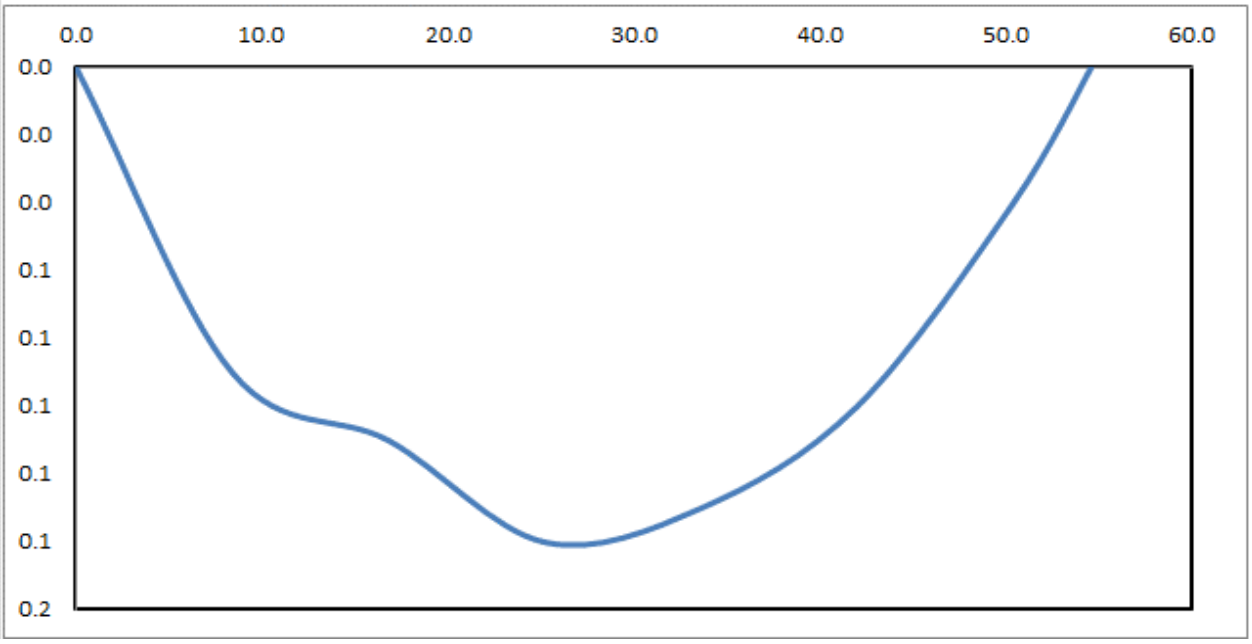
Code : LWF-1 Sampling Loc: Down stream of Umiam River near Temporary Bridge (during fair weather)

Date of Measurement :05.04.2024

Table:No. 16

Sl. No.	Distance from Initial Point	Width interval (m)	Depth of nalla (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0.0	0.0	0.0	0.0	0.0	0.0
2	8.40	8.40	0.80	0.09	3.36	0.15
3	16.80	8.40	1.40	0.11	9.24	0.92
4	25.20	8.40	2.00	0.14	14.28	1.79
5	33.60	8.40	1.70	0.13	15.54	2.10
6	42.00	8.40	1.20	0.10	12.18	1.40
7	50.40	8.40	0.70	0.04	7.98	0.56
8	54.60	4.20	0.40	0.00	2.31	0.05
					Total	6.96
					Discharge m^3/hr =25068.96	

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM UMIAM RIVER TOP OF THE BRIDGE (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. Ltd State : Meghalaya

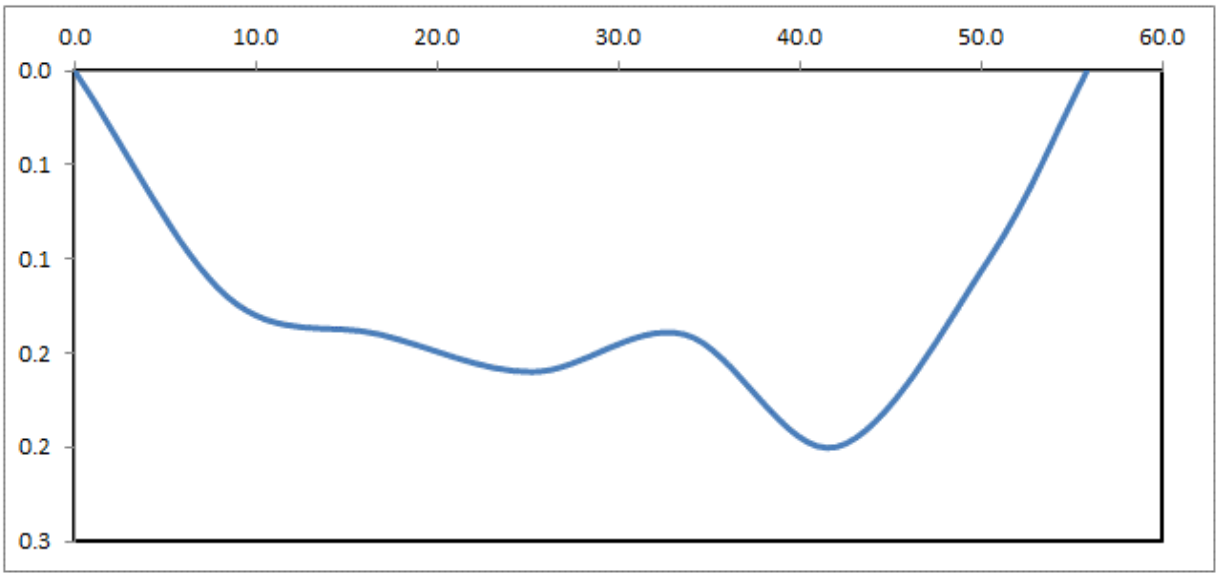
Code : LWF-1 Sampling Loca Down stream of Umiam River
Top of the bridge
(during fair weather)

Date of Measurement :14.05.2024

Table No: 16 a

Sl. No.	Distance from Initial Point	Width interval (m)	Depth of nalla (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0.0	0.0	0.0	0.0	0.0	0.0
2	8.40	8.40	1.00	0.12	4.20	0.25
3	16.80	8.40	1.20	0.14	9.24	1.20
4	25.20	8.40	1.80	0.16	12.60	1.89
5	33.60	8.40	1.40	0.14	13.44	2.02
6	42.00	8.40	1.20	0.20	10.92	1.86
7	50.40	8.40	0.80	0.10	8.40	1.26
8	55.80	5.40	0.00	0.00	2.48	0.12
					Total	8.48
					Discharge m^3/hr =30512.16	

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM UMIAM RIVER TOP OF THE BRIDGE (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. Ltd State : Meghalaya

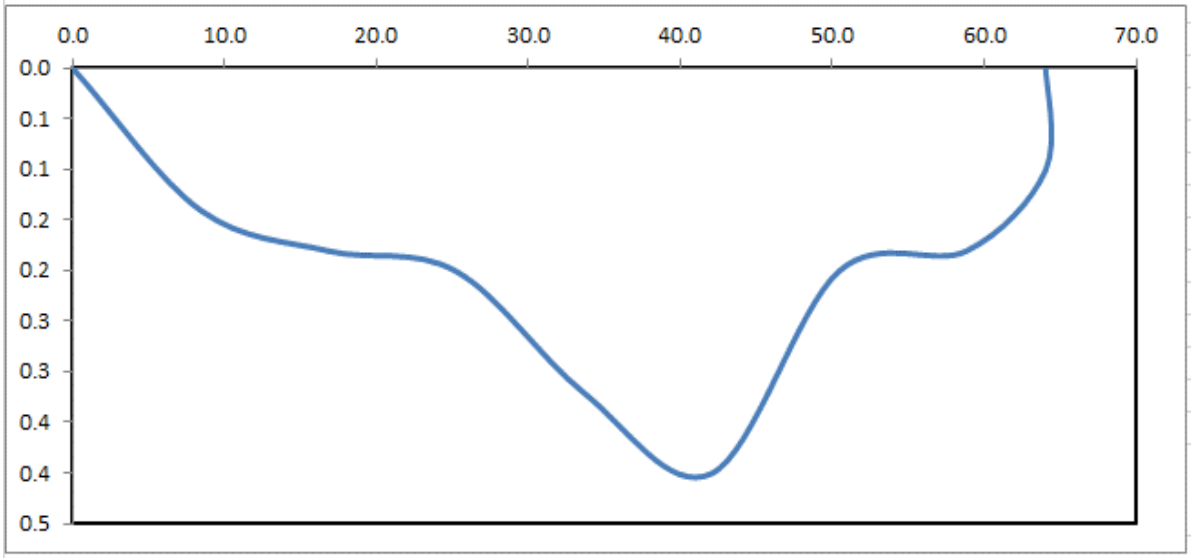
Code : LWF-1 Sampling Lo Down stream of Umiam River
Top of the bridge
(during fair weather)

Date of Measurement :10.06.2024

Table No: 16 b

Sl. No.	Distance from Initial Point	Width interval (m)	Depth of nalla (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0.0	0.00	0.0	0.0	0.0	0.0
2	8.40	8.40	1.20	0.14	5.04	0.35
3	16.80	8.40	1.40	0.18	10.92	1.75
4	25.20	8.40	1.80	0.20	13.44	2.55
5	33.60	8.40	2.20	0.32	16.80	4.37
6	42.00	8.40	2.40	0.40	19.32	6.96
7	50.40	8.40	1.60	0.20	16.80	5.04
8	58.80	8.40	1.00	0.18	10.92	2.07
9	64.00	8.40	0.60	0.10	3.36	0.47
10	70.20	6.20	0.00	0.00	1.26	0.06
					Total	23.63
					Discharge m^3/hr = 85050.0	

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM UMIAM RIVER TOP OF THE BRIDGE (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. Ltd State : Meghalaya

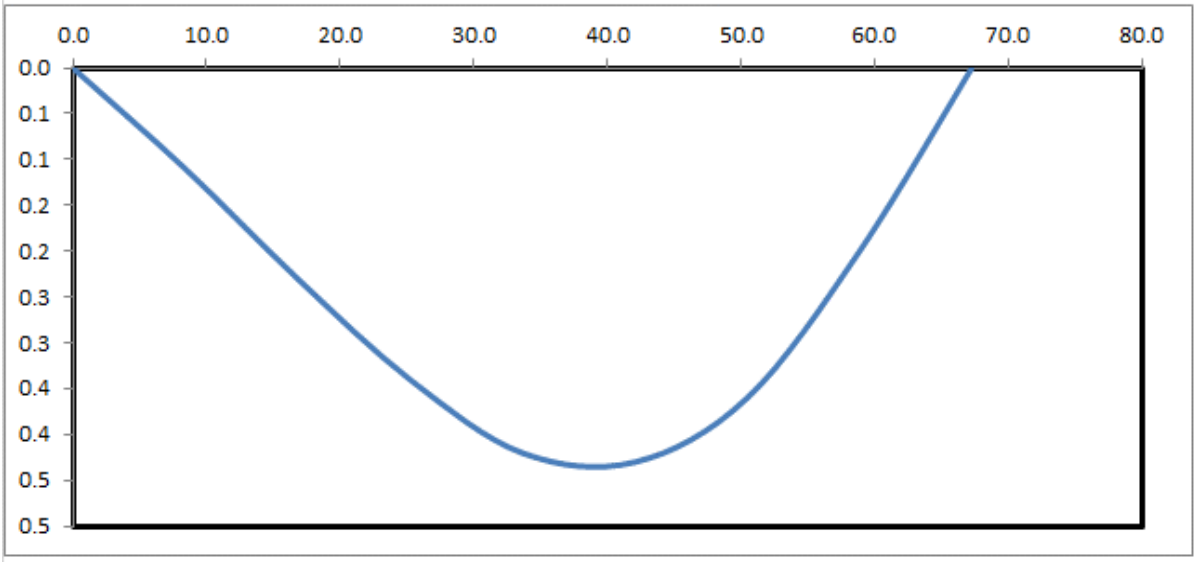
Code : LWF-1 Sampling Lo(Down stream of Umiam River
Top of the bridge
(during fair weather)

Date of Measurement :18.07.2024

Table No: 16 c

Sl. No.	Distance from Initial Point	Width interval (m)	Depth of nalla (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0.0	0.00	0.0	0.0	0.0	0.0
2	8.4	8.40	0.80	0.11	3.36	0.18
3	16.8	8.40	1.60	0.23	10.08	1.71
4	25.2	8.40	1.90	0.34	14.70	4.19
5	33.6	8.40	2.60	0.42	18.90	7.18
6	42.0	8.40	2.70	0.43	22.26	9.46
7	50.4	8.40	2.20	0.36	20.58	8.13
8	58.8	8.40	1.20	0.20	14.28	4.00
9	67.2	8.40	0.00	0.00	5.04	0.50
					Total	30.86
					Discharge m^3/hr =111094.2	

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM UMIAM RIVER TOP OF THE BRIDGE (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. Ltd State : Meghalaya

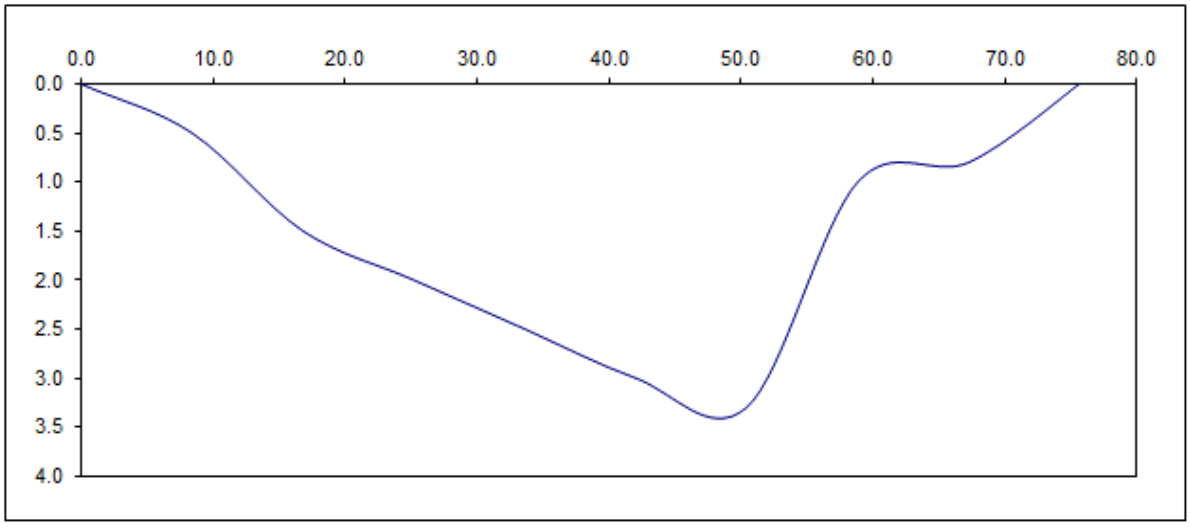
Code : LWF-1 Sampling Lo(Down stream of Umiam River
Top of the bridge
(during fair weather)

Date of Measurement :20.08.2024

Table No: 16 d

Sl. No.	Distance from Initial Point	Width interval (m)	Depth of nalla (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0.0	0.00	0.0	0.0	0.0	0.0
2	8.4	8.40	0.50	0.08	2.10	0.08
3	16.8	8.40	1.50	0.10	8.40	0.76
4	25.2	8.40	2.00	0.21	14.70	2.28
5	33.6	8.40	2.50	0.28	18.90	4.63
6	42.0	8.40	3.00	0.31	23.10	6.81
7	50.4	8.40	3.30	0.25	26.46	7.41
8	58.8	8.40	1.00	0.18	18.06	3.88
9	67.2	8.40	0.80	0.12	7.56	1.13
10	75.6	8.40	0.00	0.04	3.36	0.27
					Total	27.26
					Discharge m^3/hr = 98128.8	

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM UMIAM RIVER TOP OF THE BRIDGE (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. Ltd State : Meghalaya

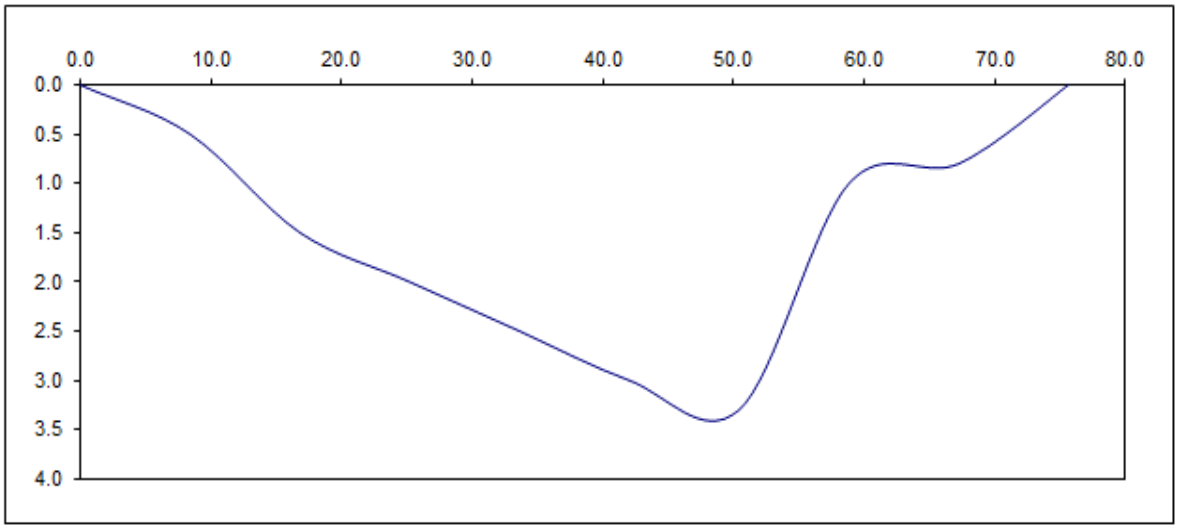
Code : LWF-1 Sampling Lo Down stream of Umiam River
Top of the bridge
(during fair weather)

Date of Measurement :24.09.2024

Table No: 16 e

Sl. No.	Distance from Initial Point	Width interval (m)	Depth of nalla (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0.0	0.00	0.0	0.0	0.0	0.0
2	8.4	8.40	0.60	0.09	2.52	0.11
3	16.8	8.40	1.00	0.13	6.72	0.74
4	25.2	8.40	1.50	0.20	10.50	1.73
5	33.6	8.40	2.00	0.28	14.70	3.53
6	42.0	8.40	3.00	0.32	21.00	6.30
7	50.4	8.40	2.00	0.24	21.00	5.88
8	58.8	8.40	1.00	0.22	12.60	2.90
9	67.2	8.40	0.50	0.08	6.30	0.95
10	73.4	6.20	0.00	0.02	2.10	0.11
					Total	22.24
					Discharge m^3/hr = 80067.96	

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM UMIAM RIVER TOP OF THE BRIDGE (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. State : Meghalaya

Code : LWF-2 Sampling L Down stream of Phlangkaruh River

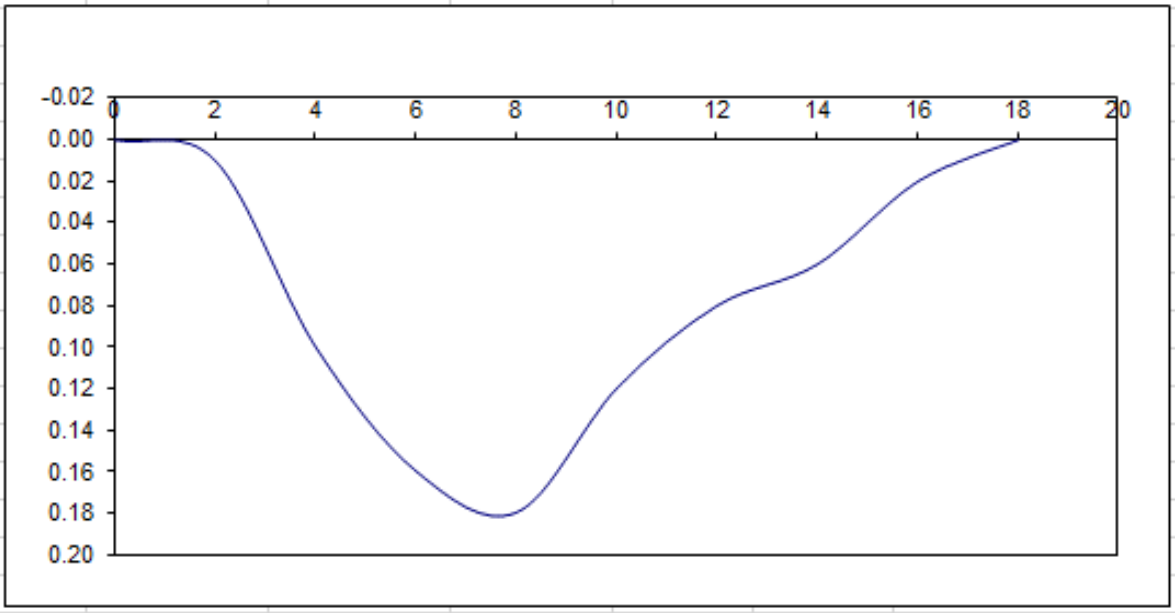
Date of Measurement : 05.04.2024

Table No: 17

Sl. No.	Distance from Initial point (m)	Width interval (m)	Depth of stream (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0	0.0	0.00	0.00	0.0	0.000
2	2	2.00	0.40	0.01	0.40	0.002
3	4	2.00	0.70	0.10	1.10	0.061
4	6	2.00	1.00	0.16	1.70	0.221
5	8	2.00	1.20	0.18	2.20	0.374
6	10	2.00	0.80	0.12	2.00	0.300
7	12	2.00	0.60	0.08	1.40	0.140
8	14	2.00	0.50	0.06	1.10	0.077
10	16	2.00	0.40	0.02	0.90	0.036
11	18	2.00	0.00	0.00	0.40	0.004
					Total	1.09750

Discharge m^3/hr =3951.0

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM OF PHLANGKARUH RIVER (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. State : Meghalaya

Code : LWF-2 Sampling L Down stream of Phlangkaruh River

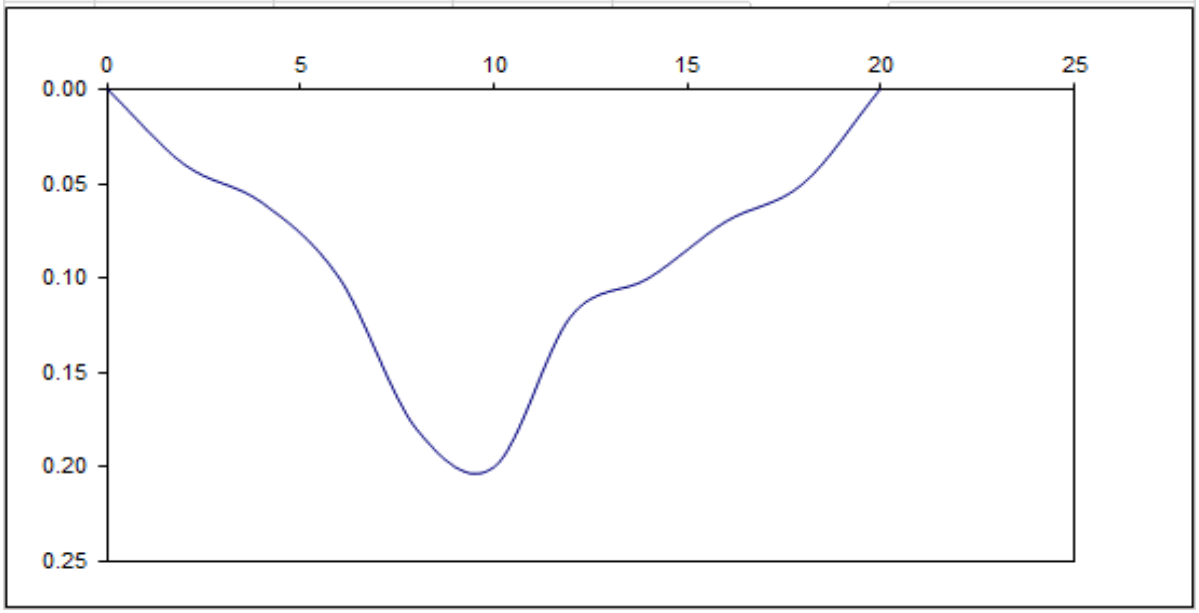
Date of Measurement : 14.05.2024

Table No: 17 a

Sl. No.	Distance from Initial point (m)	Width interval (m)	Depth of stream (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0	0.0	0.00	0.00	0.0	0.000
2	2	2.00	0.60	0.04	0.60	0.012
3	4	2.00	0.80	0.06	1.40	0.070
4	6	2.00	1.20	0.10	2.00	0.160
5	8	2.00	1.40	0.18	2.60	0.364
6	10	2.00	1.80	0.20	3.20	0.608
7	12	2.00	1.00	0.12	2.80	0.448
8	14	2.00	0.80	0.10	1.80	0.198
9	16	2.00	0.60	0.07	1.40	0.119
10	18	2.00	0.40	0.05	1.00	0.060
11	20	2.00	0.00	0.00	0.40	0.010
					Total	1.66200

Discharge m^3/hr =5983.2

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM OF PHLANGKARUH RIVER (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. State : Meghalaya

Code : LWF-2 Sampling L Down stream of Phlangkaruh River

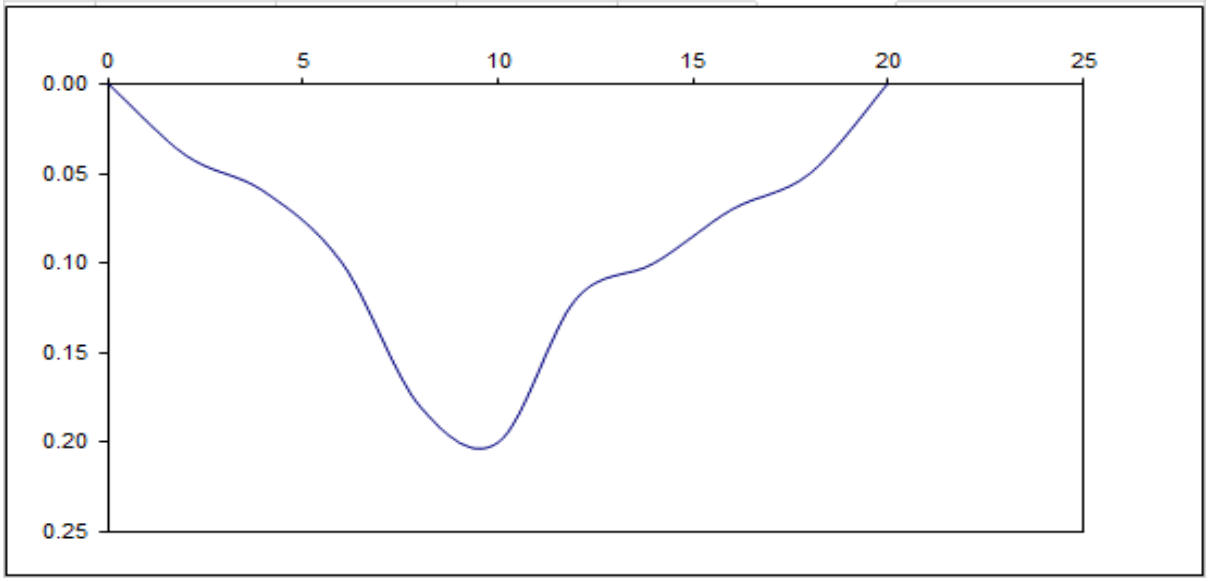
Date of Measurement : 10.06.2024

Table No: 17 b

Sl. No.	Distance from Initial point (m)	Width interval (m)	Depth of stream (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0	0.0	0.00	0.00	0.0	0.000
2	2	2.00	0.80	0.04	0.80	0.016
3	4	2.00	1.00	0.10	1.80	0.126
4	6	2.00	1.40	0.16	2.40	0.312
5	8	2.00	1.80	0.20	3.20	0.576
6	10	2.00	2.00	0.22	3.80	0.798
7	12	2.00	2.20	0.26	4.20	1.008
8	14	2.00	2.00	0.20	4.20	0.966
9	16	2.00	1.80	0.18	3.80	0.722
10	18	2.00	1.40	0.14	3.20	0.512
11	20	2.00	1.00	0.12	2.40	0.312
12	22	2.00	0.80	0.06	1.80	0.162
13	24	2.00	0.40	0.05	1.20	0.066
14	26	2.00	0.00	0.00	0.40	0.010
					Total	2.83600

Discharge m^3/hr =10209.6

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM OF PHLANGKARUH RIVER (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. State : Meghalaya

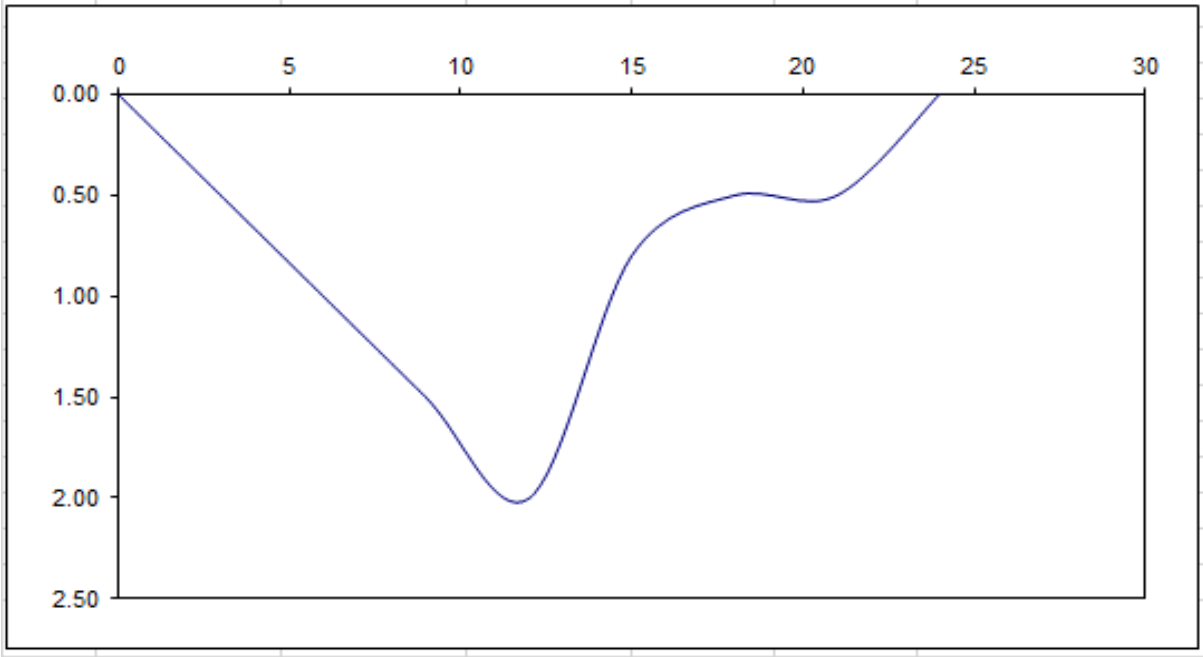
Code : LWF-2 Sampling L Down stream of Phlangkaruh River

Date of Measurement :18 .07.2024

Table No: 17 c

Sl. No.	Distance from Initial point (m)	Width interval (m)	Depth of stream (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0	0.0	0.00	0.00	0.0	0.000
2	3	3.00	0.60	0.04	0.90	0.018
3	6	3.00	1.10	0.08	2.55	0.153
4	9	3.00	1.60	0.12	4.05	0.405
5	12	3.00	2.00	0.18	5.40	0.810
6	15	3.00	1.00	0.14	4.50	0.720
7	18	3.00	0.80	0.12	2.70	0.351
8	21	3.00	0.50	0.10	1.95	0.215
9	24	3.00	0.00	0.03	0.75	0.049
					Total	2.10600
						Discharge m^3/hr =7581.6

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM OF PHLANGKARUH RIVER (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. State : Meghalaya

Code : LWF-2 Sampling L Down stream of Phlangkaruh River

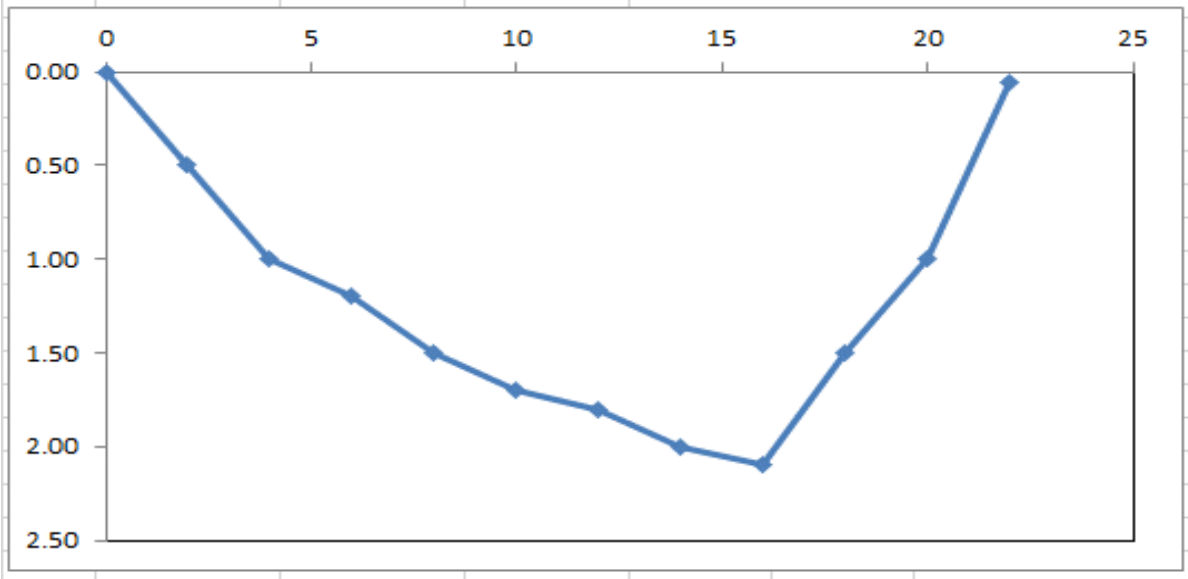
Date of Measurement : 20.08.2024

Table No: 17 d

Sl. No.	Distance from Initial point (m)	Width interval (m)	Depth of stream (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0	0.0	0.00	0.00	0.0	0.000
2	2	2.00	0.40	0.03	0.40	0.006
3	4	2.00	0.80	0.08	1.20	0.066
4	6	2.00	1.30	0.11	2.10	0.200
5	8	2.00	1.60	0.18	2.90	0.421
6	10	2.00	1.80	0.24	3.40	0.714
7	12	2.00	2.00	0.20	3.80	0.836
8	14	2.00	2.20	0.12	4.20	0.672
9	16	2.00	2.10	0.08	4.30	0.430
10	18	2.00	1.40	0.12	3.50	0.350
11	20	2.00	1.00	0.05	2.40	0.204
12	22	2.00	0.40	0.03	1.40	0.056
13	24	2.00	0.00	0.00	0.40	0.006
					Total	2.24200

Discharge m^3/hr =8071.2

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM OF PHLANGKARUH RIVER (DURING FAIR WEATHER)



WATER FLOW MEASUREMENT

Project : Lafarage Umiam Mining Pvt. State : Meghalaya

Code : LWF-2 Sampling Loc Down stream of Phlangkaruh River

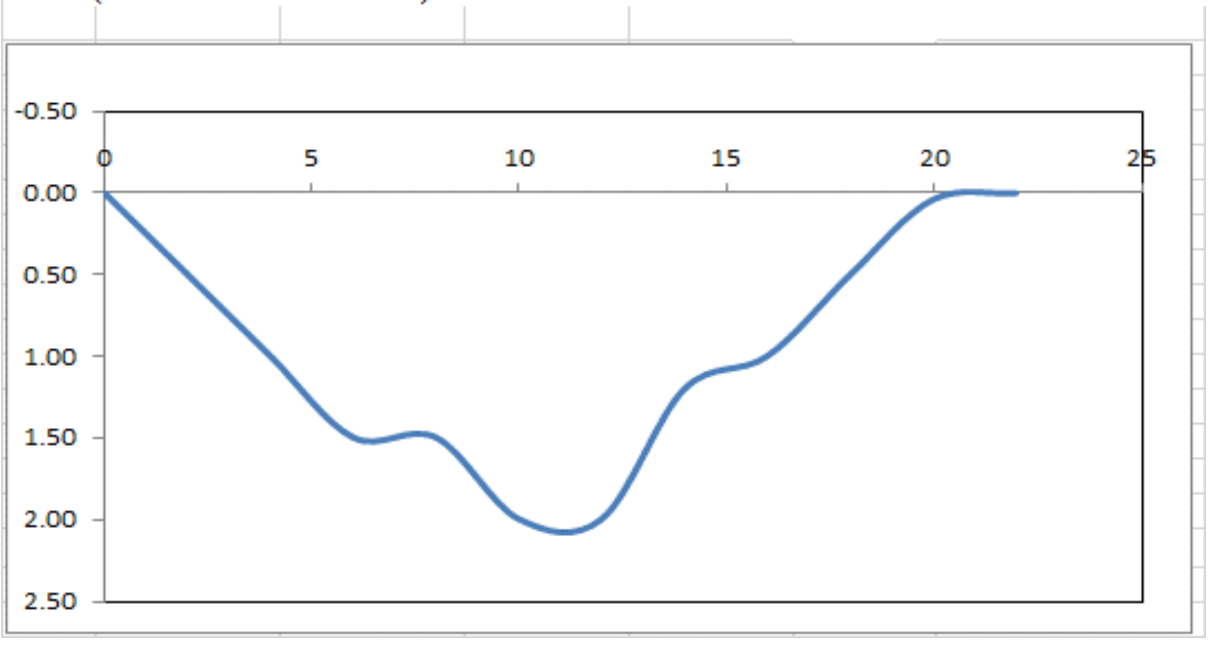
Date of Measurement : 24.09.2024

Table No: 17 e

Sl. No.	Distance from Initial point (m)	Width interval (m)	Depth of stream (m)	Velocity M/S	Area (m^2)	Discharge (m^3/sec)
1	0	0.0	0.00	0.00	0.0	0.000
2	2	2.00	0.40	0.03	0.40	0.006
3	4	2.00	0.80	0.06	1.20	0.054
4	6	2.00	1.20	0.12	2.00	0.180
5	8	2.00	1.50	0.18	2.70	0.405
6	10	2.00	1.80	0.22	3.30	0.660
7	12	2.00	2.20	0.16	4.00	0.760
8	14	2.00	1.40	0.12	3.60	0.504
9	16	2.00	1.00	0.09	2.40	0.252
10	18	2.00	0.60	0.06	1.60	0.120
11	20	2.00	0.20	0.02	0.80	0.032
					Total	2.06500

Discharge m^3/hr =7434

CROSS SECTION OF WATER FLOW MEASUREMENT AT DOWNSTREAM OF PHLANGKARUH RIVER (DURING FAIR WEATHER)



PROJECT : LAFARGE UMIAM MINING PVT.LTD | STATE : MEGHALAYA

SAMPLING LOCATION : SHELLA BAZAR (NON MARKET DAY) | CODE : LN - 1

MONTH: APRIL - JUNE, 2024

LOCATION CATEGORY : COMMERCIAL AREA | **Table No. 18**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	65	55.9 - 56.2	44.2	59.6	
Night Time (10.00 PM to 6.00 AM)	55	47.2 - 47.8			

PROJECT: LAFARGE UMIAM MINING PVT.LTD | STATE : MEGHALAYA

SAMPLING LOCATION: PYRKAN VILLAGE | CODE : LN - 2

MONTH: APRIL - JUNE, 2024

LOCATION CATEGORY: RESIDENTIAL AREA | **Table No. 19**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.1 - 54.1	41.2	57.4	
Night Time (10.00 PM to 6.00 AM)	45	44.4 - 44.8			

PROJECT : LAFARGE UMIAM MINING PVT.LTD | STATE : MEGHALAYA

SAMPLING LOCATION : PHALANGKARUH VILLAGE | CODE : LN - 3

MONTH :APRIL - JUNE, 2024

LOCATION CATEGORY : RESIDENTIAL AREA | **Table No. 20**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.0 - 53.9	41.6	57.9	
Night Time (10.00 PM to 6.00 AM)	45	44.4 - 44.5			

PROJECT : LAFARGE UMIAM MINING PVT.LTD. STATE: MEGHALAYA

SAMPLING LOCATION : OFFICE AREA CODE : LN - 4

MONTH :APRIL - JUNE, 2024

LOCATION CATEGORY : INDUSTRIAL AREA **Table No. 21**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	75	57.7 - 59.0	45.6	63.8	
Night Time (10.00 PM to 6.00 AM)	70	48.6 - 49.3			

PROJECT : LAFARGE UMIAM MINING PVT.LTD. STATE: MEGHALAYA

SAMPLING LOCATION : SHELLA PUNJEE CODE : LN - 5

MONTH :APRIL- JUNE, 2024

LOCATION CATEGORY :RESIDENTIAL AREA **Table No. 22**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.1 - 53.8	41.2	57.1	
Night Time (10.00 PM to 6.00 AM)	45	44.1 - 44.7			

PROJECT : LAFARGE UMIAM MINING PVT.LTD.	STATE: MEGHALAYA
SAMPLING LOCATION :MAWRYNGKHONG	CODE : LN - 6
MONTH : APRIL - JUNE, 2024	
LOCATION CATEGORY :RESIDENTIAL AREA	**Table No. 23**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.1 - 54.0	41.2	57.8	
Night Time (10.00 PM to 6.00 AM)	45	44.3 - 44.7			

PROJECT : LAFARGE UMIAM MINING PVT.LTD | STATE : MEGHALAYA

SAMPLING LOCATION : SHELLA BAZAR (NON MARKET DAY) | CODE : LN - 1

MONTH: JULY - SEPTEMBER, 2024

LOCATION CATEGORY : COMMERCIAL AREA | **Table No. 24**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	65	55.8 - 56.3	43.2	60.1	
Night Time (10.00 PM to 6.00 AM)	55	46.3 - 47.0			

PROJECT: LAFARGE UMIAM MINING PVT.LTD | STATE : MEGHALAYA

SAMPLING LOCATION: PYRKAN VILLAGE | CODE : LN - 2

MONTH: JULY - SEPTEMBER, 2024

LOCATION CATEGORY: RESIDENTIAL AREA | **Table No. 25**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.3 - 54.2	41.4	57.9	
Night Time (10.00 PM to 6.00 AM)	45	44.0 - 44.8			

PROJECT : LAFARGE UMIAM MINING PVT.LTD		STATE : MEGHALAYA			
SAMPLING LOCATION : PHALANGKARUH VILLAGE		CODE : LN - 3			
MONTH :JULY - SEPTEMBER, 2024					
LOCATION CATEGORY : RESIDENTIAL AREA		**Table No. 26**			

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.4 - 54.1	41.6	57.6	
Night Time (10.00 PM to 6.00 AM)	45	44.6 - 44.8			

PROJECT : LAFARGE UMIAM MINING PVT.LTD. STATE: MEGHALAYA

SAMPLING LOCATION : OFFICE AREA CODE : LN - 4

MONTH :JULY-SEPTEMBER, 2024

LOCATION CATEGORY : INDUSTRIAL AREA **Table No. 27**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	75	56.7 - 58.8	43.6	63.5	
Night Time (10.00 PM to 6.00 AM)	70	47.9 - 48.7			

PROJECT : LAFARGE UMIAM MINING PVT.LTD. STATE: MEGHALAYA

SAMPLING LOCATION : SHELLA PUNJEE CODE : LN - 5

MONTH :JULY - SEPTEMBER, 2024

LOCATION CATEGORY :RESIDENTIAL AREA **Table No. 28**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.5 - 53.9	41.5	57.4	
Night Time (10.00 PM to 6.00 AM)	45	44.2- 44.4			

PROJECT : LAFARGE UMIAM MINING PVT.LTD. | STATE: MEGHALAYA

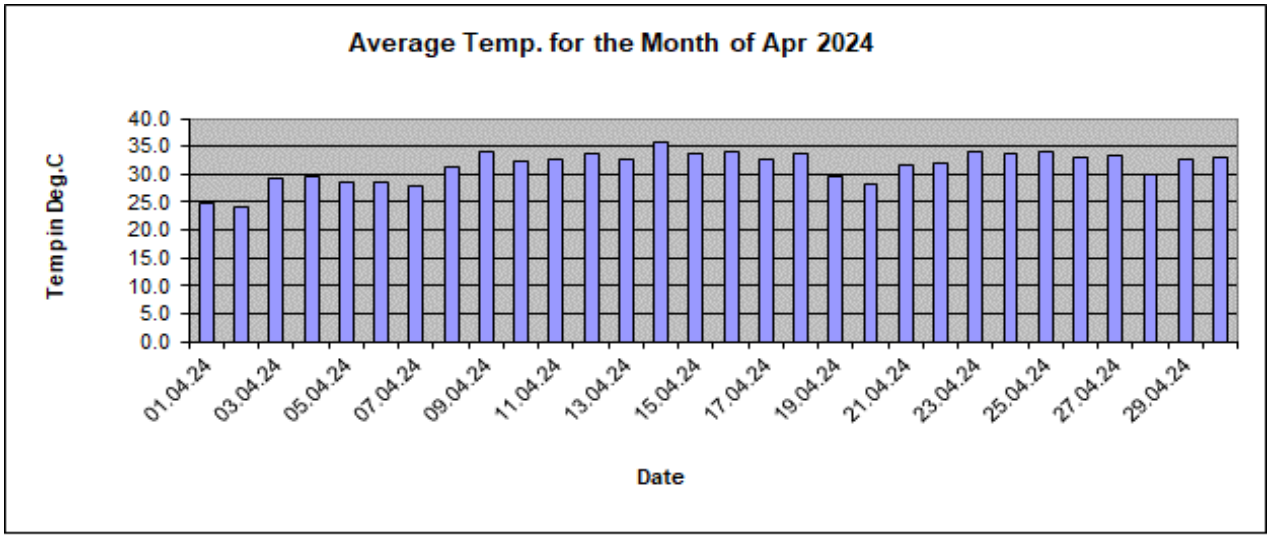
SAMPLING LOCATION :MAWRYNGKHONG | CODE : LN - 6

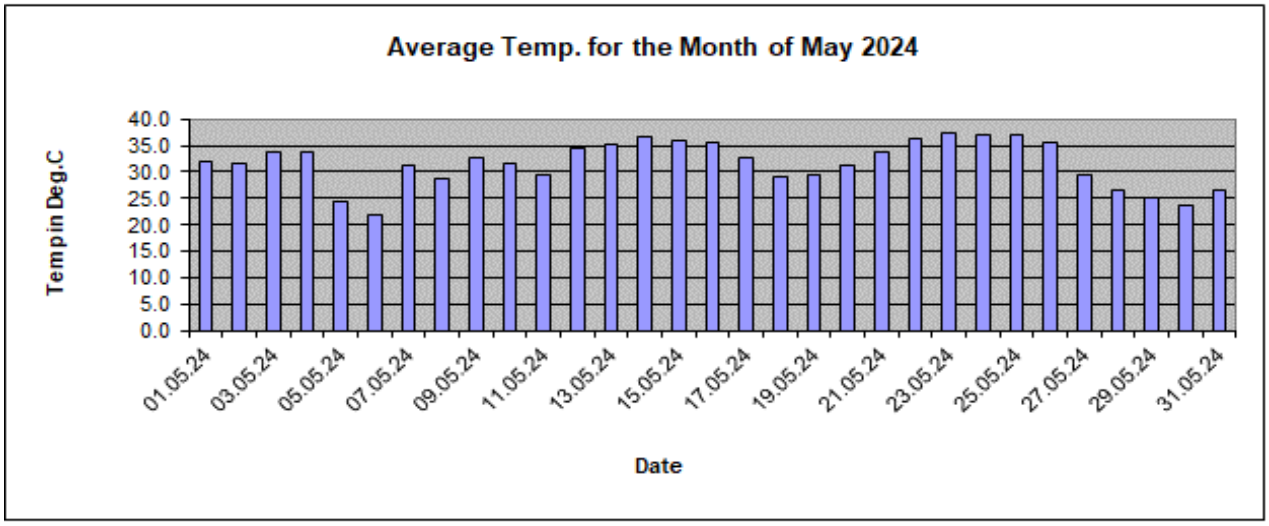
MONTH : JULY - SEPTEMBER, 2024

LOCATION CATEGORY :RESIDENTIAL AREA | **Table No. 29**

Time of Monitoring	Permissible Limit dB(A)	in dB(A)			Remarks
		Leq	Lmin	Lmax	
Day Time (6.00 AM to 10.00 PM)	55	53.1 - 54.0	41.5	57.2	
Night Time (10.00 PM to 6.00 AM)	45	44.5 - 44.6			

Diurnal Variation of Temperature (Apr - Jun 2024)





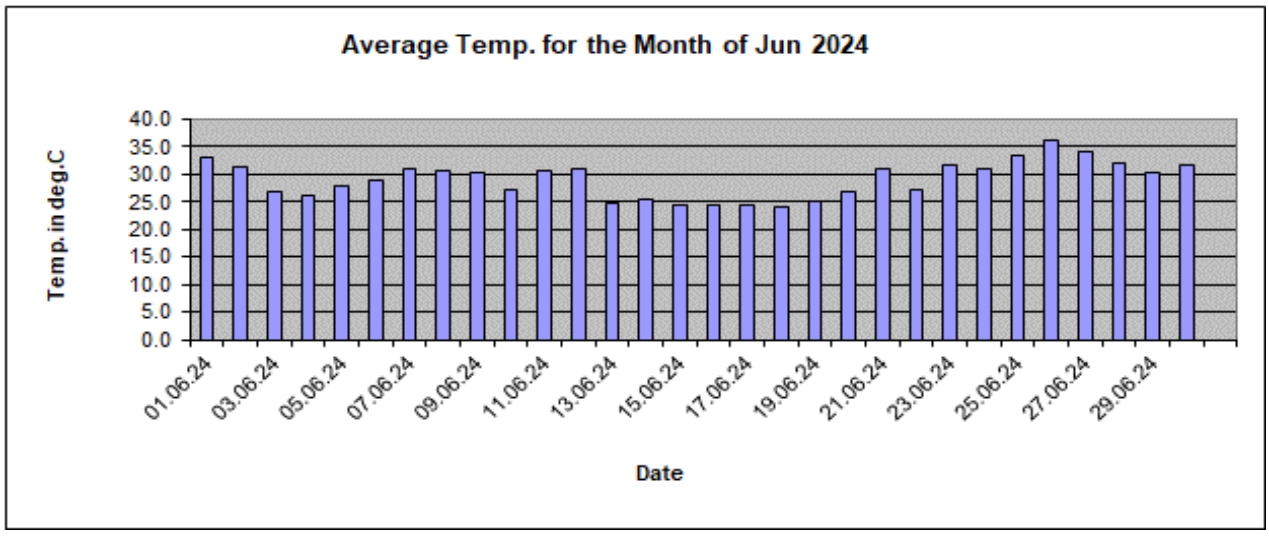
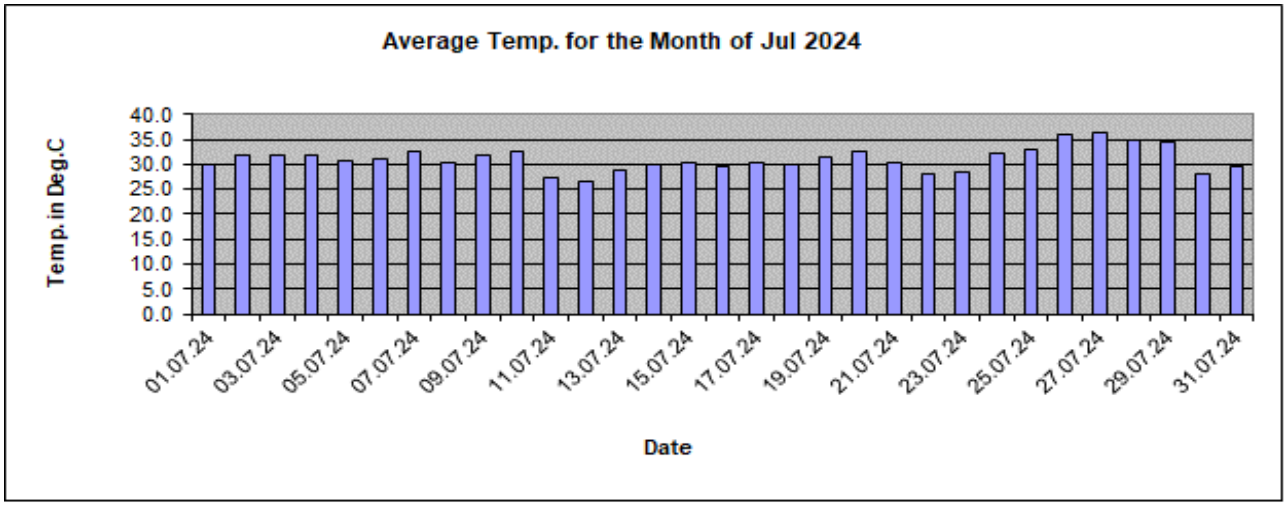
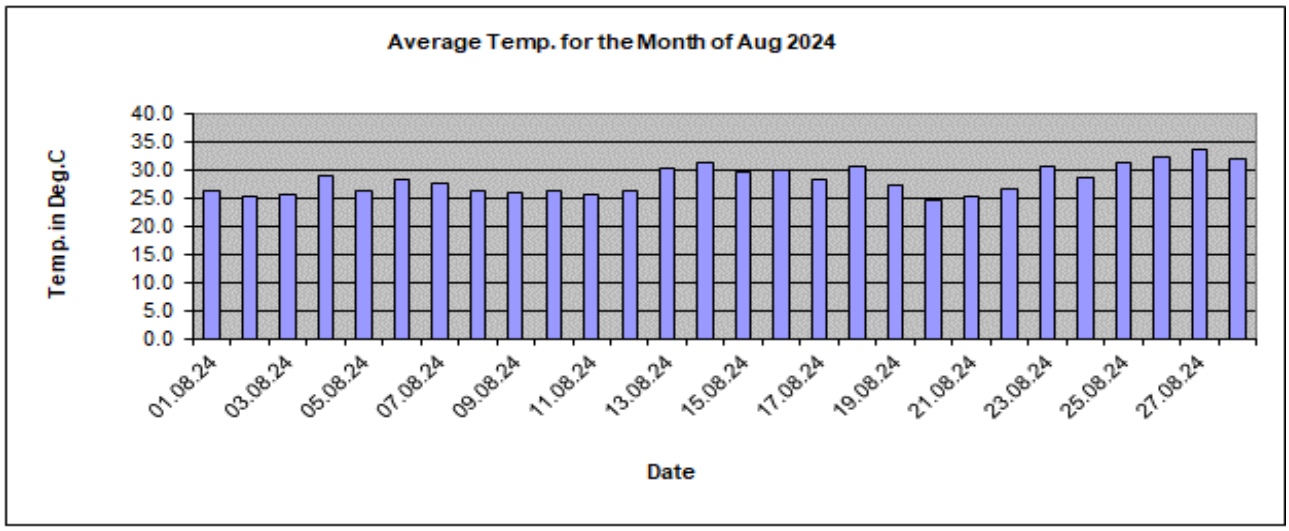


Exhibit-1

Diurnal Variation of Temperature (Jul - Sep 2024)





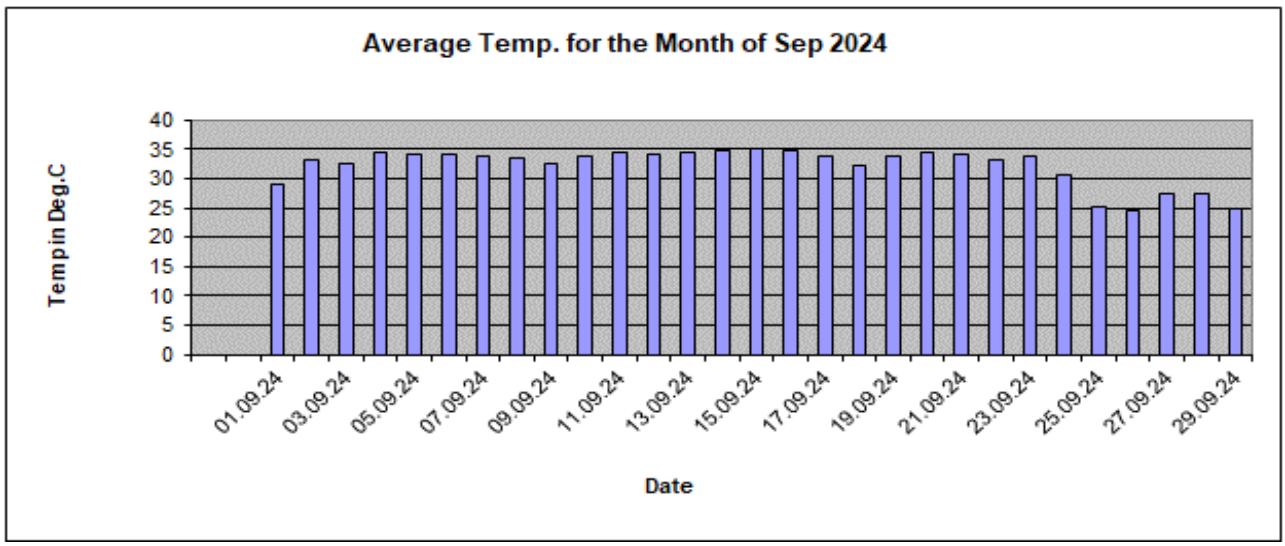
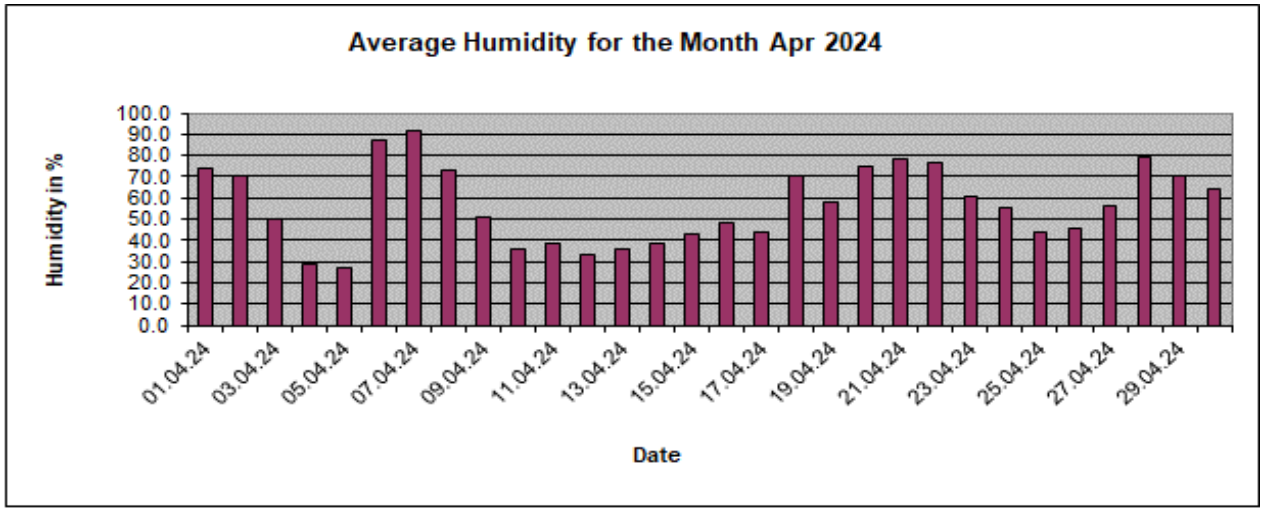
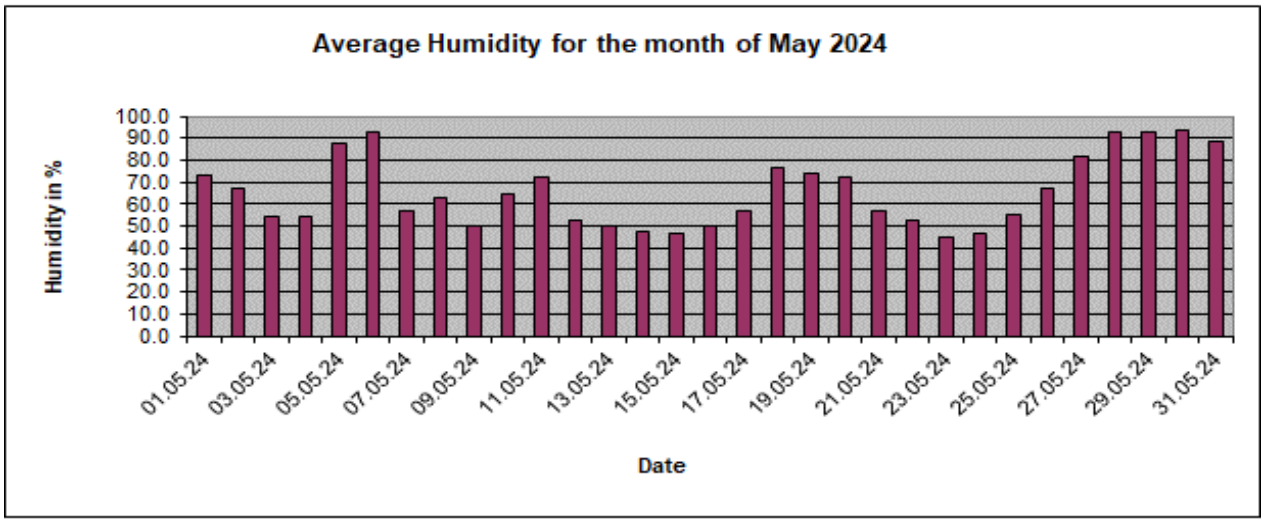


Exhibit-2

Diurnal Variation of Humidity (Apr - Jun 2024)





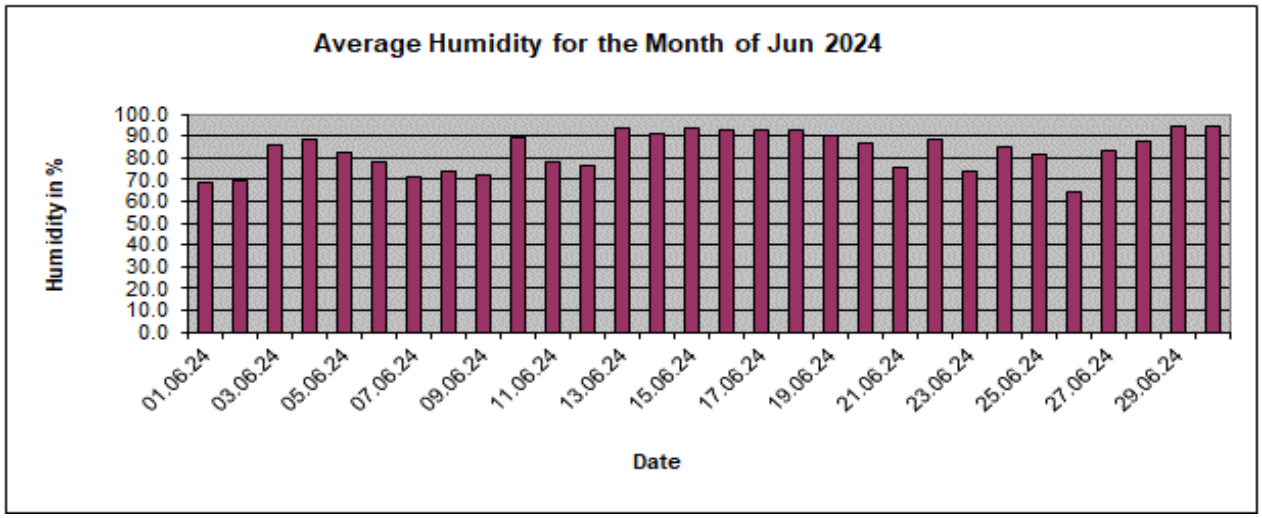
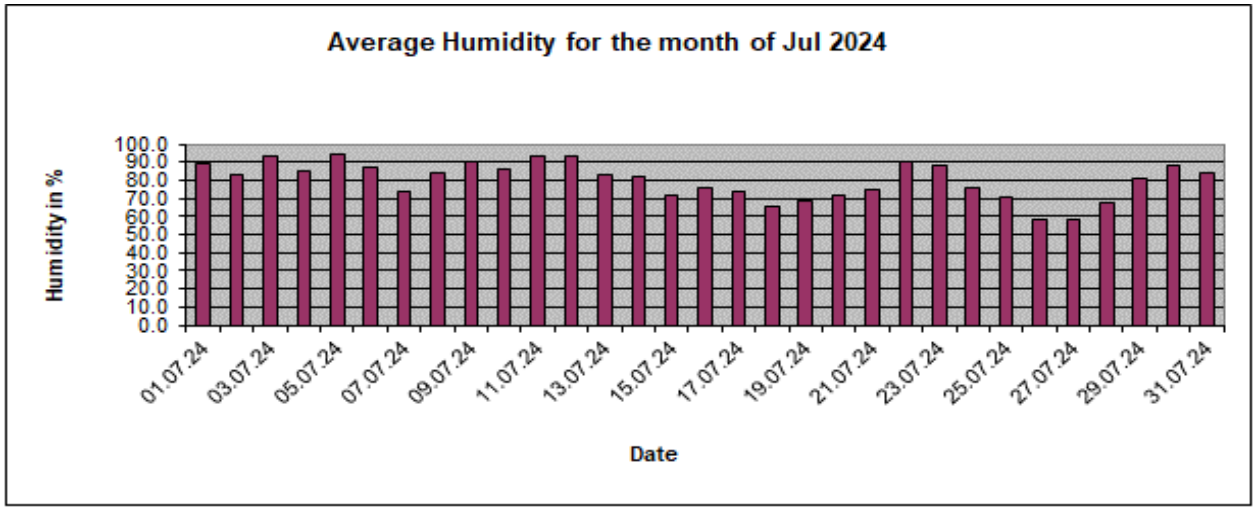
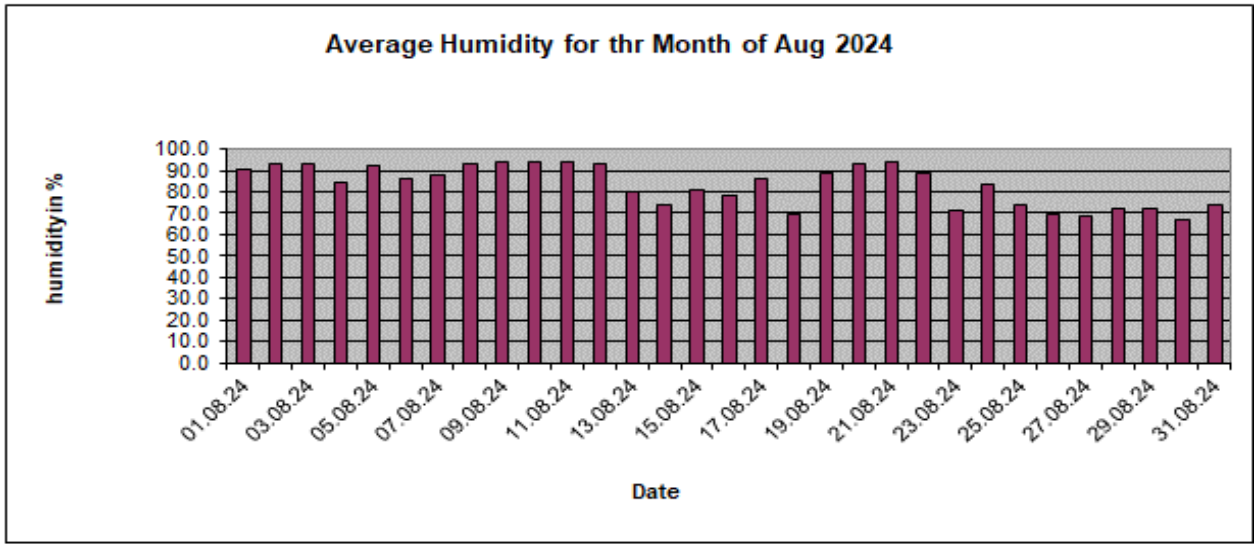


Exhibit-3

Diurnal Variation of Humidity (Jul – Sep 2024)





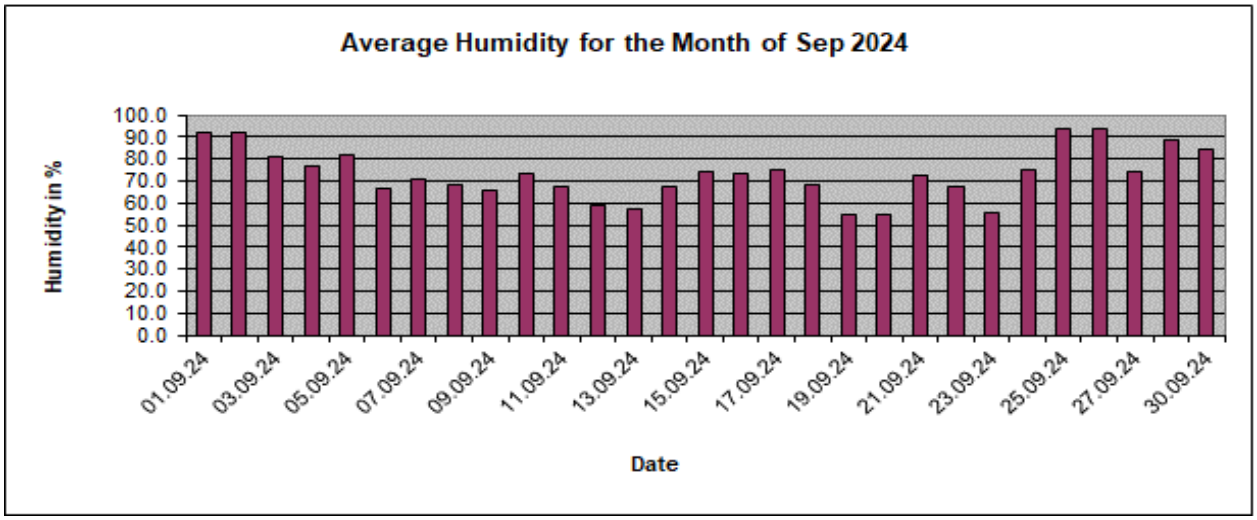
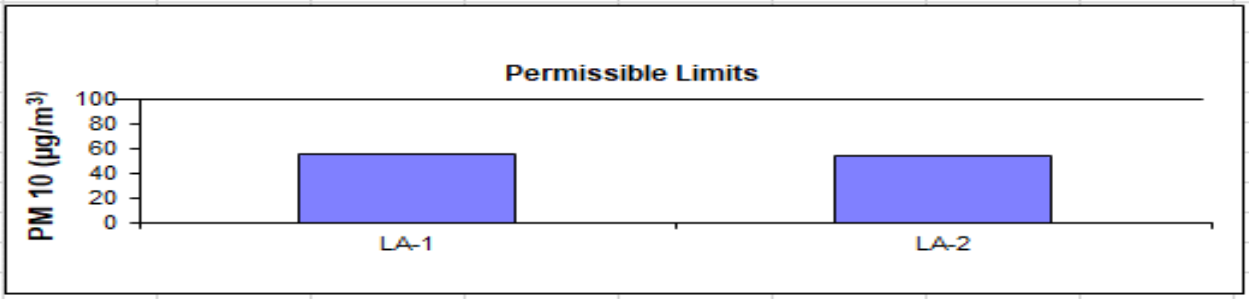
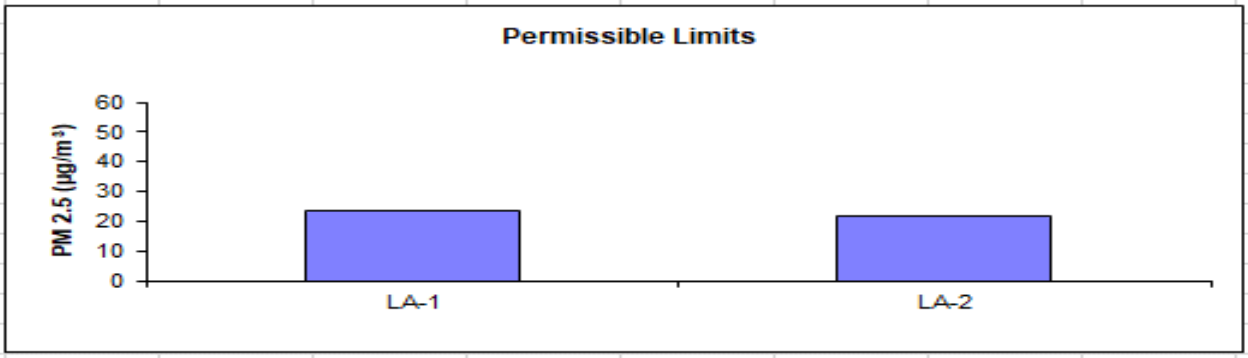
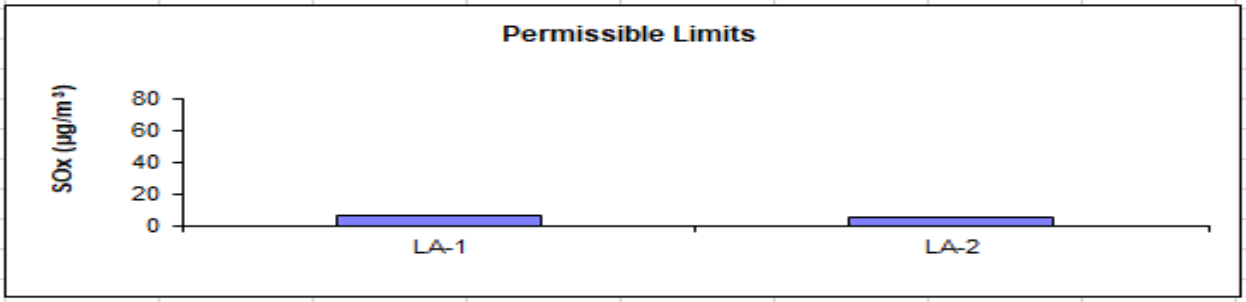


Exhibit-4

LAFARGE UMIAM MINING PVT. LTD. (Meghalaya)
Graphical Presentation of Ambient Air Quality
for Industrial and Mixed used Areas (Apr - Jun 2024)







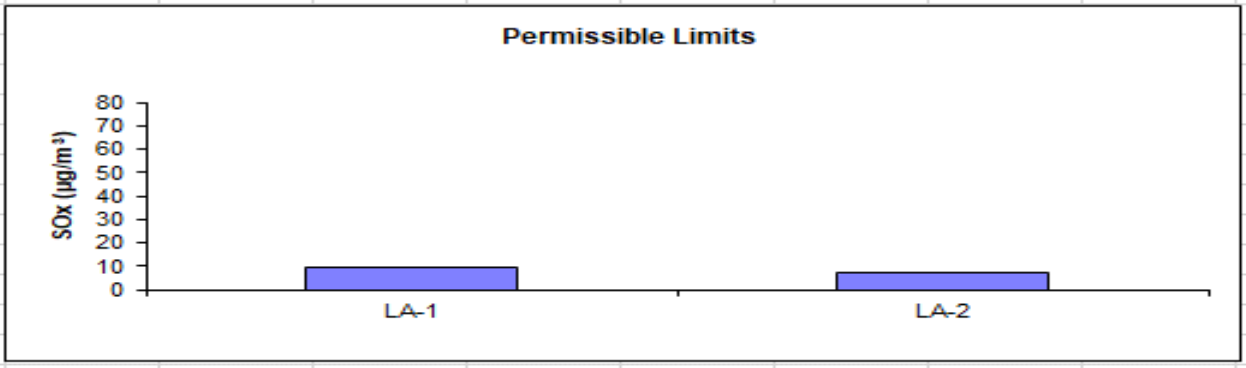
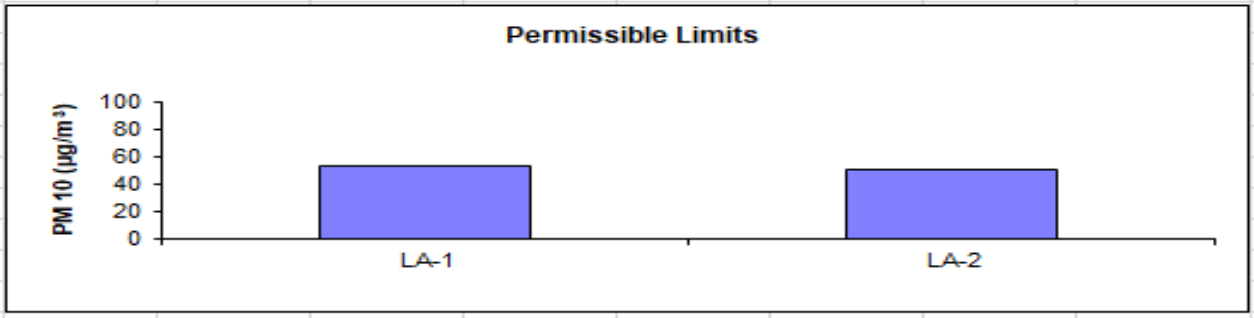
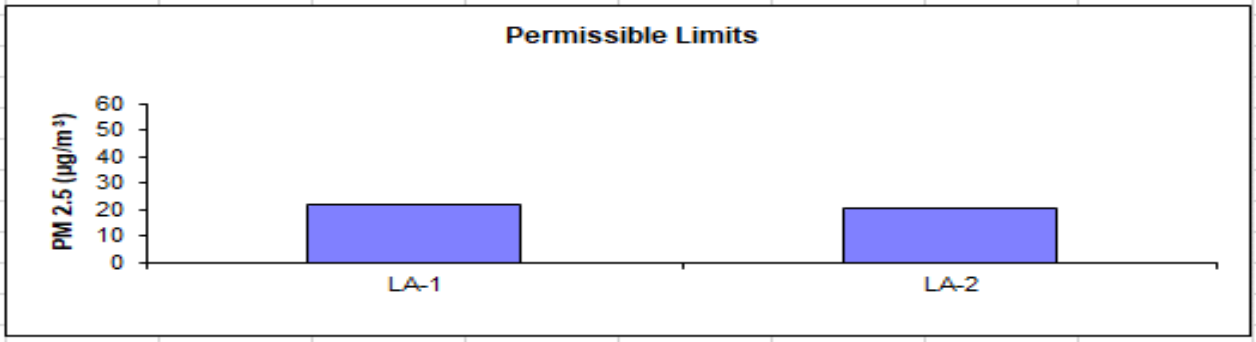
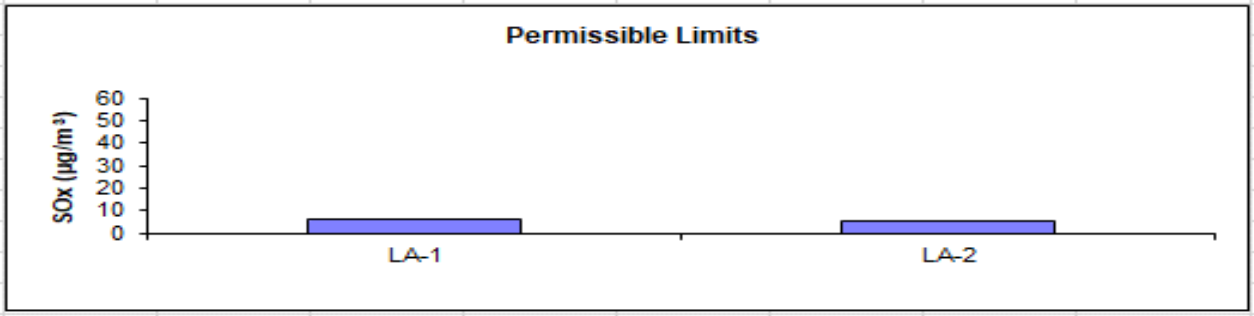


Exhibit No: 5

LAFARGE UMIAM MINING PVT. LTD. (Meghalaya)
Graphical Presentation of Ambient Air Quality
for Industrial and Mixed used Areas (Jul to Sep 2024)







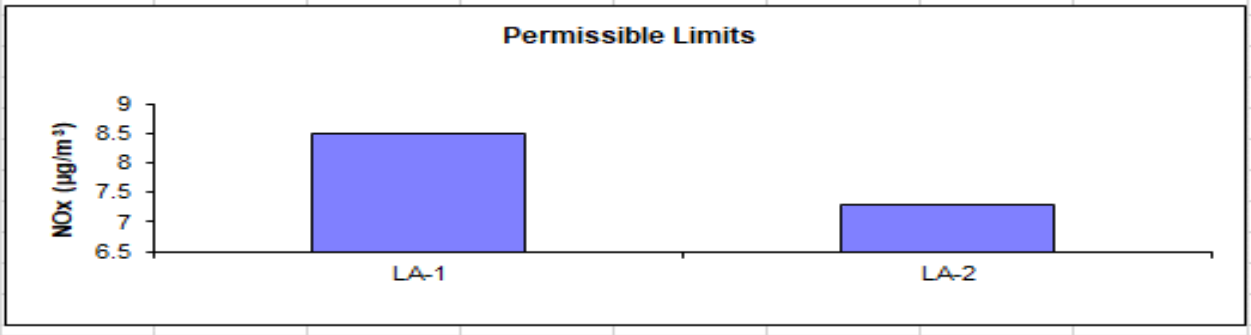
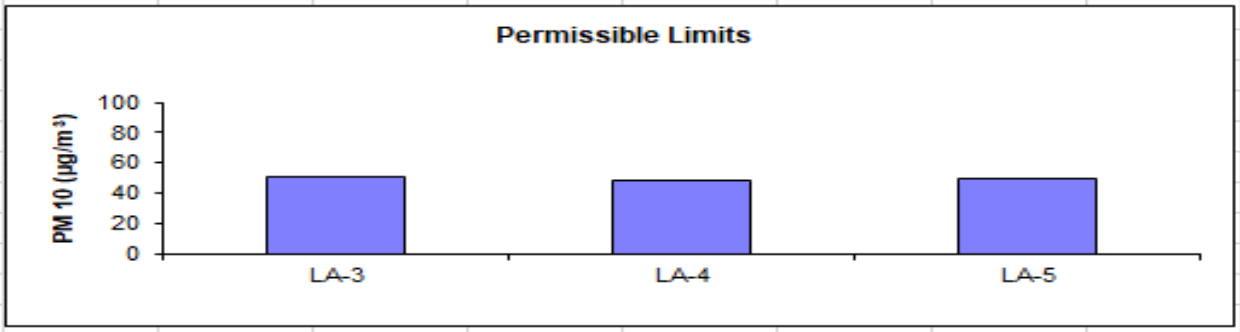
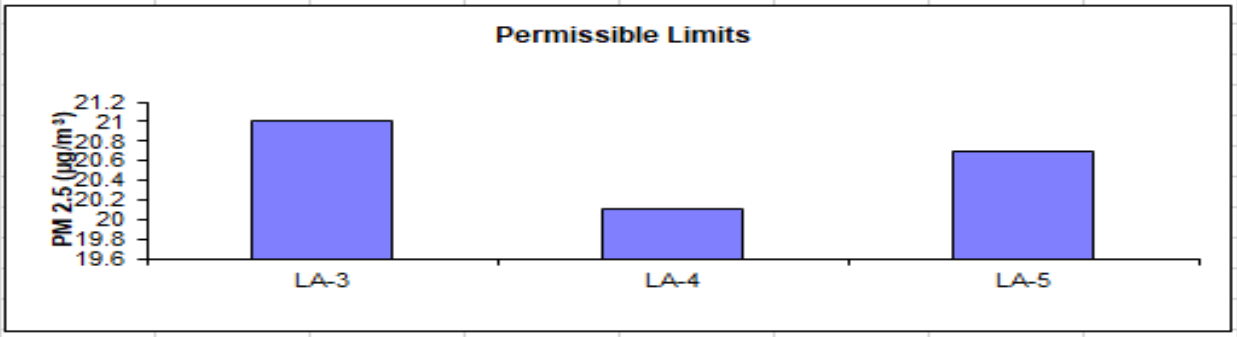
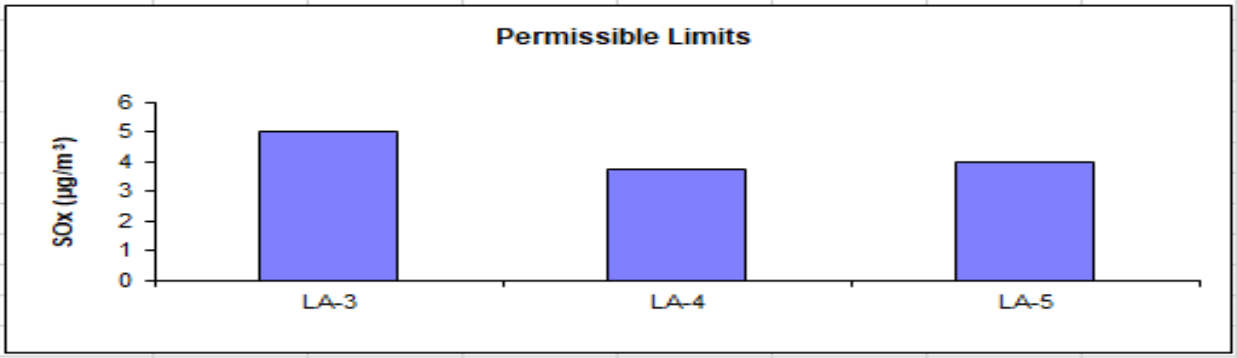


Exhibit No: 6

LAFARGE UMIAM MINING PVT. LTD. (Meghalaya)
Graphical Presentation of Ambient Air Quality
for Residential, Rural Areas (Apr to Jun 2024)







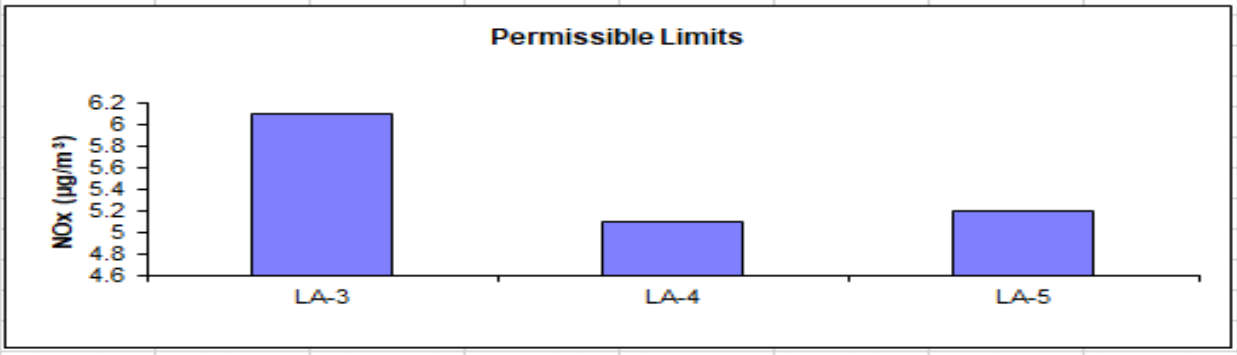
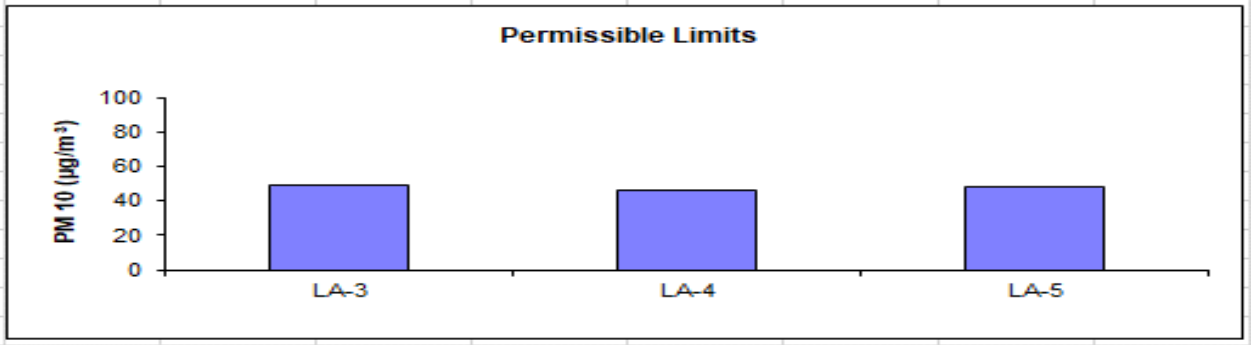
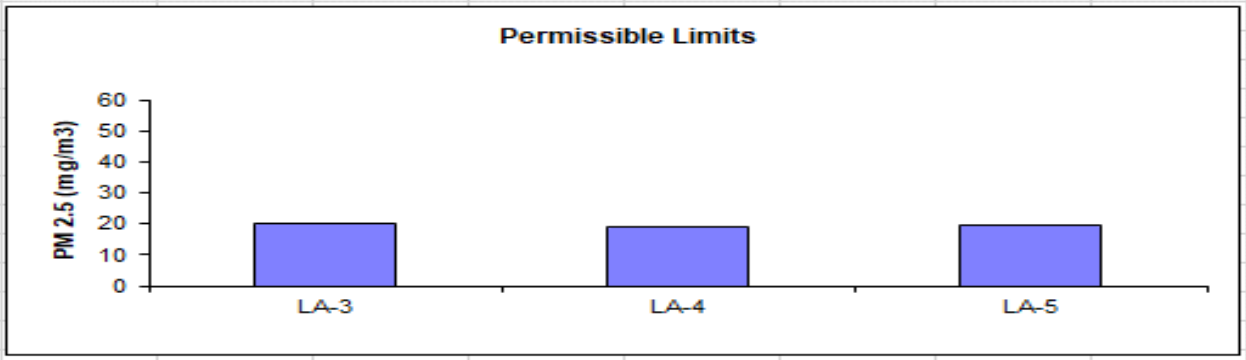
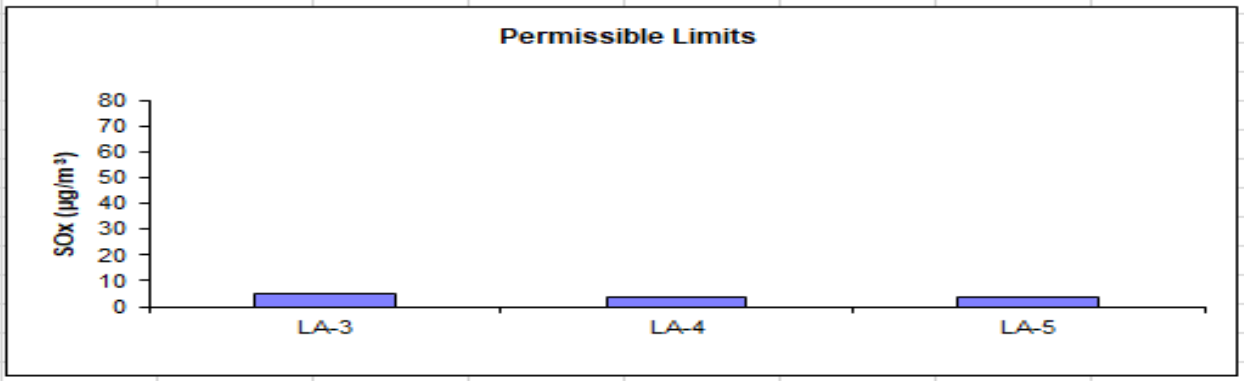


Exhibit No: 7

LAFARGE UMIAM MINING PVT. LTD. (Meghalaya)
Graphical Presentation of Ambient Air Quality
for Residential, Rural Areas (Jul to Sep 2024)







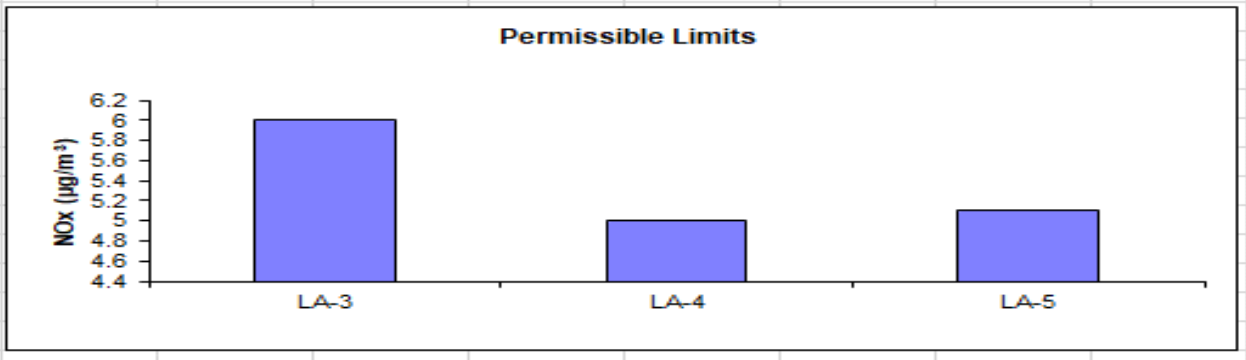


Exhibit No: 8

CAVE PROTECTION

Plate 1

DAILY WEATHER MONITORING DATA FOR THE PERIOD APRIL TO SEPTEMBER 2024

Lafarge Umiam Mining Pvt.Limited

Daily Weather Monitoring Data For the Month of Apr 2024

(Based on Hourly Readings from 00:00 Hrs. to 23:00 Hrs.)

Date	Wind Speed km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			Rainfall in mm
	Min	Max	Avg.		Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	
01.04.24	0.0	0.9	0.11	NNW	19.0	37.5	24.9	0.0	1.1	0.08	38.2	93.6	73.6	72.0
02.04.24	0.0	6.0	1.75	NW	16.1	35.2	24.2	0.0	1.3	0.21	36.1	93.6	70.2	25.0
03.04.24	0.0	5.5	1.98	NW	23.1	39.2	29.2	0.0	1.4	0.25	29.1	72.5	49.7	12.0
04.04.24	0.0	13.9	3.55	N	22.0	40.1	29.7	0.0	1.5	0.34	19.0	45.1	28.9	35.0
05.04.24	0.0	8.5	3.60	NNW	22.0	39.6	28.5	0.0	1.4	0.32	21.0	48.5	26.7	0.0
06.04.24	0.0	0.9	0.06	N	23.0	41.2	28.6	0.0	1.1	0.17	60.0	95.1	87.0	57.5
07.04.24	0.0	1.2	0.75	N	22.1	36.3	27.8	0.0	1.0	0.12	78.3	95.2	91.4	40.5
08.04.24	0.0	0.3	0.01	NW	23.0	40.2	31.3	0.0	1.2	0.17	46.5	93.5	73.1	4.0
09.04.24	0.0	0.9	0.09	NNE	24.0	37.5	33.9	0.0	1.2	0.33	22.2	93.3	50.6	5.0
10.04.24	0.0	2.0	0.24	N	26.1	38.2	32.3	0.0	0.6	0.18	23.0	65.2	35.4	9.0
11.04.24	0.0	0.3	0.03	W	25.0	38.0	32.6	0.0	1.1	0.13	18.3	66.1	38.5	9.5
12.04.24	0.0	1.3	0.20	N	26.4	40.5	33.6	0.0	1.4	0.33	13.0	53.5	32.8	18.0
13.04.24	0.0	0.6	0.07	NNW	24.2	40.2	32.8	0.0	1.3	0.29	16.2	58.1	36.1	2.0
14.04.24	0.0	0.4	0.05	N	25.0	39.3	35.8	0.0	1.1	0.29	19.2	59.2	38.6	75.5
15.04.24	0.0	0.2	0.02	N	26.0	40.0	33.6	0.0	1.2	0.26	19.6	62.0	42.5	26.5
16.04.24	0.0	1.1	0.72	NE	27.2	40.4	34.0	0.0	1.0	0.13	20.3	62.1	48.2	28.0
17.04.24	0.0	1.5	0.68	N	24.0	40.3	32.5	0.0	1.3	0.24	22.4	82.2	44.0	8.0
18.04.24	0.0	1.9	0.16	N	22.0	40.2	33.6	0.0	1.5	0.36	29.0	94.2	70.4	2.5
19.04.24	0.0	0.8	0.06	SW	24.0	39.5	29.7	0.0	1.2	0.21	28.2	94.5	58.3	5.5
20.04.24	0.0	1.5	0.11	N	24.1	38.5	28.3	0.0	0.5	0.05	26.3	94.1	75.1	3.5
21.04.24	0.0	1.1	0.10	NE	24.0	39.6	31.5	0.0	1.4	0.26	39.6	95.0	78.3	189.5
22.04.24	0.0	0.5	0.02	N	23.2	38.4	32.0	0.0	1.2	0.18	41.5	91.3	76.7	47.0
23.04.24	0.0	1.1	0.07	NW	26.0	39.2	34.1	0.0	1.2	0.19	25.2	89.3	60.4	4.5
24.04.24	0.0	0.6	0.02	N	26.0	38.3	33.8	0.0	1.3	0.22	24.3	83.3	55.3	2.5
25.04.24	0.0	0.5	0.06	NE	26.0	39.3	33.9	0.0	1.4	0.28	22.2	65.2	43.9	0.0
26.04.24	0.0	0.5	0.07	N	25.0	38.1	32.9	0.0	1.3	0.26	28.1	95.1	45.3	0.0
27.04.24	0.0	0.6	0.06	NW	24.2	39.0	33.5	0.0	1.3	0.30	25.2	95.0	56.6	42.5
28.04.24	0.0	1.1	0.07	N	25.4	33.4	30.0	0.0	0.6	0.06	41.2	94.4	79.4	12.5
29.04.24	0.0	1.2	0.11	N	26.0	36.0	32.5	0.0	1.0	0.13	31.6	94.3	70.0	20.0
30.04.24	0.0	1.4	0.06	NE	25.2	40.2	33.1	0.0	1.2	0.17	25.2	90.0	64.1	53.5
				N										
	0.0	13.9	0.5		16.1	41.2	31.5	0.0	1.5	0.2	13.0	95.2	56.7	811.0
	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Total Rainfall in mm
	Wind Speed Km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			

Lafarge Umiam Mining Pvt.Limited

Daily Weather Monitoring Data For the Month of May 2024

(Based on Hourly Readings from 00:00 Hrs. to 23:00 Hrs.)

Date	Wind Speed km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			Rainfall in mm
	Min	Max	Avg.		Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	
01.05.24	0.0	0.4	0.02	NNE	23.0	39.1	32.1	0.0	1.2	0.16	29.1	94.3	73.4	45.5
02.05.24	0.0	1.1	0.15	N	25.0	34.0	31.7	0.0	1.2	0.17	31.3	93.4	67.1	12.0
03.05.24	0.0	0.8	0.09	NW	22.0	39.1	33.6	0.0	1.4	0.33	21.1	93.5	54.0	0.0
04.05.24	0.0	4.6	0.24	N	22.5	41.2	33.7	0.0	1.3	0.29	21.1	93.4	54.4	40.0
05.05.24	0.0	3.9	0.32	NE	19.0	32.6	24.3	0.0	0.3	0.05	56.2	94.0	87.4	54.0
06.05.24	0.0	1.6	0.11	N	20.0	25.3	21.8	0.0	0.5	0.08	85.3	94.0	92.8	29.0
07.05.24	0.0	0.8	0.05	NNW	21.0	43.1	31.3	0.0	1.4	0.28	26.2	93.3	56.9	7.0
08.05.24	0.0	0.5	0.05	N	21.0	43.1	28.7	0.0	1.0	0.08	27.2	93.6	62.7	0.5
09.05.24	0.0	0.7	0.06	NE	24.0	44.2	32.5	0.0	1.6	0.35	23.2	72.5	50.1	2.0
10.05.24	0.0	0.5	0.03	SW	23.1	44.5	31.6	0.0	1.2	0.33	26.8	93.6	64.4	27.0
11.05.24	0.0	0.3	0.01	S	23.0	43.5	29.4	0.0	1.4	0.23	31.2	94.2	72.4	30.0
12.05.24	0.0	1.2	0.07	NE	24.2	45.6	34.3	0.0	1.4	0.35	22.4	80.2	52.2	18.5
13.05.24	0.0	1.4	0.12	N	24.2	46.3	35.1	0.0	1.3	0.28	22.5	87.3	50.0	0.0
14.05.24	0.0	1.4	0.08	NW	28.0	46.1	36.5	0.0	1.4	0.32	23.1	70.4	47.2	0.0
15.05.24	0.0	0.5	0.10	N	29.0	40.3	35.8	0.0	1.3	0.27	24.0	65.6	46.3	3.5
16.05.24	0.0	0.6	0.08	NW	28.1	40.6	35.7	0.0	1.3	0.25	24.0	94.2	50.2	16.0
17.05.24	0.0	1.4	0.12	N	26.1	39.7	32.6	0.0	1.3	0.22	25.1	90.0	56.9	5.5
18.05.24	0.0	0.8	0.13	NE	23.1	35.8	28.9	0.0	0.5	0.09	40.1	94.1	76.4	53.0
19.05.24	0.0	0.2	0.01	N	24.0	32.5	29.4	0.0	1.0	0.12	41.1	94.2	73.7	6.0
20.05.24	0.0	0.5	0.02	N	26.0	44.0	31.2	0.0	1.3	0.12	33.5	94.2	71.9	0.0
21.05.24	0.0	1.1	0.07	NW	26.0	43.4	33.7	0.0	1.3	0.29	25.1	87.0	57.1	0.0
22.05.24	0.0	0.7	0.03	N	26.2	42.5	36.4	0.0	1.3	0.28	24.2	92.1	52.4	0.0
23.05.24	0.0	0.2	0.02	NNE	29.2	43.8	37.4	0.0	1.4	0.36	24.4	66.3	44.6	0.0
24.05.24	0.0	1.9	0.19	N	28.1	45.3	37.0	0.0	1.4	0.35	24.1	72.4	46.7	0.0
25.05.24	0.0	0.3	0.02	NW	27.3	42.8	36.8	0.0	1.4	0.36	24.2	94.1	55.5	0.0
26.05.24	0.0	1.9	0.14	N	26.0	45.2	35.6	0.0	1.4	0.29	24.5	94.4	67.3	78.5
27.05.24	0.0	1.6	0.33	NNW	25.0	40.5	29.3	0.0	0.4	0.03	31.3	94.1	81.2	42.5
28.05.24	0.0	1.1	0.26	N	24.0	28.5	26.6	0.0	0.1	0.00	87.0	94.2	93.0	187.5
29.05.24	0.0	1.4	0.16	NW	23.8	28.2	25.2	0.0	0.0	0.00	86.3	94.0	92.5	81.5
30.05.24	0.0	3.3	0.33	N	22.0	26.3	23.7	0.0	0.2	0.01	93.0	94.3	93.3	14.5
31.05.24	0.0	2.1	0.19	NE	23.0	32.2	26.7	0.0	0.4	0.04	72.2	94.3	88.2	0.0
				N										
	0.0	4.6	0.1		19.0	46.3	31.6	0.0	1.6	0.2	21.1	94.4	65.6	754.0
	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Total Rainfall in mm
	Wind Speed Km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			

Lafarge Umiam Mining Pvt.Limited

Daily Weather Monitoring Data For the Month of Jun 2024

(Based on Hourly Readings from 00:00 Hrs. to 23:00 Hrs.)

Date	Wind Speed km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			Rainfall in mm
	Min	Max	Avg.		Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	
01.06.24	0.0	1.5	0.13	NW	25.3	41.2	32.9	0.0	1.4	0.30	33.1	94.0	68.7	16.0
02.06.24	0.0	5.6	0.51	N	23.2	42.1	31.4	0.0	1.4	0.27	33.1	94.0	69.5	22.0
03.06.24	0.0	0.3	0.03	NW	22.2	41.4	26.9	0.0	0.4	0.03	38.5	94.4	85.7	11.0
04.06.24	0.0	0.3	0.02	NNE	23.0	33.1	26.2	0.0	1.0	0.09	60.2	94.1	88.4	1.0
05.06.24	0.0	0.3	0.01	N	34.0	39.2	27.8	0.0	1.2	0.17	42.1	94.1	82.5	0.5
06.06.24	0.0	1.0	0.09	NNW	24.2	39.2	28.8	0.0	1.2	0.15	42.1	94.0	78.2	1.0
07.06.24	0.0	1.2	0.05	N	25.0	39.4	30.9	0.0	1.3	0.23	40.1	93.3	71.5	9.5
08.06.24	0.0	1.2	0.08	NW	26.1	39.2	30.6	0.0	1.2	0.15	41.3	94.1	73.3	2.0
09.06.24	0.0	0.8	0.04	N	24.1	39.4	30.4	0.0	1.3	0.24	40.1	94.0	72.2	9.5
10.06.24	0.0	1.1	0.07	NW	25.2	32.6	27.2	0.0	0.3	0.05	67.4	94.4	89.2	0.5
11.06.24	0.0	1.5	0.09	N	26.0	40.5	30.6	0.0	1.0	0.10	44.0	94.4	78.2	2.5
12.06.24	0.0	0.7	0.03	NNW	25.0	41.4	30.9	0.0	1.3	0.18	40.2	94.2	76.7	27.5
13.06.24	0.0	1.2	0.09	N	24.0	26.5	24.8	0.0	0.0	0.00	93.1	94.1	93.4	130.0
14.06.24	0.0	1.1	0.08	N	24.0	31.2	25.6	0.0	0.2	0.01	77.4	94.0	91.0	23.5
15.06.24	0.0	2.3	0.29	NNE	23.1	25.3	24.4	0.0	0.0	0.00	93.0	94.0	93.2	240.0
16.06.24	0.0	0.8	0.08	NW	23.1	25.1	24.3	0.0	0.0	0.00	93.0	93.2	93.1	211.0
17.06.24	0.0	1.6	0.09	N	23.1	25.4	24.4	0.0	0.0	0.00	93.0	93.3	93.1	93.0
18.06.24	0.0	0.7	0.07	NW	23.0	25.3	24.0	0.0	0.0	0.00	93.0	93.3	93.1	168.5
19.06.24	0.0	0.6	0.03	NE	23.0	37.2	25.0	0.0	0.3	0.02	53.0	93.3	90.2	27.5
20.06.24	0.0	0.5	0.04	N	23.0	38.4	26.9	0.0	0.5	0.05	45.2	94.3	86.8	18.5
21.06.24	0.0	1.1	0.07	NW	25.0	40.5	30.8	0.0	0.5	0.08	43.1	94.2	75.3	18.0
22.06.24	0.0	0.8	0.07	N	23.0	38.3	27.2	0.0	0.5	0.03	49.1	94.2	88.7	8.5
23.06.24	0.0	1.2	0.08	NNW	27.0	39.5	31.5	0.0	1.0	0.12	36.6	94.2	73.6	29.5
24.06.24	0.0	0.4	0.02	NW	28.1	36.0	30.8	0.0	0.6	0.07	65.1	94.6	85.2	32.0
25.06.24	0.0	1.0	0.08	NW	28.0	42.0	33.4	0.0	0.4	0.08	50.1	94.6	81.3	16.0
26.06.24	0.0	1.4	0.06	N	32.0	42.0	36.0	0.0	1.3	0.25	32.1	94.2	64.5	8.5
27.06.24	0.0	2.0	0.16	NW	30.1	41.2	34.1	0.0	1.0	0.11	41.3	94.6	83.0	43.5
28.06.24	0.0	1.2	0.12	N	30.0	41.2	32.0	0.0	1.6	0.10	43.0	94.2	87.3	3.5
29.06.24	0.0	0.5	0.04	NW	29.2	31.2	30.3	0.0	0.0	0.00	94.0	94.2	94.0	39.5
30.06.24	0.0	0.8	0.06	NNW	30.0	33.3	31.5	0.0	0.0	0.00	94.0	94.3	94.1	104.5
				NW										
	0.0	5.6	0.1		22.2	42.1	29.1	0.0	1.6	0.1	32.1	94.6	83.2	1318.5
	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Total Rainfall in mm
	Wind Speed Km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			

Lafarge Umiam Mining Pvt.Limited

Daily Weather Monitoring Data For the Month of Jul 2024

(Based on Hourly Readings from 00:00 Hrs. to 23:00 Hrs.)

Date	Wind Speed km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			Rainfall in mm
	Min	Max	Avg.		Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	
01.07.24	0.0	1.5	0.13	NNW	25.3	36.2	30.0	0.0	0.6	0.05	52.0	94.2	89.3	262.0
02.07.24	0.0	0.9	0.08	NW	25.3	38.4	32.0	0.0	1.0	0.12	51.1	94.1	82.5	96.0
03.07.24	0.0	1.1	0.09	N	28.4	38.5	31.9	0.0	0.2	0.03	88.2	94.4	93.6	24.0
04.07.24	0.0	0.8	0.06	N	27.6	37.1	31.8	0.0	1.1	0.06	41.0	98.3	85.4	32.0
05.07.24	0.0	1.8	0.12	NE	26.0	32.6	30.8	0.0	0.0	0.00	94.0	94.3	94.1	85.0
06.07.24	0.0	0.9	0.11	N	28.0	36.7	31.2	0.0	1.0	0.11	46.5	97.4	86.6	72.0
07.07.24	0.0	0.8	0.07	N	30.6	37.5	32.4	0.0	1.1	0.17	38.3	94.2	74.0	0.0
08.07.24	0.0	1.6	0.13	NW	27.0	35.6	30.4	0.0	0.6	0.05	51.0	94.3	84.4	0.0
09.07.24	0.0	1.2	0.14	N	29.2	37.4	32.0	0.0	0.4	0.05	65.0	94.5	90.2	15.0
10.07.24	0.0	0.8	0.09	NE	25.0	36.2	32.4	0.0	0.6	0.04	45.1	95.1	85.7	97.0
11.07.24	0.0	1.4	0.12	N	25.0	30.4	27.3	0.0	0.2	0.02	82.0	94.5	92.9	245.0
12.07.24	0.0	0.9	0.10	NE	24.2	30.0	26.5	0.0	0.2	0.01	87.0	94.5	92.9	95.5
13.07.24	0.0	1.2	0.14	N	25.1	36.4	29.0	0.0	0.4	0.04	41.4	94.3	82.9	74.0
14.07.24	0.0	1.8	0.17	NW	25.0	38.4	29.8	0.0	0.3	0.04	41.5	94.4	81.6	22.0
15.07.24	0.0	0.8	0.09	N	26.1	35.0	30.2	0.0	1.3	0.25	33.1	94.4	71.9	0.0
16.07.24	0.0	1.1	0.11	N	27.0	32.2	29.5	0.0	0.6	0.08	38.3	94.4	75.8	0.0
17.07.24	0.0	1.1	0.09	NW	26.3	33.4	30.2	0.0	1.4	0.23	36.0	94.3	73.3	0.0
18.07.24	0.0	1.5	0.13	NE	26.1	35.6	29.8	0.0	1.2	0.19	33.0	94.2	65.1	0.0
19.07.24	0.0	0.9	0.12	N	25.1	38.2	31.4	0.0	1.2	0.21	34.1	94.1	68.9	75.0
20.07.24	0.0	1.2	0.10	NW	25.1	39.4	32.6	0.0	1.2	0.15	35.2	94.3	71.6	82.0
21.07.24	0.0	0.8	0.09	N	26.0	35.5	30.4	0.0	1.2	0.17	32.5	94.4	74.9	36.0
22.07.24	0.0	0.9	0.08	N	26.1	34.2	28.1	0.0	0.5	0.05	68.5	94.5	90.2	87.0
23.07.24	0.0	1.4	0.13	NE	26.0	36.2	28.5	0.0	0.4	0.05	57.3	94.3	87.7	96.5
24.07.24	0.0	1.1	0.11	N	26.0	41.8	32.2	0.0	1.1	0.20	37.5	94.5	75.4	18.0
25.07.24	0.0	1.2	0.12	N	26.1	42.5	33.1	0.0	1.2	0.24	30.5	94.2	71.1	10.0
26.07.24	0.0	0.9	0.11	NE	27.8	40.5	35.8	0.0	1.3	0.31	29.1	92.1	58.6	0.0
27.07.24	0.0	0.3	0.02	NNW	30.1	41.2	36.5	0.0	1.2	0.27	30.5	94.3	58.4	0.0
28.07.24	0.0	0.8	0.08	N	27.8	40.4	34.8	0.0	1.3	0.23	32.5	94.2	67.6	32.5
29.07.24	0.0	1.1	0.13	SW	26.1	40.2	34.6	0.0	1.4	0.09	30.5	97.4	80.7	107.5
30.07.24	0.0	1.4	0.11	N	26.4	39.8	28.2	0.0	0.5	0.05	47.0	94.4	88.3	52.5
31.07.24	0.0	0.9	0.10	N	25.2	40.0	29.5	0.0	0.3	0.04	46.3	94.4	83.7	26.0
				N										
	0.0	1.8	0.1		24.2	42.5	31.1	0.0	1.4	0.1	29.1	98.3	80.0	1742.5
	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Total Rainfall in mm
	Wind Speed Km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			

Lafarge Umiam Mining Pvt.Limited

Daily Weather Monitoring Data For the Month of Aug 2024

(Based on Hourly Readings from 00:00 Hrs. to 23:00 Hrs.)

Date	Wind Speed km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			Rainfall in mm
	Min	Max	Avg.		Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	
01.08.24	0.0	0.4	0.05	NNW	25.0	31.1	26.2	0.0	0.1	0.02	65.2	94.3	90.6	42.0
02.08.24	0.0	0.9	0.08	NE	24.2	26.4	25.3	0.0	0.0	0.00	92.0	94.1	93.5	76.0
03.08.24	0.0	1.2	0.09	NW	24.2	30.4	25.8	0.0	0.2	0.02	86.1	94.5	93.3	185.0
04.08.24	0.0	1.5	0.13	NNE	25.0	42.1	28.9	0.0	0.6	0.07	38.2	94.2	84.2	57.0
05.08.24	0.0	0.8	0.07	SW	25.0	32.0	26.4	0.0	0.4	0.04	74.1	94.5	92.6	32.0
06.08.24	0.0	1.2	0.10	SSW	25.0	39.2	28.2	0.0	0.4	0.08	47.5	94.4	85.8	52.5
07.08.24	0.0	0.8	0.11	NNE	25.0	40.2	27.8	0.0	0.4	0.05	42.4	94.5	88.2	35.5
08.08.24	0.0	0.7	0.09	NE	25.0	29.1	26.3	0.0	0.4	0.03	89.0	94.4	93.3	58.0
09.08.24	0.0	1.1	0.10	NW	25.0	28.2	25.9	0.0	0.1	0.01	92.0	94.4	94.0	72.0
10.08.24	0.0	1.2	0.10	SSW	25.0	30.0	26.3	0.0	0.5	0.03	94.0	94.5	94.1	51.0
11.08.24	0.0	0.6	0.07	SW	25.0	28.4	25.7	0.0	0.0	0.00	92.5	94.4	94.0	142.0
12.08.24	0.0	1.4	0.10	NNE	25.1	30.2	26.5	0.0	0.2	0.01	85.2	94.5	93.3	25.0
13.08.24	0.0	0.6	0.06	NW	25.2	41.6	30.5	0.0	0.6	0.10	41.2	94.4	79.6	2.0
14.08.24	0.0	1.1	0.08	NE	26.1	40.2	31.2	0.0	0.5	0.06	33.1	94.4	73.6	0.0
15.08.24	0.0	6.8	0.29	NNW	25.4	37.3	29.8	0.0	0.6	0.10	50.4	94.4	80.5	0.0
16.08.24	0.0	0.8	0.05	N	23.3	38.3	29.9	0.0	0.6	0.11	49.0	94.4	78.1	16.0
17.08.24	0.0	1.2	0.11	NNW	25.2	34.1	28.3	0.0	0.4	0.05	63.2	94.3	86.0	5.0
18.08.24	0.0	1.4	0.12	N	26.0	35.2	30.6	0.0	0.6	0.11	30.3	94.1	69.7	43.0
19.08.24	0.0	0.8	0.03	NE	24.1	30.2	27.2	0.0	0.4	0.05	59.2	94.3	88.7	27.0
20.08.24	0.0	0.8	0.09	NNW	24.0	25.6	24.8	0.0	0.0	0.00	93.0	94.0	93.4	142.0
21.08.24	0.0	1.2	0.10	NE	24.2	26.3	25.4	0.0	0.0	0.00	93.3	94.2	93.7	235.0
22.08.24	0.0	1.5	0.09	SW	24.2	33.5	26.8	0.0	0.2	0.02	64.0	94.3	89.0	55.5
23.08.24	0.0	2.2	0.18	SSE	25.0	34.2	30.8	0.0	1.0	0.12	32.2	94.0	71.4	12.0
24.08.24	0.0	1.4	0.09	NW	24.2	39.0	28.8	0.0	0.5	0.06	45.2	94.3	83.4	23.5
25.08.24	0.0	1.1	0.14	N	24.2	38.2	31.4	0.0	0.4	0.08	31.0	94.4	73.7	0.0
26.08.24	0.0	1.4	0.07	NNE	26.3	39.7	32.4	0.0	0.6	0.11	33.4	94.2	69.7	0.0
27.08.24	0.0	1.6	0.12	NW	28.1	40.2	33.8	0.0	0.4	0.08	32.3	94.2	68.5	0.0
28.08.24	0.0	1.2	0.11	N	28.0	37.5	32.1	0.0	0.5	0.09	34.2	94.3	71.8	0.0
29.08.24	0.0	1.1	0.10	SW	30.1	37.3	32.4	0.0	0.3	0.04	35.3	94.3	71.9	0.0
30.08.24	0.0	1.2	0.09	SSW	29.1	38.3	32.7	0.0	0.4	0.08	32.5	94.2	66.8	0.0
31.08.24	0.0	1.4	0.08	N	30.2	36.8	33.4	0.0	0.2	0.06	38.4	92.6	74.2	25.0
				NW										
	0.0	6.8	0.1		23.3	42.1	28.8	0.0	1.0	0.1	30.3	94.5	83.2	1414.0
	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Total Rainfall in mm
	Wind Speed Km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			

Lafarge Umiam Mining Pvt.Limited

Daily Weather Monitoring Data For the Month of Sep 2024

(Based on Hourly Readings from 00:00 Hrs. to 23:00 Hrs.)

Date	Wind Speed km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			Rainfall in mm
	Min	Max	Avg.		Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	
01.09.24	0.0	0.2	0.01	NW	25.1	35.5	29.0	0.0	0.1	0.01	65.2	94.4	92.2	4.0
02.09.24	0.0	0.5	0.02	N	27.0	38.5	33.2	0.0	0.5	0.07	33.0	94.5	92.2	0.0
03.09.24	0.0	0.3	0.02	NE	26.1	36.3	32.6	0.0	0.6	0.07	39.5	94.5	81.0	0.0
04.09.24	0.0	1.1	0.09	SE	27.4	39.4	34.5	0.0	0.5	0.06	40.6	94.0	76.3	0.0
05.09.24	0.0	1.2	0.08	NE	27.5	40.2	34.2	0.0	0.4	0.04	35.0	94.5	81.4	0.0
06.09.24	0.0	0.8	0.04	N	29.1	41.2	34.1	0.0	0.3	0.05	33.1	91.2	66.6	0.0
07.09.24	0.0	0.7	0.03	NNW	28.3	42.3	33.8	0.0	1.0	0.09	31.0	94.2	71.0	0.0
08.09.24	0.0	1.1	0.07	NE	27.2	39.4	33.5	0.0	0.6	0.09	32.2	94.4	67.9	0.0
09.09.24	0.0	0.6	0.04	NNE	26.2	38.5	32.6	0.0	0.4	0.07	35.5	90.2	66.0	0.0
10.09.24	0.0	0.8	0.07	NE	26.5	39.7	33.8	0.0	0.5	0.06	37.0	94.5	73.6	0.0
11.09.24	0.0	1.2	0.09	SW	26.8	40.2	34.5	0.0	0.5	0.08	35.3	94.4	67.0	0.0
12.09.24	0.0	0.8	0.06	SSE	27.2	41.5	34.2	0.0	0.6	0.08	26.1	93.3	59.0	0.0
13.09.24	0.0	0.3	0.01	NE	26.8	42.5	34.6	0.0	0.6	0.14	30.0	80.0	56.9	0.0
14.09.24	0.0	1.1	0.07	NW	26.5	43.2	34.8	0.0	0.3	0.06	40.5	93.0	67.2	0.0
15.09.24	0.0	0.5	0.02	N	26.4	44.5	35.1	0.0	0.3	0.03	46.6	97.5	73.9	0.0
16.09.24	0.0	0.8	0.05	NNE	26.4	44.8	34.9	0.0	0.5	0.09	32.6	97.0	73.0	0.0
17.09.24	0.0	1.4	0.09	NE	26.2	44.6	33.8	0.0	0.5	0.09	49.0	97.3	75.0	0.0
18.09.24	0.0	1.1	0.07	NNW	26.5	39.6	32.4	0.0	0.5	0.10	31.4	94.4	67.9	0.0
19.09.24	0.0	0.8	0.06	NNE	26.2	40.5	33.8	0.0	0.5	0.07	29.0	79.4	54.3	0.0
20.09.24	0.0	1.1	0.09	NE	26.4	42.5	34.6	0.0	1.0	0.14	31.1	82.1	54.7	0.0
21.09.24	0.0	0.9	0.05	N	26.4	41.2	34.2	0.0	0.6	0.06	31.2	94.0	72.7	43.0
22.09.24	0.0	0.8	0.03	NW	24.0	39.6	33.2	0.0	0.5	0.08	31.2	94.2	67.6	0.0
23.09.24	0.0	0.2	0.01	NE	25.8	40.2	33.8	0.0	0.3	0.05	31.1	83.6	55.4	57.5
24.09.24	0.0	1.1	0.05	SSW	24.1	40.0	30.8	0.0	0.4	0.07	44.0	94.2	74.7	83.0
25.09.24	0.0	1.2	0.09	SW	24.0	27.6	25.2	0.0	0.1	0.00	93.3	94.3	93.7	38.0
26.09.24	0.0	1.1	0.08	NE	24.0	26.1	24.6	0.0	0.0	0.00	93.2	94.1	93.4	23.0
27.09.24	0.0	0.6	0.03	NNE	23.3	30.3	27.3	0.0	0.6	0.12	34.1	93.3	74.0	11.0
28.09.24	0.0	0.8	0.04	NE	23.0	30.4	27.6	0.0	0.5	0.04	49.5	94.6	88.3	18.0
29.09.24	0.0	1.0	0.07	N	24.0	26.5	25.0	0.0	0.0	0.00	93.2	94.2	93.8	5.5
30.09.24	0.0	0.9	0.06	NE	24.0	32.4	26.8	0.0	0.3	0.05	55.6	94.4	84.1	8.0
				NE										
	0.0	1.4	0.1		23.0	44.8	32.1	0.0	1.0	0.1	26.1	97.5	73.8	291.0
	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Total Rainfall in mm
	Wind Speed Km/hr			Wind Dir.*	Ambient Temp.°C			Solar CCM			R. Humidity %			

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 02 - 04 - 2024					
STATION : SHELLA BAZAR (INFRONT OF PWD GUEST HOUSE) (NON MARKET DAY)					
STATION CODE : LN-1					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	2-Apr-24	6:00	7:00	51.2
2			7:00	8:00	52.4
3			8:00	9:00	53.5
4			9:00	10:00	54.8
5			10:00	11:00	55.6
6			11:00	12:00	56.9
7			12:00	13:00	57.8
8			13:00	14:00	58.4
9			14:00	15:00	59.6
10			15:00	16:00	58.7
11			16:00	17:00	57.4
12			17:00	18:00	56.2
13			18:00	19:00	55.4
14			19:00	20:00	54.6
15			20:00	21:00	52.8
16			21:00	22:00	51.3
			Leq day in dB(A)		56.1
17	Night	02 & 03-Apr-24	22:00	23:00	49.2
18			23:00	0:00	48.7
19			0:00	1:00	47.2
20			1:00	2:00	46.8
21			2:00	3:00	45.2
22			3:00	4:00	46.2
23			4:00	5:00	47.1
24			5:00	6:00	48.4
			Leq Night in dB(A)		47.5

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE: 08- 04 - 2024					
STATION : PYRKAN VILLAGE (INFRONT OF RAMKRISHNA SCHOOL)					
STATION CODE : LN-2					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	8-Apr-24	6:00	7:00	49.8
2			7:00	8:00	50.2
3			8:00	9:00	51.4
4			9:00	10:00	52.6
5			10:00	11:00	53.8
6			11:00	12:00	54.7
7			12:00	13:00	55.6
8			13:00	14:00	56.8
9			14:00	15:00	57.4
10			15:00	16:00	56.2
11			16:00	17:00	55.8
12			17:00	18:00	54.3
13			18:00	19:00	53.2
14			19:00	20:00	52.7
15			20:00	21:00	51.4
16			21:00	22:00	49.2
			Leq day in dB(A)		54.1
17	Night	8 & 9-Apr-24	22:00	23:00	46.8
18			23:00	0:00	45.2
19			0:00	1:00	44.2
20			1:00	2:00	42.8
21			2:00	3:00	43.8
22			3:00	4:00	44.2
23			4:00	5:00	44.8
24			5:00	6:00	45.1
			Leq Night in dB(A)		44.8

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 12-04-2024					
STATION : PHALANG KA RUH VILLAGE					
STATION CODE : LN-3					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	12-Apr-24	6:00	7:00	48.7
2			7:00	8:00	49.5
3			8:00	9:00	50.4
4			9:00	10:00	51.2
5			10:00	11:00	52.8
6			11:00	12:00	53.6
7			12:00	13:00	54.7
8			13:00	14:00	55.8
9			14:00	15:00	56.7
10			15:00	16:00	57.2
11			16:00	17:00	56.5
12			17:00	18:00	54.3
13			18:00	19:00	53.7
14			19:00	20:00	52.4
15			20:00	21:00	50.5
16			21:00	22:00	48.6
			Leq day in dB(A)		53.8
17	Night	12 & 13-Apr-24	22:00	23:00	46.2
18			23:00	0:00	45.4
19			0:00	1:00	44.3
20			1:00	2:00	42.7
21			2:00	3:00	41.8
22			3:00	4:00	43.5
23			4:00	5:00	44.8
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.5

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : - 15 - 04 - 2024					
STATION: OFFICE AREA					
STATION CODE : LN-4					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	15-Apr-24	6:00	7:00	52.5
2			7:00	8:00	54.6
3			8:00	9:00	56.8
4			9:00	10:00	57.4
5			10:00	11:00	59.8
6			11:00	12:00	60.5
7			12:00	13:00	62.7
8			13:00	14:00	63.8
9			14:00	15:00	61.5
10			15:00	16:00	59.8
11			16:00	17:00	57.9
12			17:00	18:00	58.4
13			18:00	19:00	56.8
14			19:00	20:00	55.7
15			20:00	21:00	54.3
16			21:00	22:00	52.9
			Leq day in dB(A)		59.0
17	Night	15 & 16-Apr-24	22:00	23:00	51.8
18			23:00	0:00	50.4
19			0:00	1:00	48.7
20			1:00	2:00	47.5
21			2:00	3:00	46.1
22			3:00	4:00	47.8
23			4:00	5:00	48.9
24			5:00	6:00	50.2
			Leq Night in dB(A)		49.3

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : -22 -04 - 2024

STATION : SHELLA PUNJEE

STATION CODE : LN-5

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	22-Apr-24	6:00	7:00	48.5
2			7:00	8:00	49.7
3			8:00	9:00	50.2
4			9:00	10:00	51.6
5			10:00	11:00	52.5
6			11:00	12:00	53.4
7			12:00	13:00	54.8
8			13:00	14:00	55.6
9			14:00	15:00	56.4
10			15:00	16:00	55.8
11			16:00	17:00	54.6
12			17:00	18:00	53.5
13			18:00	19:00	52.4
14			19:00	20:00	51.7
15			20:00	21:00	49.8
16			21:00	22:00	48.2
			Leq day in dB(A)		53.1
17	Night	22 & 23-Apr-24	22:00	23:00	46.2
18			23:00	0:00	45.6
19			0:00	1:00	43.1
20			1:00	2:00	42.5
21			2:00	3:00	41.2
22			3:00	4:00	43.6
23			4:00	5:00	44.8
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.4

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 29-04-2024

STATION : MAWRYNGKHONG

STATION CODE : LN-6

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	29-Apr-24	6:00	7:00	48.5
2			7:00	8:00	49.7
3			8:00	9:00	50.2
4			9:00	10:00	52.6
5			10:00	11:00	53.4
6			11:00	12:00	54.8
7			12:00	13:00	55.7
8			13:00	14:00	56.1
9			14:00	15:00	57.4
10			15:00	16:00	56.2
11			16:00	17:00	55.3
12			17:00	18:00	54.2
13			18:00	19:00	52.8
14			19:00	20:00	51.4
15			20:00	21:00	50.7
16			21:00	22:00	48.2
			Leq day in dB(A)		53.8
17	Night	29 & 30-Apr-24	22:00	23:00	45.6
18			23:00	0:00	44.1
19			0:00	1:00	42.4
20			1:00	2:00	41.2
21			2:00	3:00	43.6
22			3:00	4:00	44.8
23			4:00	5:00	45.2
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.3

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : 02 - 05 - 2024

STATION : SHELLA BAZAR (INFRONT OF PWD GUEST HOUSE) (NON MARKET DAY)

STATION CODE : LN-1

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	2-May-24	6:00	7:00	50.2
2			7:00	8:00	51.4
3			8:00	9:00	53.5
4			9:00	10:00	54.6
5			10:00	11:00	55.8
6			11:00	12:00	56.8
7			12:00	13:00	57.4
8			13:00	14:00	58.6
9			14:00	15:00	57.5
10			15:00	16:00	56.8
11			16:00	17:00	57.2
12			17:00	18:00	57.6
13			18:00	19:00	56.4
14			19:00	20:00	55.2
15			20:00	21:00	53.6
16			21:00	22:00	52.2
			Leq day in dB(A)		55.9
17	Night	02 & 03-May-24	22:00	23:00	50.4
18			23:00	0:00	49.5
19			0:00	1:00	47.4
20			1:00	2:00	46.8
21			2:00	3:00	44.8
22			3:00	4:00	45.7
23			4:00	5:00	46.8
24			5:00	6:00	47.9
			Leq Night in dB(A)		47.8

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE: 06- 05 - 2024

STATION : PYRKAN VILLAGE (INFRONT OF RAMKRISHNA SCHOOL)

STATION CODE : LN-2

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	6-May-24	6:00	7:00	48.5
2			7:00	8:00	49.7
3			8:00	9:00	50.2
4			9:00	10:00	51.4
5			10:00	11:00	52.6
6			11:00	12:00	53.8
7			12:00	13:00	54.7
8			13:00	14:00	55.6
9			14:00	15:00	56.4
10			15:00	16:00	55.4
11			16:00	17:00	54.3
12			17:00	18:00	53.2
13			18:00	19:00	52.7
14			19:00	20:00	51.8
15			20:00	21:00	50.4
16			21:00	22:00	48.5
			Leq day in dB(A)		53.1
17	Night	6 & 7-May-24	22:00	23:00	46.5
18			23:00	0:00	45.2
19			0:00	1:00	44.1
20			1:00	2:00	42.6
21			2:00	3:00	41.2
22			3:00	4:00	43.8
23			4:00	5:00	44.5
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.5

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 15-05-2024					
STATION : PHALANG KA RUH VILLAGE					
STATION CODE : LN-3					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	15-May-24	6:00	7:00	48.6
2			7:00	8:00	49.5
3			8:00	9:00	50.2
4			9:00	10:00	51.4
5			10:00	11:00	52.6
6			11:00	12:00	53.8
7			12:00	13:00	54.6
8			13:00	14:00	55.4
9			14:00	15:00	56.2
10			15:00	16:00	55.3
11			16:00	17:00	54.2
12			17:00	18:00	53.1
13			18:00	19:00	52.6
14			19:00	20:00	51.2
15			20:00	21:00	49.7
16			21:00	22:00	48.4
			Leq day in dB(A)		53.0
17	Night	15 & 16-May-24	22:00	23:00	46.2
18			23:00	0:00	45.4
19			0:00	1:00	43.1
20			1:00	2:00	41.6
21			2:00	3:00	42.5
22			3:00	4:00	43.8
23			4:00	5:00	44.7
24			5:00	6:00	45.8
			Leq Night in dB(A)		44.4

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 20 - 05- 2024

STATION: OFFICE AREA

STATION CODE : LN-4

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	20-May-24	6:00	7:00	53.6
2			7:00	8:00	54.7
3			8:00	9:00	55.6
4			9:00	10:00	56.8
5			10:00	11:00	57.4
6			11:00	12:00	59.6
7			12:00	13:00	61.2
8			13:00	14:00	63.5
9			14:00	15:00	62.1
10			15:00	16:00	60.5
11			16:00	17:00	59.7
12			17:00	18:00	58.6
13			18:00	19:00	57.2
14			19:00	20:00	55.6
15			20:00	21:00	53.2
16			21:00	22:00	52.5
			Leq day in dB(A)		58.8
17	Night	20 & 21-May-24	22:00	23:00	51.7
18			23:00	0:00	49.5
19			0:00	1:00	48.2
20			1:00	2:00	47.3
21			2:00	3:00	46.1
22			3:00	4:00	47.5
23			4:00	5:00	48.2
24			5:00	6:00	50.1
			Leq Night in dB(A)		48.9

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : -24 -05 - 2024

STATION : SHELLA PUNJEE

STATION CODE : LN-5

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	24-May-24	6:00	7:00	49.6
2			7:00	8:00	50.2
3			8:00	9:00	51.4
4			9:00	10:00	52.3
5			10:00	11:00	53.6
6			11:00	12:00	54.8
7			12:00	13:00	55.7
8			13:00	14:00	56.4
9			14:00	15:00	55.3
10			15:00	16:00	54.2
11			16:00	17:00	53.1
12			17:00	18:00	52.7
13			18:00	19:00	51.4
14			19:00	20:00	50.2
15			20:00	21:00	49.5
16			21:00	22:00	48.1
			Leq day in dB(A)		53.1
17	Night	24 & 25-May-24	22:00	23:00	46.5
18			23:00	0:00	45.2
19			0:00	1:00	43.1
20			1:00	2:00	41.2
21			2:00	3:00	43.7
22			3:00	4:00	44.8
23			4:00	5:00	45.1
24			5:00	6:00	45.8
			Leq Night in dB(A)		44.7

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 29-05-2024

STATION : MAWRYNGKHONG

STATION CODE : LN-6

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	29-May-24	6:00	7:00	49.2
2			7:00	8:00	50.5
3			8:00	9:00	51.2
4			9:00	10:00	52.3
5			10:00	11:00	53.5
6			11:00	12:00	54.8
7			12:00	13:00	55.6
8			13:00	14:00	56.8
9			14:00	15:00	55.2
10			15:00	16:00	54.3
11			16:00	17:00	53.1
12			17:00	18:00	52.7
13			18:00	19:00	51.8
14			19:00	20:00	50.5
15			20:00	21:00	49.8
16			21:00	22:00	48.5
			Leq day in dB(A)		53.1
17	Night	29 & 30-May-24	22:00	23:00	46.5
18			23:00	0:00	45.2
19			0:00	1:00	43.6
20			1:00	2:00	41.8
21			2:00	3:00	43.5
22			3:00	4:00	44.2
23			4:00	5:00	45.1
24			5:00	6:00	45.8
			Leq Night in dB(A)		44.7

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 03 -06- 2024					
STATION : SHELLA BAZAR (INFRONT OF PWD GUEST HOUSE) (NON MARKET DAY)					
STATION CODE : LN-1					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	3-Jun-24	6:00	7:00	51.2
2			7:00	8:00	52.4
3			8:00	9:00	53.6
4			9:00	10:00	54.8
5			10:00	11:00	55.7
6			11:00	12:00	56.8
7			12:00	13:00	57.9
8			13:00	14:00	58.2
9			14:00	15:00	57.5
10			15:00	16:00	57.9
11			16:00	17:00	58.8
12			17:00	18:00	57.6
13			18:00	19:00	56.4
14			19:00	20:00	55.4
15			20:00	21:00	54.6
16			21:00	22:00	52.1
			Leq day in dB(A)		56.2
17	Night	03 & 04-Jun-24	22:00	23:00	50.7
18			23:00	0:00	48.5
19			0:00	1:00	46.4
20			1:00	2:00	45.1
21			2:00	3:00	44.2
22			3:00	4:00	45.6
23			4:00	5:00	46.2
24			5:00	6:00	47.1
			Leq Night in dB(A)		47.2

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE: 10- 06 - 2024					
STATION : PYRKAN VILLAGE (INFRONT OF RAMKRISHNA SCHOOL)					
STATION CODE : LN-2					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	10-Jun-24	6:00	7:00	48.5
2			7:00	8:00	49.7
3			8:00	9:00	50.2
4			9:00	10:00	51.4
5			10:00	11:00	52.6
6			11:00	12:00	53.5
7			12:00	13:00	54.8
8			13:00	14:00	55.6
9			14:00	15:00	56.8
10			15:00	16:00	55.4
11			16:00	17:00	54.3
12			17:00	18:00	53.6
13			18:00	19:00	52.1
14			19:00	20:00	51.6
15			20:00	21:00	49.5
16			21:00	22:00	48.2
			Leq day in dB(A)		53.1
17	Night	10 & 11-Jun-24	22:00	23:00	46.2
18			23:00	0:00	45.1
19			0:00	1:00	44.2
20			1:00	2:00	42.5
21			2:00	3:00	41.2
22			3:00	4:00	43.8
23			4:00	5:00	44.7
24			5:00	6:00	45.8
			Leq Night in dB(A)		44.4

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 14-06-2024					
STATION : PHALANG KA RUH VILLAGE					
STATION CODE : LN-3					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	14-Jun-24	6:00	7:00	48.6
2			7:00	8:00	49.5
3			8:00	9:00	50.4
4			9:00	10:00	51.2
5			10:00	11:00	53.6
6			11:00	12:00	54.8
7			12:00	13:00	55.7
8			13:00	14:00	56.8
9			14:00	15:00	57.9
10			15:00	16:00	56.4
11			16:00	17:00	55.3
12			17:00	18:00	54.2
13			18:00	19:00	52.5
14			19:00	20:00	51.2
15			20:00	21:00	50.4
16			21:00	22:00	48.9
			Leq day in dB(A)		53.9
17	Night	14 & 15-Jun-24	22:00	23:00	46.5
18			23:00	0:00	44.2
19			0:00	1:00	42.4
20			1:00	2:00	42.6
21			2:00	3:00	43.5
22			3:00	4:00	44.2
23			4:00	5:00	44.8
24			5:00	6:00	45.9
			Leq Night in dB(A)		44.5

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 17- 06- 2024

STATION: OFFICE AREA

STATION CODE : LN-4

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	17-Jun-24	6:00	7:00	52.5
2			7:00	8:00	53.4
3			8:00	9:00	55.6
4			9:00	10:00	56.8
5			10:00	11:00	57.9
6			11:00	12:00	59.4
7			12:00	13:00	60.8
8			13:00	14:00	62.8
9			14:00	15:00	58.7
10			15:00	16:00	59.2
11			16:00	17:00	57.6
12			17:00	18:00	56.8
13			18:00	19:00	55.4
14			19:00	20:00	54.7
15			20:00	21:00	53.2
16			21:00	22:00	52.1
			Leq day in dB(A)		57.7
17	Night	17 & 18-Jun-24	22:00	23:00	51.4
18			23:00	0:00	49.8
19			0:00	1:00	47.5
20			1:00	2:00	45.6
21			2:00	3:00	46.8
22			3:00	4:00	47.9
23			4:00	5:00	48.4
24			5:00	6:00	49.1
			Leq Night in dB(A)		48.6

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : -21 -6- 2024

STATION : SHELLA PUNJEE

STATION CODE : LN-5

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	21-Jun-24	6:00	7:00	49.5
2			7:00	8:00	50.2
3			8:00	9:00	51.3
4			9:00	10:00	52.4
5			10:00	11:00	53.6
6			11:00	12:00	54.8
7			12:00	13:00	55.7
8			13:00	14:00	56.4
9			14:00	15:00	57.1
10			15:00	16:00	56.5
11			16:00	17:00	55.4
12			17:00	18:00	54.2
13			18:00	19:00	52.1
14			19:00	20:00	50.7
15			20:00	21:00	49.5
16			21:00	22:00	48.6
			Leq day in dB(A)		53.8
17	Night	21 & 22-Jun-24	22:00	23:00	45.7
18			23:00	0:00	44.5
19			0:00	1:00	42.1
20			1:00	2:00	41.8
21			2:00	3:00	42.7
22			3:00	4:00	43.5
23			4:00	5:00	44.5
24			5:00	6:00	45.9
			Leq Night in dB(A)		44.1

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 27-06-2024

STATION : MAWRYNGKHONG

STATION CODE : LN-6

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	27-Jun-24	6:00	7:00	49.1
2			7:00	8:00	50.4
3			8:00	9:00	51.2
4			9:00	10:00	52.4
5			10:00	11:00	53.8
6			11:00	12:00	54.6
7			12:00	13:00	55.7
8			13:00	14:00	56.7
9			14:00	15:00	57.8
10			15:00	16:00	56.5
11			16:00	17:00	55.4
12			17:00	18:00	54.2
13			18:00	19:00	52.5
14			19:00	20:00	50.8
15			20:00	21:00	49.6
16			21:00	22:00	48.2
			Leq day in dB(A)		54.0
17	Night	27 & 28-Jun-24	22:00	23:00	46.7
18			23:00	0:00	45.4
19			0:00	1:00	43.2
20			1:00	2:00	42.6
21			2:00	3:00	43.5
22			3:00	4:00	43.8
23			4:00	5:00	44.6
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.6

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 02 -07- 2024					
STATION : SHELLA BAZAR (INFRONT OF PWD GUEST HOUSE) (NON MARKET DAY)					
STATION CODE : LN-1					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	2-Jul-24	6:00	7:00	49.8
2			7:00	8:00	50.2
3			8:00	9:00	51.4
4			9:00	10:00	53.2
5			10:00	11:00	54.6
6			11:00	12:00	55.8
7			12:00	13:00	56.4
8			13:00	14:00	57.9
9			14:00	15:00	58.6
10			15:00	16:00	59.7
11			16:00	17:00	58.4
12			17:00	18:00	57.6
13			18:00	19:00	55.4
14			19:00	20:00	53.7
15			20:00	21:00	52.9
16			21:00	22:00	51.6
			Leq day in dB(A)		55.8
17	Night	02 & 03-Jul-24	22:00	23:00	48.5
18			23:00	0:00	47.6
19			0:00	1:00	45.4
20			1:00	2:00	44.8
21			2:00	3:00	44.1
22			3:00	4:00	45.6
23			4:00	5:00	46.4
24			5:00	6:00	47.2
			Leq Night in dB(A)		46.4

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE: 08- 07 - 2024					
STATION : PYRKAN VILLAGE (INFRONT OF RAMKRISHNA SCHOOL)					
STATION CODE : LN-2					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	8-Jul-24	6:00	7:00	48.5
2			7:00	8:00	49.7
3			8:00	9:00	50.2
4			9:00	10:00	51.6
5			10:00	11:00	52.7
6			11:00	12:00	53.8
7			12:00	13:00	54.6
8			13:00	14:00	55.7
9			14:00	15:00	56.8
10			15:00	16:00	55.4
11			16:00	17:00	54.6
12			17:00	18:00	54.8
13			18:00	19:00	52.7
14			19:00	20:00	51.5
15			20:00	21:00	50.7
16			21:00	22:00	49.2
			Leq day in dB(A)		53.3
17	Night	8 & 9-Jul-24	22:00	23:00	46.8
18			23:00	0:00	45.2
19			0:00	1:00	44.3
20			1:00	2:00	43.1
21			2:00	3:00	43.8
22			3:00	4:00	44.1
23			4:00	5:00	44.5
24			5:00	6:00	45.6
			Leq Night in dB(A)		44.8

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 12-07-2024					
STATION : PHALANG KA RUH VILLAGE					
STATION CODE : LN-3					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	12-Jul-24	6:00	7:00	49.2
2			7:00	8:00	50.7
3			8:00	9:00	51.2
4			9:00	10:00	53.6
5			10:00	11:00	54.8
6			11:00	12:00	55.7
7			12:00	13:00	56.4
8			13:00	14:00	57.6
9			14:00	15:00	56.8
10			15:00	16:00	55.4
11			16:00	17:00	54.8
12			17:00	18:00	53.2
13			18:00	19:00	52.7
14			19:00	20:00	51.2
15			20:00	21:00	50.8
16			21:00	22:00	48.6
			Leq day in dB(A)		54.1
17	Night	12 & 13-Jul-24	22:00	23:00	46.5
18			23:00	0:00	45.2
19			0:00	1:00	44.3
20			1:00	2:00	42.7
21			2:00	3:00	43.2
22			3:00	4:00	44.1
23			4:00	5:00	45.2
24			5:00	6:00	46.1
			Leq Night in dB(A)		44.8

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 16- 07- 2024

STATION: OFFICE AREA

STATION CODE : LN-4

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	16-Jul-24	6:00	7:00	52.5
2			7:00	8:00	53.6
3			8:00	9:00	54.8
4			9:00	10:00	56.7
5			10:00	11:00	58.9
6			11:00	12:00	59.7
7			12:00	13:00	61.2
8			13:00	14:00	63.5
9			14:00	15:00	62.7
10			15:00	16:00	61.5
11			16:00	17:00	59.8
12			17:00	18:00	57.6
13			18:00	19:00	55.4
14			19:00	20:00	54.6
15			20:00	21:00	53.1
16			21:00	22:00	51.9
			Leq day in dB(A)		58.8
17	Night	16 & 17-Jul-24	22:00	23:00	50.7
18			23:00	0:00	49.4
19			0:00	1:00	47.2
20			1:00	2:00	45.8
21			2:00	3:00	43.6
22			3:00	4:00	45.4
23			4:00	5:00	47.4
24			5:00	6:00	49.6
			Leq Night in dB(A)		47.9

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : -23 -07- 2024

STATION : SHELLA PUNJEE

STATION CODE : LN-5

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	23-Jul-24	6:00	7:00	49.5
2			7:00	8:00	50.2
3			8:00	9:00	51.3
4			9:00	10:00	52.6
5			10:00	11:00	53.4
6			11:00	12:00	54.8
7			12:00	13:00	55.6
8			13:00	14:00	56.8
9			14:00	15:00	57.1
10			15:00	16:00	55.8
11			16:00	17:00	53.4
12			17:00	18:00	52.7
13			18:00	19:00	51.9
14			19:00	20:00	50.4
15			20:00	21:00	49.7
16			21:00	22:00	48.6
			Leq day in dB(A)		53.5
17	Night	23 & 24-Jul-24	22:00	23:00	46.2
18			23:00	0:00	44.3
19			0:00	1:00	42.1
20			1:00	2:00	41.6
21			2:00	3:00	42.8
22			3:00	4:00	43.7
23			4:00	5:00	44.6
24			5:00	6:00	45.8
			Leq Night in dB(A)		44.2

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : - 29-07-2024					
STATION : MAWRYNGKHONG					
STATION CODE : LN-6					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	29-Jul-24	6:00	7:00	48.7
2			7:00	8:00	49.6
3			8:00	9:00	50.2
4			9:00	10:00	51.4
5			10:00	11:00	52.6
6			11:00	12:00	53.8
7			12:00	13:00	54.8
8			13:00	14:00	55.7
9			14:00	15:00	56.2
10			15:00	16:00	55.3
11			16:00	17:00	54.2
12			17:00	18:00	53.5
13			18:00	19:00	52.8
14			19:00	20:00	51.6
15			20:00	21:00	50.4
16			21:00	22:00	49.2
			Leq day in dB(A)		53.1
17	Night	29 & 30-Jul-24	22:00	23:00	46.9
18			23:00	0:00	44.6
19			0:00	1:00	43.1
20			1:00	2:00	42.2
21			2:00	3:00	43.5
22			3:00	4:00	44.1
23			4:00	5:00	44.8
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.6

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 01 -08- 2024					
STATION : SHELLA BAZAR (INFRONT OF PWD GUEST HOUSE) (NON MARKET DAY)					
STATION CODE : LN-1					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	1-Aug-24	6:00	7:00	50.8
2			7:00	8:00	51.2
3			8:00	9:00	52.3
4			9:00	10:00	53.4
5			10:00	11:00	54.6
6			11:00	12:00	55.8
7			12:00	13:00	57.4
8			13:00	14:00	59.4
9			14:00	15:00	60.1
10			15:00	16:00	58.7
11			16:00	17:00	57.6
12			17:00	18:00	56.4
13			18:00	19:00	55.8
14			19:00	20:00	54.1
15			20:00	21:00	53.2
16			21:00	22:00	51.5
			Leq day in dB(A)		56.1
17	Night	01 & 02-Aug-24	22:00	23:00	48.6
18			23:00	0:00	46.2
19			0:00	1:00	45.1
20			1:00	2:00	44.6
21			2:00	3:00	43.2
22			3:00	4:00	45.8
23			4:00	5:00	46.8
24			5:00	6:00	47.9
			Leq Night in dB(A)		46.3

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE: 05- 08 - 2024

STATION : PYRKAN VILLAGE (INFRONT OF RAMKRISHNA SCHOOL)

STATION CODE : LN-2

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	5-Aug-24	6:00	7:00	50.2
2			7:00	8:00	51.3
3			8:00	9:00	52.4
4			9:00	10:00	53.6
5			10:00	11:00	54.8
6			11:00	12:00	55.6
7			12:00	13:00	56.4
8			13:00	14:00	57.1
9			14:00	15:00	56.2
10			15:00	16:00	55.4
11			16:00	17:00	54.6
12			17:00	18:00	53.2
13			18:00	19:00	52.4
14			19:00	20:00	51.9
15			20:00	21:00	49.8
16			21:00	22:00	48.5
			Leq day in dB(A)		54.0
17	Night	5 & 6-Aug-24	22:00	23:00	46.2
18			23:00	0:00	45.1
19			0:00	1:00	43.2
20			1:00	2:00	42.1
21			2:00	3:00	41.4
22			3:00	4:00	42.6
23			4:00	5:00	43.5
24			5:00	6:00	45.2
			Leq Night in dB(A)		44.0

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 12-08-2024					
STATION : PHALANG KA RUH VILLAGE					
STATION CODE : LN-3					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	12-Aug-24	6:00	7:00	50.5
2			7:00	8:00	51.4
3			8:00	9:00	52.6
4			9:00	10:00	53.4
5			10:00	11:00	54.8
6			11:00	12:00	55.7
7			12:00	13:00	56.2
8			13:00	14:00	55.9
9			14:00	15:00	54.6
10			15:00	16:00	54.2
11			16:00	17:00	53.7
12			17:00	18:00	52.6
13			18:00	19:00	51.9
14			19:00	20:00	50.4
15			20:00	21:00	49.8
16			21:00	22:00	48.6
			Leq day in dB(A)		53.4
17	Night	12 & 13-Aug-24	22:00	23:00	46.1
18			23:00	0:00	45.2
19			0:00	1:00	44.1
20			1:00	2:00	42.6
21			2:00	3:00	43.5
22			3:00	4:00	44.1
23			4:00	5:00	45.2
24			5:00	6:00	45.8
			Leq Night in dB(A)		44.7

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 19- 08- 2024

STATION: OFFICE AREA

STATION CODE : LN-4

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	19-Aug-24	6:00	7:00	51.2
2			7:00	8:00	53.5
3			8:00	9:00	54.8
4			9:00	10:00	56.9
5			10:00	11:00	57.4
6			11:00	12:00	58.6
7			12:00	13:00	59.4
8			13:00	14:00	57.8
9			14:00	15:00	58.4
10			15:00	16:00	59.1
11			16:00	17:00	57.6
12			17:00	18:00	56.4
13			18:00	19:00	55.8
14			19:00	20:00	54.3
15			20:00	21:00	54.2
16			21:00	22:00	52.4
			Leq day in dB(A)		56.7
17	Night	19 & 20-Aug-24	22:00	23:00	50.6
18			23:00	0:00	48.5
19			0:00	1:00	47.2
20			1:00	2:00	45.6
21			2:00	3:00	46.8
22			3:00	4:00	47.2
23			4:00	5:00	45.4
24			5:00	6:00	49.2
			Leq Night in dB(A)		47.9

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : -23 -08- 2024					
STATION : SHELLA PUNJEE					
STATION CODE : LN-5					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	23-Aug-24	6:00	7:00	49.5
2			7:00	8:00	50.2
3			8:00	9:00	51.4
4			9:00	10:00	52.3
5			10:00	11:00	53.6
6			11:00	12:00	54.8
7			12:00	13:00	55.7
8			13:00	14:00	56.4
9			14:00	15:00	57.1
10			15:00	16:00	55.8
11			16:00	17:00	54.3
12			17:00	18:00	52.7
13			18:00	19:00	51.6
14			19:00	20:00	50.4
15			20:00	21:00	49.8
16			21:00	22:00	48.2
			Leq day in dB(A)		53.5
17	Night	23 & 24-Aug-24	22:00	23:00	46.1
18			23:00	0:00	45.8
19			0:00	1:00	43.5
20			1:00	2:00	42.1
21			2:00	3:00	42.5
22			3:00	4:00	43.4
23			4:00	5:00	44.2
24			5:00	6:00	45.6
			Leq Night in dB(A)		44.4

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 26-08-2024

STATION : MAWRYNGKHONG

STATION CODE : LN-6

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	26-Aug-24	6:00	7:00	49.5
2			7:00	8:00	50.2
3			8:00	9:00	51.4
4			9:00	10:00	52.3
5			10:00	11:00	53.6
6			11:00	12:00	54.2
7			12:00	13:00	55.8
8			13:00	14:00	56.4
9			14:00	15:00	55.3
10			15:00	16:00	54.6
11			16:00	17:00	53.8
12			17:00	18:00	52.4
13			18:00	19:00	51.7
14			19:00	20:00	50.4
15			20:00	21:00	49.8
16			21:00	22:00	48.6
			Leq day in dB(A)		53.1
17	Night	26 & 27-Aug-24	22:00	23:00	46.5
18			23:00	0:00	45.2
19			0:00	1:00	44.1
20			1:00	2:00	42.6
21			2:00	3:00	41.8
22			3:00	4:00	43.5
23			4:00	5:00	44.2
24			5:00	6:00	45.9
			Leq Night in dB(A)		44.5

LAFARGE UMIAM MINING PVT. LTD.					
NOISE LEVEL DATA					
DATE : 02 -09- 2024					
STATION : SHELLA BAZAR (INFRONT OF PWD GUEST HOUSE) (NON MARKET DAY)					
STATION CODE : LN-1					
			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	2-Sep-24	6:00	7:00	51.4
2			7:00	8:00	52.3
3			8:00	9:00	53.4
4			9:00	10:00	54.6
5			10:00	11:00	55.8
6			11:00	12:00	56.9
7			12:00	13:00	57.4
8			13:00	14:00	58.5
9			14:00	15:00	59.2
10			15:00	16:00	59.5
11			16:00	17:00	58.6
12			17:00	18:00	56.8
13			18:00	19:00	55.4
14			19:00	20:00	54.2
15			20:00	21:00	52.8
16			21:00	22:00	51.7
			Leq day in dB(A)		56.3
17	Night	02 & 03-Sep-24	22:00	23:00	49.8
18			23:00	0:00	47.6
19			0:00	1:00	46.4
20			1:00	2:00	45.2
21			2:00	3:00	44.3
22			3:00	4:00	45.2
23			4:00	5:00	46.7
24			5:00	6:00	47.9
			Leq Night in dB(A)		47.0

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE: 06- 09 - 2024

STATION : PYRKAN VILLAGE (INFRONT OF RAMKRISHNA SCHOOL)

STATION CODE : LN-2

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	6-Sep-24	6:00	7:00	49.2
2			7:00	8:00	50.1
3			8:00	9:00	51.2
4			9:00	10:00	52.6
5			10:00	11:00	53.4
6			11:00	12:00	54.8
7			12:00	13:00	55.7
8			13:00	14:00	56.8
9			14:00	15:00	57.9
10			15:00	16:00	56.2
11			16:00	17:00	55.4
12			17:00	18:00	54.9
13			18:00	19:00	53.2
14			19:00	20:00	52.5
15			20:00	21:00	51.8
16			21:00	22:00	49.4
			Leq day in dB(A)		54.2
17	Night	6 & 7-Sep-24	22:00	23:00	46.5
18			23:00	0:00	44.6
19			0:00	1:00	43.2
20			1:00	2:00	42.8
21			2:00	3:00	43.4
22			3:00	4:00	44.5
23			4:00	5:00	44.9
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.6

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : 10-09-2024

STATION : PHALANG KA RUH VILLAGE

STATION CODE : LN-3

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	10-Sep-24	6:00	7:00	48.7
2			7:00	8:00	49.5
3			8:00	9:00	50.2
4			9:00	10:00	51.3
5			10:00	11:00	52.4
6			11:00	12:00	53.6
7			12:00	13:00	54.8
8			13:00	14:00	55.7
9			14:00	15:00	56.8
10			15:00	16:00	57.6
11			16:00	17:00	56.4
12			17:00	18:00	55.3
13			18:00	19:00	54.2
14			19:00	20:00	53.8
15			20:00	21:00	51.6
16			21:00	22:00	49.2
			Leq day in dB(A)		54.0
17	Night	10 & 11-Sep-24	22:00	23:00	46.5
18			23:00	0:00	45.2
19			0:00	1:00	44.3
20			1:00	2:00	42.8
21			2:00	3:00	41.6
22			3:00	4:00	43.8
23			4:00	5:00	44.7
24			5:00	6:00	45.8
			Leq Night in dB(A)		44.6

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 16- 09- 2024

STATION: OFFICE AREA

STATION CODE : LN-4

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	16-Sep-24	6:00	7:00	50.2
2			7:00	8:00	52.5
3			8:00	9:00	54.6
4			9:00	10:00	56.8
5			10:00	11:00	58.4
6			11:00	12:00	59.7
7			12:00	13:00	61.2
8			13:00	14:00	62.5
9			14:00	15:00	59.7
10			15:00	16:00	58.4
11			16:00	17:00	56.9
12			17:00	18:00	57.4
13			18:00	19:00	56.8
14			19:00	20:00	54.9
15			20:00	21:00	53.8
16			21:00	22:00	52.7
			Leq day in dB(A)		57.8
17	Night	16 & 17-Sep-24	22:00	23:00	51.9
18			23:00	0:00	49.2
19			0:00	1:00	47.6
20			1:00	2:00	46.8
21			2:00	3:00	45.4
22			3:00	4:00	46.9
23			4:00	5:00	48.2
24			5:00	6:00	49.7
			Leq Night in dB(A)		48.7

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : -20 -09- 2024

STATION : SHELLA PUNJEE

STATION CODE : LN-5

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	20-Sep-24	6:00	7:00	49.2
2			7:00	8:00	50.1
3			8:00	9:00	51.2
4			9:00	10:00	52.6
5			10:00	11:00	53.5
6			11:00	12:00	54.8
7			12:00	13:00	55.7
8			13:00	14:00	56.2
9			14:00	15:00	57.4
10			15:00	16:00	56.5
11			16:00	17:00	55.8
12			17:00	18:00	54.2
13			18:00	19:00	53.1
14			19:00	20:00	51.7
15			20:00	21:00	49.2
16			21:00	22:00	48.5
			Leq day in dB(A)		53.9
17	Night	20 & 21-Sep-24	22:00	23:00	46.2
18			23:00	0:00	44.8
19			0:00	1:00	43.1
20			1:00	2:00	41.5
21			2:00	3:00	42.6
22			3:00	4:00	43.8
23			4:00	5:00	44.6
24			5:00	6:00	45.9
			Leq Night in dB(A)		44.3

LAFARGE UMIAM MINING PVT. LTD.

NOISE LEVEL DATA

DATE : - 25-09-2024

STATION : MAWRYNGKHONG

STATION CODE : LN-6

			Time (in hour)		
Sl. No.		Date	From	To	Hourly Leq dB(A)
1	Day	25-Sep-24	6:00	7:00	49.2
2			7:00	8:00	50.1
3			8:00	9:00	51.2
4			9:00	10:00	52.6
5			10:00	11:00	53.8
6			11:00	12:00	54.7
7			12:00	13:00	55.6
8			13:00	14:00	56.8
9			14:00	15:00	57.2
10			15:00	16:00	56.9
11			16:00	17:00	55.4
12			17:00	18:00	54.3
13			18:00	19:00	52.8
14			19:00	20:00	51.2
15			20:00	21:00	49.5
16			21:00	22:00	48.2
			Leq day in dB(A)		54.0
17	Night	25 & 26-Sep-24	22:00	23:00	46.8
18			23:00	0:00	45.2
19			0:00	1:00	43.8
20			1:00	2:00	42.6
21			2:00	3:00	41.5
22			3:00	4:00	43.5
23			4:00	5:00	44.2
24			5:00	6:00	45.7
			Leq Night in dB(A)		44.5

ANNEXURE– I

Minimate Ground Vibration Report April to September 2024

Ground Vibration Report (April - 2024)

Type	Serial No.	Date/Time	No. Chan	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	Mic Peak (dB)	PVS1 (mm/s)	Description
W	UM6171	Apr 1 /24 14:35:02	4	Tran	0.394	0.110	0.252	114.8L	0.406	Nongtrai Lime Stone Mines
W	5390	Apr 1 /24 14:35:03	4	Vert	0.064	1.207	1.461	120.0L	1.524	Nongtrai Lime stone mines
W	5390	Apr 3 /24 14:08:14	4	Long	0.064	0.635	0.699	115.6L	0.746	Nongtrai Lime stone mines
W	UM6171	Apr 3 /24 14:08:17	4	MicL	0.087	0.039	0.055	107.7L	0.091	Nongtrai Lime Stone Mines
W	UM6171	Apr 5 /24 14:08:11	4	Long	0.394	0.276	0.355	116.9L	0.427	Nongtrai Lime Stone Mines
W	5390	Apr 5 /24 14:08:12	4	Long	0.064	1.778	1.334	118.1L	1.778	Nongtrai Lime stone mines
W	UM6171	Apr 8 /24 14:00:00	4	Long	0.820	0.591	1.308	108.3L	1.327	Nongtrai Lime Stone Mines
W	5390	Apr 8 /24 14:00:03	4	Long	0.064	0.254	0.317	115.6L	0.318	Nongtrai Lime stone mines
W	5390	Apr 10 /24 14:00:47	4	Vert	0.064	1.080	1.651	<100L	1.667	Nongtrai Lime stone mines
W	UM6171	Apr 10 /24 14:00:47	4	Long	0.418	0.268	0.394	120.4L	0.445	Nongtrai Lime Stone Mines
W	UM6171	Apr 13 /24 14:06:46	4	Long	0.481	0.229	0.497	108.1L	0.534	Nongtrai Lime Stone Mines
W	UM6171	Apr 20 /24 14:03:18	4	Long	0.717	0.615	1.080	103.9L	1.103	Nongtrai Lime Stone Mines
W	5390	Apr 20 /24 14:03:20	4	Vert	0.064	0.508	0.699	<100L	0.730	Nongtrai Lime stone mines
W	5390	Apr 22 /24 14:08:27	4	Long	0.064	1.969	1.905	<100L	1.969	Nongtrai Lime stone mines
W	UM6171	Apr 22 /24 14:08:27	4	Long	0.891	0.394	0.481	109.2L	0.973	Nongtrai Lime Stone Mines
W	UM6171	Apr 23 /24 14:04:30	4	Tran	0.331	0.197	0.166	118.4L	0.349	Nongtrai Lime Stone Mines
W	UM6171	Apr 25 /24 14:00:32	4	Long	0.307	0.126	0.315	<88L	0.375	Nongtrai Lime Stone Mines
W	5390	Apr 25 /24 14:00:33	4	Long	0.064	0.826	1.143	<100L	1.191	Nongtrai Lime stone mines
W	UM6171	Apr 26 /24 13:52:09	4	Long	0.670	0.544	0.867	115.1L	0.910	Nongtrai Lime Stone Mines
W	5390	Apr 26 /24 13:52:10	4	Vert	0.064	1.651	0.064	<100L	1.651	Nongtrai Lime stone mines
W	5390	Apr 29 /24 14:01:07	4	Long	0.064	0.381	1.016	<100L	1.032	Nongtrai Lime stone mines
W	UM6171	Apr 29 /24 14:01:08	4	Long	0.954	0.828	1.222	110.3L	1.324	Nongtrai Lime Stone Mines
W	5390	Apr 30 /24 14:08:53	4	Vert	0.064	0.953	0.953	<100L	1.222	Nongtrai Lime stone mines
W	UM6171	Apr 30 /24 14:08:55	4	Long	0.229	0.142	0.268	114.5L	0.292	Nongtrai Lime Stone Mines

Ground Vibration Report (May - 2024)

Type	Serial No.	Date/Time	No. Chan	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	Mic Peak (dB)	PVS1 (mm/s)	Description
W	5390	May 2 /24 14:12:04	4	Vert	0.064	1.334	1.270	<100L	1.476	Nongtrai Lime stone mines
W	UM6171	May 2 /24 14:12:07	4	Long	0.331	0.252	0.560	112.9L	0.619	Nongtrai Lime Stone Mines
W	UM6171	May 4 /24 14:07:40	4	Long	0.906	0.851	1.316	113.9L	1.384	Nongtrai Lime Stone Mines
W	5390	May 4 /24 14:07:42	4	Vert	0.064	0.508	0.000	<100L	0.508	Nongtrai Lime stone mines
W	5390	May 7 /24 14:11:35	4	Vert	0.064	1.207	1.905	<100L	1.937	Nongtrai Lime stone mines
W	UM6171	May 7 /24 14:11:35	4	Long	0.434	0.276	0.465	120.3L	0.620	Nongtrai Lime Stone Mines
W	5390	May 8 /24 14:22:40	4	Long	0.064	0.826	1.397	<100L	1.397	Nongtrai Lime stone mines
W	UM6171	May 8 /24 14:22:40	4	Long	0.757	0.355	0.567	121.3L	0.789	Nongtrai Lime Stone Mines
W	5390	May 11 /24 14:02:12	4	Long	0.064	0.445	0.889	<100L	0.889	Nongtrai Lime stone mines
W	UM6171	May 11 /24 14:02:13	4	Long	0.749	0.654	1.096	110.8L	1.205	Nongtrai Lime Stone Mines
W	5390	May 13 /24 14:08:31	4	Long	0.064	1.207	1.778	<100L	1.873	Nongtrai Lime stone mines
W	UM6171	May 13 /24 14:08:33	4	Long	0.599	0.378	0.623	110.4L	0.737	Nongtrai Lime Stone Mines
W	UM6171	May 15 /24 13:59:13	4	Long	0.481	0.197	0.363	105.6L	0.502	Nongtrai Lime Stone Mines
W	5390	May 15 /24 13:59:14	4	Long	0.064	1.143	2.286	<100L	2.286	Nongtrai Lime stone mines
W	UM6171	May 16 /24 14:21:14	4	Long	2.191	1.616	2.412	110.3L	2.919	Nongtrai Lime Stone Mines
W	5390	May 18 /24 14:09:25	4	Long	0.064	0.127	0.317	<100L	0.318	Nongtrai Lime stone mines
W	UM6171	May 18 /24 14:09:26	4	MicL	0.071	0.055	0.055	120.8L	0.081	Nongtrai Lime Stone Mines
W	5390	May 20 /24 14:07:54	4	Long	0.064	1.524	1.588	<100L	1.953	Nongtrai Lime stone mines
W	UM6171	May 20 /24 14:07:55	4	Long	0.426	0.213	0.449	107.5L	0.462	Nongtrai Lime Stone Mines
W	UM6171	May 22 /24 13:52:36	4	Long	1.395	0.883	1.647	110.7L	1.674	Nongtrai Lime Stone Mines
W	5390	May 22 /24 13:52:38	4	Long	0.064	0.445	1.080	<100L	1.175	Nongtrai Lime stone mines
W	5390	May 24 /24 14:12:52	4	Long	0.064	1.207	1.588	<100L	1.794	Nongtrai Lime stone mines
W	UM6171	May 24 /24 14:12:52	4	Long	0.544	0.244	0.394	115.0L	0.566	Nongtrai Lime Stone Mines
W	5390	May 27 /24 14:12:39	4	Vert	0.064	0.699	0.762	<100L	0.794	Nongtrai Lime stone mines
W	UM6171	May 27 /24 14:12:41	4	MicL	0.071	0.039	0.063	111.7L	0.084	Nongtrai Lime Stone Mines
W	5390	May 30 /24 14:09:45	4	Vert	0.064	0.381	0.064	<100L	0.381	Nongtrai Lime stone mines
W	UM6171	May 30 /24 14:09:46	4	Vert	0.268	1.048	0.300	<88L	1.066	Nongtrai Lime Stone Mines
W	UM6171	May 31 /24 13:57:47	4	Long	0.977	0.591	1.892	117.5L	1.929	Nongtrai Lime Stone Mines
W	5390	May 31 /24 13:57:48	4	Vert	0.064	0.445	1.143	<100L	1.175	Nongtrai Lime stone mines

Ground Vibration Report
(June - 2024)

Type	Serial No.	Date/Time	No. Chan	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	Mic Peak (dB)	PVS1 (mm/s)	Description
W	5390	Jun 3 /24 14:45:47	4	Vert	0.064	0.635	0.445	<100L	0.714	Nongtrai Lime stone mines
W	UM6171	Jun 3 /24 14:45:47	4	Long	0.434	0.221	0.575	118.0L	0.622	Nongtrai Lime Stone Mines
W	UM6171	Jun 4 /24 14:01:51	4	Tran	0.394	0.039	0.063	95.96L	0.396	Nongtrai Lime Stone Mines
W	UM6171	Jun 6 /24 14:12:17	4	Long	0.394	0.268	0.307	104.1L	0.409	Nongtrai Lime Stone Mines
W	UM6171	Jun 7 /24 14:07:31	4	Long	0.725	0.244	0.426	<88L	0.769	Nongtrai Lime Stone Mines
W	5390	Jun 7 /24 14:07:32	4	Long	0.064	1.207	1.461	<100L	1.492	Nongtrai Lime stone mines
W	UM6171	Jun 10 /24 14:08:16	4	Long	1.198	0.694	2.128	105.4L	2.149	Nongtrai Lime Stone Mines
W	5390	Jun 10 /24 14:08:17	4	Long	0.064	0.317	0.572	<100L	0.572	Nongtrai Lime stone mines
W	5390	Jun 11 /24 14:02:54	4	Long	0.064	0.254	0.762	<100L	0.778	Nongtrai Lime stone mines
W	UM6171	Jun 11 /24 14:02:54	4	Vert	0.741	0.686	1.261	<88L	1.463	Nongtrai Lime Stone Mines
W	UM6171	Jun 13 /24 14:05:47	4	Long	0.591	0.363	0.686	89.16L	0.686	Nongtrai Lime Stone Mines
W	UM6171	Jun 14 /24 14:03:47	4	Long	1.072	0.575	1.072	104.1L	1.254	Nongtrai Lime Stone Mines
W	5390	Jun 15 /24 14:05:30	4	Vert	0.064	0.317	0.064	<100L	0.318	Nongtrai Lime stone mines
W	UM6171	Jun 15 /24 14:05:32	4	MicL	0.079	0.039	0.055	106.8L	0.085	Nongtrai Lime Stone Mines
W	5390	Jun 17 /24 14:33:22	4	Vert	0.064	0.445	0.635	<100L	0.667	Nongtrai Lime stone mines
W	UM6171	Jun 19 /24 14:04:57	4	Tran	0.465	0.189	0.307	103.1L	0.501	Nongtrai Lime Stone Mines
W	UM6171	Jun 21 /24 14:00:56	4	MicL	0.102	0.134	0.150	106.3L	0.208	Nongtrai Lime Stone Mines
W	5390	Jun 22 /24 14:35:35	4	Long	0.064	0.317	0.762	100.00L	0.810	Nongtrai Lime stone mines
W	UM6171	Jun 22 /24 14:35:36	4	Long	0.331	0.426	1.143	95.06L	1.145	Nongtrai Lime Stone Mines
W	UM6171	Jun 25 /24 14:05:09	4	Long	1.111	0.591	1.805	<88L	1.845	Nongtrai Lime Stone Mines
W	UM6171	Jun 26 /24 14:04:47	4	Tran	0.315	0.134	0.284	<88L	0.324	Nongtrai Lime Stone Mines
W	UM6171	Jun 28 /24 14:22:22	4	Long	0.875	0.394	0.906	<88L	1.155	Nongtrai Lime Stone Mines
W	5390	Jun 29 /24 14:15:44	4	MicL	0.127	0.127	0.127	109.5L	0.222	Nongtrai Lime stone mines
W	UM6171	Jun 29 /24 14:15:54	4	Tran	2.357	0.039	0.055	107.1L	2.357	Nongtrai Lime Stone Mines

Ground Vibration Report
(July - 2024)

Type	Serial No.	Date/Time	No. Chan	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	Mic Peak (dB)	PVS1 (mm/s)	Description
W	5390	Jul 3 /24 14:09:29	4	MicL	0.064	0.191	0.317	109.5L	0.381	Nongtrai Lime stone mines
W	UM6171	Jul 3 /24 14:09:45	4	Vert	1.955	1.009	1.986	96.28L	2.431	Nongtrai Lime Stone Mines
W	5390	Jul 4 /24 14:04:47	4	Vert	0.254	0.317	0.317	118.1L	0.476	Nongtrai Lime stone mines
W	UM6171	Jul 4 /24 14:11:43	4	Long	0.213	0.213	0.631	95.75L	0.638	Nongtrai Lime Stone Mines
W	5390	Jul 6 /24 14:10:02	4	MicL	0.191	0.254	0.254	115.6L	0.413	Nongtrai Lime stone mines
W	UM6171	Jul 6 /24 14:11:20	4	MicL	0.087	0.039	0.063	107.8L	0.096	Nongtrai Lime Stone Mines
W	UM6171	Jul 8 /24 14:22:24	4	Long	0.481	0.646	1.072	91.24L	1.110	Nongtrai Lime Stone Mines
W	UM6171	Jul 10 /24 14:13:42	4	Tran	1.253	0.465	0.820	130.9L	1.320	Nongtrai Lime Stone Mines
W	UM6171	Jul 11 /24 14:04:38	4	Tran	1.088	0.039	0.071	95.52L	1.088	Nongtrai Lime Stone Mines
W	UM6171	Jul 13 /24 14:11:10	4	MicL	0.268	0.189	0.418	106.4L	0.470	Nongtrai Lime Stone Mines
W	5390	Jul 15 /24 14:22:05	4	Long	0.064	1.143	1.524	100.00L	1.730	Nongtrai Lime stone mines
W	UM6171	Jul 15 /24 14:22:05	4	Long	0.244	0.197	0.307	117.8L	0.310	Nongtrai Lime Stone Mines
W	5390	Jul 16 /24 14:08:47	4	Vert	0.064	1.461	1.270	100.00L	1.699	Nongtrai Lime stone mines
W	UM6171	Jul 16 /24 14:08:48	4	Long	0.355	0.205	0.339	103.1L	0.419	Nongtrai Lime Stone Mines
W	5390	Jul 17 /24 14:06:20	4	Vert	0.064	1.270	1.461	100.00L	1.715	Nongtrai Lime stone mines
W	UM6171	Jul 17 /24 14:06:23	4	Long	0.418	0.229	0.402	93.36L	0.475	Nongtrai Lime Stone Mines
W	5390	Jul 18 /24 14:13:42	4	Long	0.064	0.572	1.016	100.00L	1.016	Nongtrai Lime stone mines
W	UM6171	Jul 20 /24 14:07:59	4	Long	0.993	0.520	1.103	106.7L	1.124	Nongtrai Lime Stone Mines
W	5390	Jul 20 /24 14:08:00	4	Long	0.064	0.445	0.699	100.00L	0.746	Nongtrai Lime stone mines
W	UM6171	Jul 22 /24 14:09:58	4	Long	1.411	0.749	1.269	122.8L	1.479	Nongtrai Lime Stone Mines
W	UM6171	Jul 24 /24 14:22:50	4	Long	0.363	0.528	1.025	112.0L	1.109	Nongtrai Lime Stone Mines
W	5390	Jul 24 /24 14:22:51	4	Long	0.064	0.381	0.445	100.00L	0.540	Nongtrai Lime stone mines
W	UM6171	Jul 26 /24 14:09:30	4	MicL	0.079	0.039	0.047	108.3L	0.080	Nongtrai Lime Stone Mines
W	5390	Jul 27 /24 14:08:36	4	Long	0.064	0.317	0.445	100.00L	0.460	Nongtrai Lime stone mines
W	UM6171	Jul 27 /24 14:08:37	4	MicL	0.079	0.039	0.055	116.2L	0.082	Nongtrai Lime Stone Mines
W	UM6171	Jul 29 /24 14:09:12	4	Tran	1.458	0.796	0.055	116.2L	1.484	Nongtrai Lime Stone Mines
W	5390	Jul 29 /24 14:09:14	4	Long	0.064	0.445	0.889	100.00L	0.905	Nongtrai Lime stone mines
W	5390	Jul 31 /24 14:05:46	4	Long	0.064	0.317	0.572	109.5L	0.651	Nongtrai Lime stone mines

Ground Vibration Report
(August - 2024)

ype	Serial No.	Date/Time	No. Chan	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	Mic Peak (dB)	PVS1 (mm/s)	Description
W	5390	Aug 1 /24 14:17:47	4	Long	0.064	1.143	1.651	<100L	1.730	Nongtrai Lime stone mines
W	UM6171	Aug 1 /24 14:17:47	4	Long	0.662	0.378	0.694	123.1L	0.832	Nongtrai Lime Stone Mines
W	5390	Aug 3 /24 14:07:19	4	Vert	0.064	1.397	0.953	<100L	1.397	Nongtrai Lime stone mines
W	UM6171	Aug 3 /24 14:07:23	4	MicL	0.087	0.039	0.055	109.8L	0.088	Nongtrai Lime Stone Mines
W	UM6171	Aug 5 /24 13:59:33	4	Long	0.749	0.560	1.482	101.5L	1.534	Nongtrai Lime Stone Mines
W	5390	Aug 5 /24 13:59:35	4	Vert	0.064	0.508	0.699	<100L	0.778	Nongtrai Lime stone mines
W	UM6171	Aug 7 /24 13:53:47	4	Tran	0.323	0.221	0.410	115.3L	0.487	Nongtrai Lime Stone Mines
W	5390	Aug 7 /24 13:53:48	4	Long	0.064	1.334	2.159	<100L	2.175	Nongtrai Lime stone mines
W	5390	Aug 9 /24 14:03:36	4	Long	0.064	0.572	1.588	100.00L	1.683	Nongtrai Lime stone mines
W	UM6171	Aug 9 /24 14:03:36	4	Long	0.473	0.497	0.654	116.1L	0.864	Nongtrai Lime Stone Mines
W	5390	Aug 10 /24 14:01:53	4	Long	0.064	1.651	3.747	100.00L	3.937	Nongtrai Lime stone mines
W	UM6171	Aug 10 /24 14:01:54	4	Long	0.591	0.323	0.615	115.8L	0.717	Nongtrai Lime Stone Mines
W	UM6171	Aug 14 /24 14:23:11	4	Long	1.214	0.434	0.906	105.3L	1.232	Nongtrai Lime Stone Mines
W	5390	Aug 14 /24 14:23:13	4	Vert	0.064	2.223	3.302	<100L	3.381	Nongtrai Lime stone mines
W	UM6171	Aug 16 /24 14:03:51	4	Long	1.174	0.851	2.026	109.1L	2.036	Nongtrai Lime Stone Mines
W	5390	Aug 16 /24 14:03:52	4	Long	0.064	0.572	1.080	100.00L	1.111	Nongtrai Lime stone mines
W	5390	Aug 17 /24 14:07:18	4	Long	0.064	1.397	2.604	100.00L	2.651	Nongtrai Lime stone mines
W	UM6171	Aug 17 /24 14:07:19	4	Long	0.386	0.276	0.504	113.9L	0.572	Nongtrai Lime Stone Mines
W	UM6171	Aug 20 /24 14:09:44	4	Long	1.103	0.386	1.119	103.6L	1.259	Nongtrai Lime Stone Mines
W	UM6171	Aug 21 /24 14:10:39	4	Long	0.252	0.300	0.315	105.4L	0.341	Nongtrai Lime Stone Mines
W	5390	Aug 22 /24 14:07:50	4	Long	0.064	0.699	1.143	<100L	1.159	Nongtrai Lime stone mines
W	UM6171	Aug 22 /24 14:07:50	4	Long	0.434	0.457	1.143	106.1L	1.152	Nongtrai Lime Stone Mines
W	5390	Aug 24 /24 14:06:34	4	Long	0.064	1.524	3.747	100.00L	3.889	Nongtrai Lime stone mines
W	UM6171	Aug 24 /24 14:06:35	4	Tran	0.465	0.252	0.552	115.0L	0.661	Nongtrai Lime Stone Mines
W	UM6171	Aug 26 /24 13:58:58	4	Tran	0.347	0.229	0.284	100.3L	0.366	Nongtrai Lime Stone Mines
W	5390	Aug 26 /24 13:58:59	4	Long	0.064	1.778	2.921	100.00L	3.159	Nongtrai Lime stone mines
W	UM6171	Aug 27 /24 13:58:22	4	Long	0.788	0.567	1.143	113.0L	1.198	Nongtrai Lime Stone Mines
W	5390	Aug 27 /24 13:58:23	4	Long	0.064	0.635	0.826	100.00L	0.968	Nongtrai Lime stone mines
W	UM6171	Aug 29 /24 14:15:25	4	Tran	0.339	0.307	0.166	128.8L	0.359	Nongtrai Lime Stone Mines
W	5390	Aug 29 /24 14:15:27	4	Long	0.064	0.953	2.730	100.00L	2.794	Nongtrai Lime stone mines
W	UM6171	Aug 31 /24 14:06:51	4	Long	0.646	0.339	0.599	124.4L	0.672	Nongtrai Lime Stone Mines

Ground Vibration Report
(Sep - 2024)

Type	Serial No.	Date/Time	No. Chan	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	Mic Peak (dB)	PVS1 (mm/s)	Description
W	5390	Sep 2 /24 14:54:22	4	Vert	0.064	0.381	0.699	106.0L	0.714	Nongtrai Lime stone mines
W	UM6171	Sep 2 /24 14:54:22	4	Long	0.489	0.481	0.686	120.3L	0.772	Nongtrai Lime Stone Mines
W	UM6171	Sep 5 /24 15:05:09	4	Tran	0.315	0.252	0.315	115.8L	0.330	Nongtrai Lime Stone Mines
W	UM6171	Sep 7 /24 13:59:00	4	Long	2.341	1.269	2.467	113.5L	2.666	Nongtrai Lime Stone Mines
W	5390	Sep 7 /24 13:59:02	4	Long	0.064	0.699	2.413	106.0L	2.413	Nongtrai Lime stone mines
W	UM6171	Sep 9 /24 14:14:39	4	Long	0.355	0.292	0.441	109.0L	0.449	Nongtrai Lime Stone Mines
W	5390	Sep 9 /24 14:14:40	4	Vert	0.064	0.889	1.016	100.00L	1.270	Nongtrai Lime stone mines
W	5390	Sep 11 /24 13:56:39	4	Long	0.064	0.508	0.635	100.00L	0.810	Nongtrai Lime stone mines
W	UM6171	Sep 11 /24 13:56:43	4	MicL	0.095	0.087	0.047	120.0L	0.095	Nongtrai Lime Stone Mines
W	UM6171	Sep 12 /24 14:08:00	4	Long	0.922	1.080	1.206	108.9L	1.413	Nongtrai Lime Stone Mines
W	5390	Sep 18 /24 14:03:21	4	Long	0.064	0.572	1.334	100.00L	1.334	Nongtrai Lime stone mines
W	5390	Sep 20 /24 14:02:46	4	Long	0.064	3.493	3.048	100.00L	3.969	Nongtrai Lime stone mines
W	5390	Sep 21 /24 14:05:35	4	Vert	0.064	1.461	1.207	100.00L	1.651	Nongtrai Lime stone mines
W	5390	Sep 23 /24 14:12:39	4	Long	0.064	0.508	1.016	100.00L	1.032	Nongtrai Lime stone mines
W	5390	Sep 25 /24 13:59:58	4	Vert	0.064	2.095	2.858	100.00L	2.873	Nongtrai Lime stone mines
W	5390	Sep 27 /24 14:31:23	4	Long	0.064	0.762	0.953	100.00L	1.048	Nongtrai Lime stone mines
W	5390	Sep 30 /24 14:01:20	4	Vert	0.064	0.445	0.254	<100L	0.460	Nongtrai Lime stone mines

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এবীএন্এস্ সাইंটিফিক সর্বিসেস প্রাइवेट लिमिटेड

(Meghalaya State Pollution Control Board recognised laboratory)

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এইচ্-১৫২, केतेकी पथ्, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/042724/38	**Date: 27/04/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/041824/SW01** Sample Type: Grab Sample Source: LWQ-1 Up Stream Umiam River
Location:Umiam River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 17/04/2024 Analysis Start Date: 18/04/2024 Analysis End Date: 25/04/2024
Environmental Condition: Temperature: 23.2°C Relative Humidity:65%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25°C	*IS 3025 Part 11, 2022*	-	**7.80**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**238**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.7**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**156**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**25.4**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.04**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**88.6**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**72.5**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.22**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**36.6**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**27.8**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**12.3**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**16.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.88**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.4**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**13.2**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.6**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.3**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**10.4**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.15**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**3.22**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**1.14**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**133**

Note: The results relate to the parameter tested only. BDL: Below Detection Limit

----------***End of Report***----------

For ABNS Scientific Services,

ABNS

27/04/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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(Meghalaya State Pollution Control Board recognised laboratory)

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Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/042724/39	**Date: 27/04/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/041824/SW02** Sample Type: Grab Sample Source: LWQ-2 Down Stream Umiam River
Location: Umiam River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 17/04/2024 Analysis Start Date: 18/04/2024 Analysis End Date: 25/04/2024
Environmental Condition: Temperature: 23.2^{0}C Relative Humidity:65%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.70**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**210**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**10.5**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**173**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**17.3**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**118.4**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**59.4**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**50.3**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**23.4**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**6.4**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**15**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**3.31**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**17.5**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**3.1**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.6**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**11.6**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.25**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**4.16**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.27**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**327**

Note: The results relate to the parameter tested only.

----------End of Report----------

For ABNS Scientific Services,

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/042724/40	**Date: 27/04/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/041824/SW03** Sample Type: Grab Sample Source: LWQ-3 Up Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 17/04/2024 Analysis Start Date: 18/04/2024 Analysis End Date: 25/04/2024
Environmental Condition: Temperature: 23.2^{0}C Relative Humidity:65%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.90**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**184**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**6.5**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**127**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**30.6**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.06**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**99.5**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**67.2**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.20**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**27.6**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**33.6**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**15.5**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**14.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**2.74**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**5.6**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**9.8**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.8**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**3.1**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**8.5**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.44**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**1.27**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**1.25**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**75**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

ABNS Scientific Services

27/04/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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(Meghalaya State Pollution Control Board recognised laboratory)

H-152, Keteki Path, Padumbari, Jalukbari, Guwahati 781011, Assam

এইচ্-১৫২, কেতেকী পথ্, পদুমবারী, জালুকবারী, গুবাহাটী ৭৮১০১১, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/042724/41	**Date: 27/04/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/041824/SW04** Sample Type: Grab Sample Source: LWQ-4 Down Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 17/04/2024 Analysis Start Date: 18/04/2024 Analysis End Date: 25/04/2024
Environmental Condition: Temperature: 23.2^{0}C Relative Humidity:65%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.80**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**193**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**8.2**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**136**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**27.7**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**75.5**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**80.3**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**27**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**41.7**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**17.2**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**12.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**1.93**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**5.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**22.3**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**4**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**3.7**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**15.6**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.82**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**5.42**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**BDL**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**35**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS Guwahati Assam 27/04/2024

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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এইচ্-১৫২, কেতেকী পথ্, পদুমবারী, জালুকবারী, গুবাহাটী ৭৮১০১১, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/052924/33	**Date: 29/05/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/052324/SW01** Sample Type: Grab Sample Source: LWQ-1 Up Stream Umiam River
Location:Umiam River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 22/05/2024 Analysis Start Date: 23/05/2024 Analysis End Date: 28/05/2024
Environmental Condition: Temperature: 23.5^{0}C Relative Humidity:64%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.90**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**225**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**4.2**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**118**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**21.9**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.04**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**62.1**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**116.0**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**36.6**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**32.53**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**7.3**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**20**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.82**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**12**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.4**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**3**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**15**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.13**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**2.54**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.75**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**28**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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(Meghalaya State Pollution Control Board recognised laboratory)

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TEST REPORT

Report No: ABNS/EM/052924/34	**Date: 29/05/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/052324/SW02** Sample Type: Grab Sample Source: LWQ-2 Down Stream Umiam River
Location: Umiam River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 22/05/2024 Analysis Start Date: 23/05/2024 Analysis End Date: 28/05/2024
Environmental Condition: Temperature: 23.5^{0}C Relative Humidity:64%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.80**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**185**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**4.16**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**89**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**21**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**64.18**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**94**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.20**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**27.5**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**28.16**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**4.73**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.57**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.2**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**16**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**3**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**4.2**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**14**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.09**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**1.82**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.93**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**21**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS Guwahati

23/05/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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TEST REPORT

Report No: ABNS/EM/052924/35	**Date: 29/05/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/052324/SW03** Sample Type: Grab Sample Source: LWQ-3 Up Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 22/05/2024 Analysis Start Date: 23/05/2024 Analysis End Date: 28/05/2024
Environmental Condition: Temperature: 23.5^{0}C Relative Humidity:64%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.80**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**196**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.8**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**112**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**19.5**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**70.25**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**78.12**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.22**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**32.0**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**35.72**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**5.03**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**16**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.66**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**5.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**14**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.2**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**12**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.11**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**2.19**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.81**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**46**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

29/05/2024

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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TEST REPORT

Report No: ABNS/EM/052924/36	**Date: 29/05/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/052324/SW04** Sample Type: Grab Sample Source: LWQ-4 Down Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 22/05/2024 Analysis Start Date: 23/05/2024 Analysis End Date: 28/05/2024
Environmental Condition: Temperature: 23.5^{0}C Relative Humidity:64%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.90**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**225**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.9**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**92**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**18.3**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.06**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**58.46**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**82.52**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**29**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**42.76**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**6.21**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**14.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.28**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**16**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**3**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.4**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**11**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.16**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**3.10**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.91**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**25**

Note: The results relate to the parameter tested only. BDL: Below Detection Limit

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS Guwahati

29/05/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

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(Meghalaya State Pollution Control Board recognised laboratory)

H-152, Keteki Path, Padumbari, Jalukbari, Guwahati 781011, Assam

এইচ্-১৫২, কেতেকী পথ, পদুমবারী, জালুকবারী, গুবাহাটী ৭৮১০১১, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No:ABNS/EM/061824/21	**Date:18.06.2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/061224/SW01** Sample Type: Grab Sample Source: LWQ-1 Up Stream Umiam River
Location:Umiam River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 10.06.2024 Analysis Start Date: 12.06.2024 Analysis End Date: 18.06.2024
Environmental Condition: Temperature: 25.4^{0}C Relative Humidity:71.0%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.10**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**220**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**4.2**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**117**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**21.5**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.06**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**61.53**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**76**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.20**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**28.5**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**34.19**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**5.92**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**16.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.69**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**7.2**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**11**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**3**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**1.8**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**11**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.17**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**1.86**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.24**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**30**

Note: The results relate to the parameter tested only. BDL: Below Detection Limit

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Service ABNS Guwahati 18/06/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

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(Meghalaya State Pollution Control Board recognised laboratory)

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এইচ্-১৫২, केतेकी पथ, पदुमबारी, जालुकबारी, গুवाहाटी ৬৮১০১১, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone. 98640 68513, 98640 89951

TEST REPORT

Report No:ABNS/EM/061824/22	Date:18.06.2024
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/061224/SW02** Sample Type: Grab Sample Source: LWQ-2 Down Stream Umiam River
Location: Umiam River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 10.06.2024 Analysis Start Date: 12.06.2024 Analysis End Date: 18.06.2024
Environmental Condition: Temperature: 25.4^{0}C Relative Humidity:71.0%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.0**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**176**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.5**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**124**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**23.0**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**64.19**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**54.82**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**21.7**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**24.95**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**3.07**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.78**

15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.4**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**18**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.2**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.2**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**9**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.21**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.37**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.37**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**12**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS Guwahati Assam 18/06/2024

Authorized Signatory

Dr. Bidyut Jyoti Sarmah (TM)

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

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(Meghalaya State Pollution Control Board recognised laboratory)

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এইচ্-১৫২, কেতেকী পথ্, পদুমবারী, জালুকবারী, গুবাহাটী ৭৮১০১১, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No:ABNS/EM/061824/23	**Date:18.06.2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/061224/SW03** Sample Type: Grab Sample Source: LWQ-3 Up Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 10.06.2024 Analysis Start Date: 12.06.2024 Analysis End Date: 18.06.2024
Environmental Condition: Temperature: 25.4^{0}C Relative Humidity:71.0%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.90**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**185**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**4.2**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**102**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**19.3**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**42.82**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**65.1**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**26.4**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**19.76**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**4.07**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**16.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.42**

15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**5.6**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**20**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**5.4**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.8**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**17**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.25**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.52**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.89**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**32**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS Guwahati

18/06/2024

Authorized Signatory

Dr. Bidyut Jyoti Sarmah (TM)

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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(Meghalaya State Pollution Control Board recognised laboratory)

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Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No:ABNS/EM/061824/24	**Date:18.06.2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/061224/SW04** Sample Type: Grab Sample Source: LWQ-4 Down Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 10.06.2024 Analysis Start Date: 12.06.2024 Analysis End Date: 18.06.2024
Environmental Condition: Temperature: 25.4^{0}C Relative Humidity:71.0%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.80**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**235**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.7**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**134**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**31**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.04**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**38.16**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**85.71**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.22**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**25.3**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**22.05**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**2.97**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**16.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.59**

15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**5.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**14**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**4.2**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**3.2**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**14**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.19**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.93**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.74**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**57**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS Guwahati

18/06/2024

Authorized Signatory

Dr. Bidyut Jyoti Sarmah (TM)

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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(Meghalaya State Pollution Control Board recognised laboratory)

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TEST REPORT

Report No: ABNS/EM/072524/42	**Date: 25/07/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/072024/SW01** Sample Type: Grab Sample Source: LWQ-1 Up Stream Umiam River
Location:Umiam River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 19/07/2024 Analysis Start Date: 20/07/2024 Analysis End Date: 25/07/2024
Environmental Condition: Temperature: 23.4^{0}C Relative Humidity:66%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.90**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**240**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**2.9**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**116**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**19.2**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.04**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**54.90**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**57.25**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.22**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**28.5**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**31.84**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**8.74**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.28**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.4**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**16**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**5.0**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.5**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**20**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.08**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.44**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.56**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**18**

Note: The results relate to the parameter tested only. BDL: Below Detection Limit

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS Guwahati Assam

25/01/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

এবীএন্এস্ সাইंटিফিক সর্বিসেস প্রাইবেট লিমিটেড

(Meghalaya State Pollution Control Board recognised laboratory)

H-152, Keteki Path, Padumbari, Jalukbari, Guwahati 781011, Assam

এইচ্-१५२, केतेकी पथ्, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/072524/43	**Date: 25/07/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/072024/SW02** Sample Type: Grab Sample Source: LWQ-2 Down Stream Umiam River
Location: Umiam River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 19/07/2024 Analysis Start Date: 20/07/2024 Analysis End Date: 25/07/2024
Environmental Condition: Temperature: 23.4^{0}C Relative Humidity:66%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.0**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**196**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.1**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**76**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**18.5**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**57.28**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**63.15**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**21.5**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**24.93**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**7.62**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**16.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.41**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.2**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**10**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**4.8**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.7**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**18**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.13**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.51**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.28**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**14**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Services ABNS

25/07/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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(Meghalaya State Pollution Control Board recognised laboratory)

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এইচ্-১৫২, কেতেকী পথ, পদুমবারী, জালুকবারী, গুবাহাটী ৭৮১০১১, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/072524/44	**Date: 25/07/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/072024/SW03** Sample Type: Grab Sample Source: LWQ-3 Up Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 19/07/2024 Analysis Start Date: 20/07/2024 Analysis End Date: 25/07/2024
Environmental Condition: Temperature: 23.4^{0}C Relative Humidity:66%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.01**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**184**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**2.8**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**74**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**23.7**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.06**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**45.18**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**102.44**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**23.4**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**26.75**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**6.52**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.64**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**7.2**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**13**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**4.6**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.4**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**24**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.12**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.74**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.19**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**11**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Service ABNS 25/07/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এছ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

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(Meghalaya State Pollution Control Board recognised laboratory)

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Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/072524/45	**Date: 25/07/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/072024/SW04** Sample Type: Grab Sample Source: LWQ-4 Down Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 19/07/2024 Analysis Start Date: 20/07/2024 Analysis End Date: 25/07/2024
Environmental Condition: Temperature: 23.4^{0}C Relative Humidity:66%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.10**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**175**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.5**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**62**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**19.7**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**39.42**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**59.16**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.20**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**41.0**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**25.19**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**5.03**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.73**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**16**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**5.2**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**5**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**16**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.17**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.68**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.64**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**22**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Scientific Service ABNS Guwahati Assam 25/07/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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(Meghalaya State Pollution Control Board recognised laboratory)

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Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/082924/21	**Date:29/08/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/082124/SW01** Sample Type: Grab Sample Source: LWQ-1 Up Stream Umiam River
Location: Umiam River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 20/08/2024 Analysis Start Date: 21/08/2024 Analysis End Date: 29/08/2024
Environmental Condition: Temperature: 25.8^{0}C Relative Humidity:68.5%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.90**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**197.9**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**4.4**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**102.0**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**12.7**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.04**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**102.0**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**53.5**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.22**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**38.0**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**31.1**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**6.0**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**2.04**

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15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.2**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**10.5**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.9**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.7**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**6.3**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.18**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**2.15**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.13**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**112**

Note: The results relate to the parameter tested only. BDL: Below Detection Limit

----------***End of Report***----------

For ABNS Scientific Services,

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Scientific Services ★ ABNS ★ Guwahati, Assam

29/08/2024

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

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এইচ্-১৫২, केतेकी पथ्, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

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TEST REPORT

Report No: ABNS/EM/082924/22	**Date:29/08/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/082124/SW02** Sample Type: Grab Sample Source: LWQ-2 Down Stream Umiam River
Location: Umiam River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 20/08/2024 Analysis Start Date: 21/08/2024 Analysis End Date: 29/08/2024
Environmental Condition: Temperature: 25.8^{0}C Relative Humidity: 68.5%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.0**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**282**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**8.3**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**156.0**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**9.8**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**161.2**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**99.0**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**43.0**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**43.3**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**12.9**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**16.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**2.23**

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15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.6**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**6.8**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.1**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**1.6**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**5.5**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.13**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.16**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.27**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**85**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Scientific Services ABNS Guwahati, Assam

29/05/2024

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

এবীএন্এস্ সাইंटিফিক সর্বিসেস প্রাইবেট লিমিটেড

(Meghalaya State Pollution Control Board recognised laboratory)

H-152, Keteki Path, Padumbari, Jalukbari, Guwahati 781011, Assam

এইচ্-১৫২, केतेकी पथ्, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/082924/23	**Date:29/08/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/082124/SW03** Sample Type: Grab Sample Source: LWQ-3 Up Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 20/08/2024 Analysis Start Date: 21/08/2024 Analysis End Date: 29/08/2024
Environmental Condition: Temperature: 25.8^{0}C Relative Humidity: 68.5%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.0**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**217**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.2**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**134**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**39**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.06**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**28.6**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**54.4**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.21**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**44.5**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**20.2**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**10.9**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.38**

15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**4.9**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**8.7**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.3**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**0.18**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**7.2**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.22**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**1.86**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**BDL**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**31**

Note: The results relate to the parameter tested only.

----------End of Report----------

For ABNS Scientific Services,

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Scientific Services ABNS Guwahati, Assam

29/08/2024

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

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(Meghalaya State Pollution Control Board recognised laboratory)

H-152, Keteki Path, Padumbari, Jalukbari, Guwahati 781011, Assam

এইচ্-১৫২, केतेकी पथ्, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/082924/24	**Date: 29/08/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/082124/SW04** Sample Type: Grab Sample Source: LWQ-4 Down Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 20/08/2024 Analysis Start Date: 21/08/2024 Analysis End Date: 29/08/2024
Environmental Condition: Temperature: 25.8^{0}C Relative Humidity: 68.5%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.10**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**157**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**6.5**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**86.4**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**21.7**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.05**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**50.6**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**65.5**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.20**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**38.8**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**23.8**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**4.7**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**1.77**

15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**7**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**14.2**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**3.6**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**2.2**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**10.8**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.53**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**2.86**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**BDL**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**49**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

29/08/2024

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED
এবীএন্‌এচ্‌ চাইন্টিফিক চার্ভিচেচ প্ৰাইভেট লিমিটেড
एबीएन्एस् साइंटिफिक सर्विसेस प्राइवेट लिमिटेड
(Meghalaya State Pollution Control Board recognised laboratory)
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एइच्-१५२, केतेकी पथ, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम
Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No: ABNS/EM/100724/11	**Date:07/10/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/092324/SW01** Sample Type: Grab Sample Source: LWQ-1 Up Stream Umiam River
Location: Umiam River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 21/09/2024 Analysis Start Date: 23/09/2024 Analysis End Date: 01/10/2024
Environmental Condition: Temperature: 25.8^{0}C Relative Humidity:68.5%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.78**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**187.2**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.8**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**122.0**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**18.6**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**BDL**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**82.0**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**54.6**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.19**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**21.0**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**23.6**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**3.40**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**10.0**

14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**3.40**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.6**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**12.8**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**3.2**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**0.8**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**4.6**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.12**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**1.8**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.28**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**194**

Note: The results relate to the parameter tested only. BDL: Below Detection Limit

----------***End of Report***----------

For ABNS Scientific Services,

07/10/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চার্ভিচেচ প্রাইভেট লিমিটেড

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(Meghalaya State Pollution Control Board recognised laboratory)

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এইচ্-১৫২, केतेकी पथ्, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No:ABNS/EM/100724/12	**Date:07/10/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/092324/SW02** Sample Type: Grab Sample Source: LWQ-2Down Stream Umiam River
Location:Umiam River	Sample Collected by: Mr Chinmay Kalita (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 21/09/2024 Analysis Start Date: 23/09/2024 Analysis End Date: 03/10/2024
Environmental Condition: Temperature: 25.8^{0}C Relative Humidity: 68.5%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.06**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**272**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**7.4**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**186.0**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**9.4**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**0.04**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**122.8**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**98.0**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.18**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**23.0**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**48.20**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**9.54**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**18.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**4.60**

15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**5.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**9.0**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.2**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**1.2**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**5.8**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**0.18**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.24**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**0.27**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**42**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

07/10/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

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एबीएन्एस् साइंटिफिक सर्विसेस प्राइवेट लिमिटेड

(Meghalaya State Pollution Control Board recognised laboratory)

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एइच्-१५२, केतेकी पथ्, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No:ABNS/EM/100724/13	**Date:07/10/2024**
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/092324/SW03** Sample Type: Grab Sample Source: LWQ-3Up Stream Phlangkarue River
Location: Phlangkarue River	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 21/09/2024 Analysis Start Date: 23/09/2024 Analysis End Date: 03/10/2024
Environmental Condition: Temperature: 25.8^{0}C Relative Humidity: 68.5%	

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**7.82**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**217**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**3.6**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**143**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**23.0**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**BDL**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**58.4**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**69.6**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.09**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**8.4**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**18.6**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**6.2**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**24.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**1.02**
15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**

16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**4.8**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**10.6**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**2.4**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**1.9**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**6.0**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.8**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**BDL**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**N.D.**

Note: The results relate to the parameter tested only. *N.D.: Not Detected*

----------***End of Report***----------

For ABNS Scientific Services,

07/10/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

ABNS SCIENTIFIC SERVICES PRIVATE LIMITED

এবীএন্এচ্ চাইন্টিফিক চাৰ্ভিচেচ প্ৰাইভেট লিমিটেড

एबीएन्एस् साइंटिफिक सर्विसेस प्राइवेट लिमिटेड

(Meghalaya State Pollution Control Board recognised laboratory)

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एइच्-१५२, केतेकी पथ, पदुमबारी, जालुकबारी, गुवाहाटी ७८१०११, असम

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TEST REPORT

Report No:ABNS/EM/100724/14	Date: 07/10/2024
Name & Address of the Customer: **LAFARGE UMIAM MINING PVT LTD** Nongtrai Limestone Mines, Phalangharuh, Shella Confederacy, East Khasi Hills, Shella Meghalaya 793112, INDIA	Ref.: PO: 3960022674 Sample Description: **Surface Water** Sample ID: **ABNS/GHY/092324/SW04** Sample Type: Grab Sample Source: LWQ-4Down Stream Phlangkarue River
Location:Phlangkarue River **Environmental Condition**: Temperature: 25.8^{0}C Relative Humidity: 68.5%	Sample Collected by: Mr Nabajit Pathak (Sampler) Sampling Protocol: IS 17614 (Part 1): 2021 Sampling Date: 21/09/2024 Analysis Start Date: 23/09/2024 Analysis End Date: 03/10/2024

ANALYSIS RESULTS

Sl No	Parameters	Reference Methods	Units	Results
1	pH at 25^{0}C	*IS 3025 Part 11, 2022*	-	**8.24**
2	Conductivity	*IS 3025 Part 14, (reaf 2019)*	µS/cm	**152**
3	Turbidity	*IS 3025 Part 10, 2023*	NTU	**6.5**
4	Total Dissolved Solids	*IS 3025 Part 16, raf 2023*	mg/L	**89.0**
5	Chloride	*IS 3025 Part 32, (reaf 2019)*	mg/L	**20.6**
6	Fluoride	*IS 3025 Part 60, (reaf 2019)*	mg/L	**BDL**
7	Total Hardness as $CaCO_3$	*IS 3025 Part 21, (reaf 2019)*	mg/L	**43.2**
8	Total Alkalinity as $CaCO_3$	*IS 3025 Part 23, 2023*	mg/L	**62.5**
9	Iron	*IS 3025 Part 53, (reaf 2019)*	mg/L	**0.23**
10	Sulphate	*IS 3025 : Part 24 : Sec 1 : 2022*	mg/L	**29.6**
11	Calcium as $CaCO_3$	*IS 3025 Part 40, (reaf 2019)*	mg/L	**20.8**
12	Magnesium as Mg	*IS 3025 Part 46, 2023*	mg/L	**3.4**
13	Total Suspended Solids	*IS 3025 Part 17, 2022*	mg/L	**25.0**
14	Nitrate- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**3.84**

15	Nitrite- Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
16	Dissolved Oxygen	*IS 3025 Part 38, raf 2019*	mg/L	**6.2**
17	Chemical Oxygen Demand	*IS 3025 Part 58, 2023*	mg/L	**18.0**
18	Biochemical Oxygen Demand	*IS 3025 Part 44, 2023*	mg/L	**4.8**
19	Potassium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**1.0**
20	Sodium	*IS 3025 Part 45, (reaf 2019)*	mg/L	**9.4**
21	Ammoniacal Nitrogen	*IS 3025 Part 34, (reaf 2019)*	mg/L	**BDL**
22	Phosphate as P	*IS 3025 Part 31 Sec 1, 2022*	mg/L	**0.82**
23	Sulphide	*IS 3025 Part 29, 2022*	mg/L	**BDL**
24	Arsenic	*IS 3025 (Part 37), 2022*	mg/L	**BDL**
25	Copper	*IS 3025 (Part 42), reaf 2019*	mg/L	**BDL**
26	Lead	*IS 3025 (Part 47), reaf 2019*	mg/L	**BDL**
27	Chromium	*IS 3025 (Part 52), raf 2019*	mg/L	**BDL**
28	Zinc	*IS 3025 (Part 49), raf 2019*	mg/L	**BDL**
29	Cadmium	*IS 3025 (Part 41), 2023*	mg/L	**BDL**
30	Nickel	*IS 3025 (Part 45), raf 2019*	mg/L	**BDL**
31	Manganese	*IS 3025 (Part 59), 2023*	mg/L	**BDL**
32	Total Coliform	*IS 1622: 1981 (reaf: 2019)*	/100ml	**68**

Note: The results relate to the parameter tested only.

----------***End of Report***----------

For ABNS Scientific Services,

07/10/2024

Report reviewed by: Dr. Mayur Jyoti Mahanta (QM)

Authorized Signatory
Dr. Bidyut Jyoti Sarmah (TM)

MEGHALAYA STATE POLLUTION CONTROL BOARD

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VEHICLE EMISSION TEST REPORT
(DIESEL DRIVEN)

Date of testing : 28/06/24

Certified that the exhaust emission of Vehicle No. M10S K 7532 has been tested and the result is as under :-

Method of Test	Maximum Smoke Density			Result
	Light Absorption Co-efficient (l/m)	Bosch Units	Hartridge Unit	(Hartridge Smoke Unit)
a) For vehicles other than agricultural tractors : Full load at 60 to 70% of maximum engine rated rpm declared by the manufacturer. or	3.25	5.2	75	
Free acceleration for turbo charged engine or Free acceleration for naturally aspirated engine	2.45	--	65	25.9
b) For agricultural tractors 80% load corresponding to maximum power developed in PTO performance tests.	3.25	5.2	75	

Certified that the vehicle meets the emission standard and this certificate is valid for 6 (six) months from the date of issue. This Certificate is valid upto 28/12/2024

MEGHALAYA STATE POLLUTION CONTROL BOARD CENTRAL LABORATORY SHILLONG

Signature of Issuing Official

Authority vide Order No. Gen/Trans/89/216/52 dt. 03/02/1990 of Commissioner & Transport Govt. of Meghalaya.

ANNEXURE– IV

Ground water level results for the period Apr – Jun 2024 and Jul – Sep 2024

(Vibrating Wire Piezometer)

Location	Apr			May			Jun		
	Reading in Unit meter			Reading in Unit meter			Reading in Unit meter		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
PWD Road (To the south west of the Mine)	47.88	51.50	49.61	51.50	53.24	51.87	53.58	55.62	54.71
Near Mine entry gate (To the Southof the Mine)	50.20	52.78	51.54	52.78	53.96	53.02	54.02	55.70	55.00
Near Transit House (To the South East of the Mine)	47.85	51.20	49.38	51.22	52.32	51.55	52.68	54.66	53.79

Location	Jul			Aug			Sep		
	Reading in Unit meter			Reading in Unit meter			Reading in Unit meter		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
PWD Road (To the south west of the Mine)	54.28	55.68	54.91	54.20	55.04	54.67	54.18	54.78	54.43
Near Mine entry gate (To the Southof the Mine)	54.12	55.74	54.88	54.04	54.78	54.30	54.00	54.46	54.22
Near Transit House (To the South East of the Mine)	53.16	54.78	53.84	53.08	53.72	53.33	53.12	53.44	53.30