



Environmental Protection Agency

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Environmental Permit

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

Reference No.:	20231220 - HMSQO
	Large -C3- US\$ 2,500, per year
Fee Paid:	US \$ 2,500 (April, 2024 to March, 2025) - One (1) year
Addressee:	Mr. Tangzhou Liu H.M.S Mining Inc. 121, Greenheart Street Makenzie Linden.
Activity:	Construction and Operation of a Stone Quarry

Mr. Tangzhou Liu Dave Narine, trading and operating under the name H.M.S Mining Inc., hereinafter referred to as the “Permit Holder”, is hereby authorised in accordance with the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, to construct operate a quarry located in Block LM40: H-1003/000/2023, at the Confluence of the Essequibo River and the Timitikuru Creek, Winiperu, Mazaruni Mining District # 3, Region 7, hereinafter referred to as the “Project”, in the manner indicated in the Application for Environmental Authorisation submitted on December 20, 2023, and subject to the terms and conditions set forth herein under the Environmental Protection Act, Cap.20:05, existing and/or forthcoming Regulations made under the said Act, and/or any other applicable laws, best practices, guidelines and standards relevant to this Project.

The Permit Holder, His Servants, Agents and Sub-Contractor shall comply with the following Terms and Conditions for Operation:

1.0 GENERAL

- 1.1 Submit to the EPA an **Environmental Assessment and Management Plan (EAMP)** within the first **three (3) months** of the date that this Permit is issued, unless otherwise instructed by the EPA. The EAMP shall include but not limited to any potential environmental impacts, human risks and feasible cost-effective measures to mitigate impacts so as to manage/reduce potential

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Environmental Permit - Ref. No. 20231220-HMSQO

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environmental impacts to biodiversity, water quality, air quality, and soil degradation to an acceptable level, a Monitoring and Emergency Plan, Closure and Reclamation Plan and any other consideration as required by the Agency.

- 1.2 The Environmental Assessment and Management Plan (EAMP) required under **subsection 1.1** will inform the revision and updating of applicable conditions as set forth below and inclusion of any other conditions as the Agency sees fit to ensure protection of the environment and prevention or mitigation of pollution/contamination.
- 1.3 Make an application to the Agency to vary this Environmental Permit in instances where it becomes necessary to:
 - i. change the construction, operation, structure, or layout of the facility and all associated buildings;
 - ii. change equipment, machine, apparatus, mechanism, system or technology serving the facility;
 - iii. change the position and design of any outlet at the point or points of discharge of effluents; or effect any other change outlined in 20(3) of the Environmental Protection (Authorisations) Regulations.
- 1.3 Ensure all mining activities are conducted within the boundaries more fully described in the 'Order cited as the Quarry Licence', bearing the reference number LM40-H-1003/ 000/2023, located at the confluence of Essequibo River and Timitikuru Creek, issued by the Minister of Natural Resources and published as Special Process-Closed Area dated **December 05, 2023**.
- 1.4 Any other developmental activities which may significantly affect the environment apart from the activities covered by this Permit (Mine Site Construction, Drilling & blasting, Excavation, processing and storage of **(Quarry materials)** are **strictly prohibited** without prior approval from the EPA.
- 1.5 Install and maintain proper signage and security measures to keep unauthorized persons from accessing restricted and high-risk areas within boundaries more fully described in the 'Order cited as the Quarry Licence'.
- 1.6 Adhere to the stipulations within the **Mining Act, No. 20 of 1989, the Mining Regulations including the Mining (Amendment) Regulations, 2005, the Explosives Act, Cap 16:06, the Blasting Operations Act, Cap 65:03, and Regulations of the Maritime Administration Department of the Ministry of Public Infrastructure.**

Environmental Permit - Ref. No. 20231220-HMSQO

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- 1.7 Ensure that transportation of equipment and quarry material to and from the project site does not encumber road/river traffic and become a nuisance to the general public.
- 2.0 **CONSTRUCTION AND DEVELOPMENT**
- 2.1 Submit, at least **one (1) month** after issuance of the Permit, a Mine Plan detailing all construction and preliminary developmental activities that will be carried out on the project site to bring the mine into full scheduled production as well as the mitigation measure that will be implemented to prevent damage to land, vegetation, and prevents pollution of surface water bodies.
- 2.2 Limit cleared areas to those identified within the mine plan for ore recovery, infrastructure development, waste and stockpiles areas, etc. In instances where proposed areas have previously been cleared, a record of clearance should be maintained prior to commencement of project works.
- 2.3 Utilise the land in accordance with the site plan submitted to the Agency. All specifications of location, pathways, reserve and boundary lines must be adhered to, unless otherwise authorised.
- 2.4 Construct and maintain a good drainage system at all construction areas and ensure that the land is level and appropriately built up to avoid floods and contamination of the Essequibo River and other receiving waters.
- 2.5 Ensure the control of all electrical installations, removal, repairs, or modifications on the construction site is designated by a certified and competent electrician at all times and is authorized in writing by the Company.
- 2.6 Ensure that all workers and visitors to the construction site (s) undergo health and safety induction pertaining to the hazards prevalent on the site and persons are equipped with the necessary personal protective equipment.
- 2.7 Avoid erosion, siltation and sedimentation of the Essequibo River, any other waterways within and around the vicinity of the project site during both the construction and operation for the Quarry Site and other supporting infrastructures.
- 2.8 Completely cover or enclose all transported construction material in a manner that prevents the material from blowing, dropping, sifting, leaking, or otherwise escaping from the vehicle.
- 2.9 Construct and maintain **new or existing** pit latrine(s): according to the following requirements:



Environmental Permit - Ref. No. 20231220-HMSQO

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- a) The environs of the latrine (s) shall be kept clean in a hygienic manner and maintained both internally and externally.

The latrine (s) shall be:

- i. Built with suitable materials such as hardwood or concrete materials;
- ii. Maintained on a clay mound to prevent surface water from entering;
- iii. Properly vented with a tall ventilation pipe located on the windward side;
- iv. Fitted with a fly screen on the top of the vent to prevent the passage of flies and mosquitoes. The meshed apertures (holes) of the fly screen must not exceed 1.5 millimetres, made with corrosion resistant material to withstand intense rainfall, high temperature and strong sunlight.
- v. Positioned at least fifty (50) meters away from surface and ground water sources, creeks well or springs;
- vi. Dug at least 0.6 meters above the average water table and at least four (4) meters away from any dwelling (such as camps, residential areas and any sleeping and living quarters, etc.);
- vii. Easily accessible during bad weather and will not cause odour; and
- viii. When the maximum capacity is reached, latrine(s) should be covered with at least 0.3 meters of soil and a suitable location determined for another, in consideration of the foregoing.

3.0 OCCUPATIONAL HEALTH AND SAFETY

- 3.1 Adhere to the requirements of **the Occupational Safety and Health Act, Cap. 99:01, Laws of Guyana.**
- 3.2 Institute a transparent and accessible grievance mechanism for employees to relate and address any work-related concerns or problems which may arise and affect the well-being or performance of the workers.
- 3.3 Employ a Health, Safety and Environmental Officer(s) or a qualified person(s) to be responsible for the implementation of the Company's Environmental

Environmental Permit - Ref. No. 20231220-HMSQO

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Assessment Management Plan (EAMP) and the terms and conditions of this Environmental Permit.

- 3.4 Provide Employees with training on: good environmental management practices; occupational health and safety; and their obligations under this Permit on a regular basis.
- 3.5 Prepare and maintain a training file for all employees and third-party contractors, which shall be available upon request by EPA and submitted with the Annual Report to the EPA.
- 3.6 Employees shall at all times be well protected and equipped with Personal Protective Equipment relevant to the occupational tasks during operation. These Personal Protective Equipment (PPE) must include but not be limited to:
 - i. Safety helmets;
 - ii. Protective respiratory devices
 - iii. Safety boots with ankle support;
 - iv. Gloves with reinforced palms and fingers; and
 - v. Tightly fitted safety goggles.
- 3.7 Prepare and maintain an employee log of distribution of Personal Protective Equipment (PPE).
- 3.8 Provide well-equipped first aid and snake bite kits at the work site.
- 3.9 Ensure that communication and transportation systems are in place to respond to emergencies.
- 3.10 Provide and maintain adequate fire protection measures, in accordance with guidelines established by the Guyana Fire Service.
- 4.0 **VEGETATION CLEARING AND TOP SOIL STRIPPING**
- 4.1 Maintain natural vegetative cover as far as practical, especially in the vicinity of steep slopes occurring at project site and re-vegetate areas from which vegetation were removed.
- 4.2 Storage of topsoil (overburden) within three meters (3 m) of natural vegetation or mine face is strictly prohibited. Top soil and vegetation must be carefully stripped and stockpiled in an allocated area marked by a sign, so that it can be used for reclamation and re-vegetation as mining finishes.
- 4.3 Practice alternative methods of vegetation clearing rather than burning, such as, manual or mechanical felling or bulldozing.

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Environmental Permit - Ref. No. 20231220-HMSQO

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- 4.4 Incorporate and store vegetative debris with top soil to keep it active for reuse in site reclamation. In addition, practical measures, such as growing of vegetation, including shrubs and grasses, on stockpiles of topsoil shall be employed to reduce erosion, and dust nuisance to surrounding ecosystems.
- 4.5 Store overburden stockpiles at least Two Hundred (200) meters away from any water courses or drainage system.
- 4.6 Runoff from this overburden shall be directed to the sedimentation/settling pond for treatment before discharge.
- 4.7 Maintain the integrity of areas where riparian vegetation is located to aid in mitigating erosion/sedimentation impacts at the site.
- 4.8 Consider the weather pattern before initiating major earthworks. Monitor areas of exposed soil during periods of heavy rainfall.
- 4.9 Avoid soil compaction, erosion, rutting, siltation and sedimentation during operation by limiting the size of the disturbed area, slope length and gradient, and the duration of soil exposure.
- 4.10 Adequately cover temporary stockpiles of construction materials, and excavated waste in a designated area to prevent accidental release into the Essequibo River, especially in rainy conditions. The designated area should not be placed within 10 m of the Essequibo River, or other water bodies.
- 5.0 **PRODUCTION DRILLING AND BLASTING**
- 5.2 Submit a detailed **Drilling and Blasting Plan** that is approved by the Guyana Geology and Mines Commission (GGMC) before blasting activities commence on the concession.
- 5.3 Adhere to the protocols outlined in the Drilling and Blast Plan; any modification of the said Plan must be approved by the GGMC and submitted to the Agency within **two (2) weeks** from date of approval.
- 5.4 Employ a drilling and blasting supervisor, who is certified and licensed by the Guyana Geology and Mines Commission (GGMC).
- 5.5 Usage, storage, transport, handling, and general management of explosives shall be done in accordance with relevant laws and regulations including the **Explosives Act, 1989**, and subsequent amendments and the requirements of the Guyana Geology and Mines Commission and the Guyana Police Force.

Environmental Permit - Ref. No. 20231220-HMSQO

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 5.6 Ensure the appropriate blast design parameters are in place prior to the actual blasting. Attain minimum ground vibration by the utilization of:
- i. Appropriate delay intervals for charge ignition;
 - ii. Appropriate pattern;
 - iii. Orientation of blast holes; and
 - iv. Confinement of the charge.
- 5.7 Avoid secondary blasting as much as possible, rather, drop balling, using a heavy mass operated by a dragline shall be considered.
- 5.8 Review blast design when necessary to ensure the size of the Maximum Instantaneous Charges (MICs), detonating sequence and that the correct stemming is in place.
- 5.9 Utilise deck charges to reduce ground vibrations.
- 5.10 Evacuate and guard all sites before shots are fired. A distinctive **audible warning signal** must be given before firing and at the all-clear, and notify nearby communities and homesteads of blasting times.
- 5.11 After the firing of Blast pattern, a Post Blast inspection must be conducted by a Certified Blaster/Shotfirer to identify any potential hazards or evidence of a misfire and/or the associated corrective action required to make the area safe before an "ALL Clear" is given prior to personnel and/or equipment being allowed back into blast radius.
- 5.12 Blast Pattern should be allowed a "Post Blast Fume Dispersion" time of **30-40 minutes** to allow prevailing winds or air currents enough time to readily dilute and dissipate to the atmosphere any gases generated in open pit blasting before the Re-entry of Personnel to this area.
- 5.13 After entering Blast radius any person experiencing sudden acute effects of coughing, shortness of breath or irritation of the mucous membranes of the eyes, nose or throat following post-blast Nitric Oxide (NO_x) events must be examined by a medical practitioner without delay, even if no NO_x smell was noticed or symptoms are mild.
- 6.0 **CRUSHING PLANT**
- 6.1 Ensure that the crushing plant and ancillary equipment are operated in strict compliance with the manufacturer's specifications.
- 6.2 Implement well-designed sprinklers located at strategic points to contain/reduce the level of fugitive dust being emitted into the environment.

Environmental Permit - Ref. No. 20231220-HMSQO

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- 6.3 The unloading area of crushers and conveyor belts are to be enclosed and provided with a dust suppression system.
- 6.4 Ensure at all times crushing equipment is secured to a reinforced base so as to reduce the level of vibration and noise emitted from this equipment.

7.0 ROADS AND BRIDGES

- 7.1 Ensure that the running surface of used roads are crowned with a compacted layer and with good drainage on both sides to catch and direct water to the local drainage system.
- 7.2 Soil erosion shall be minimised by but not limited to constructing sloped roads and turnout drains at regular intervals, filling in ruts and holes that develop during road/trail use with suitable materials such as compacted fill and crush and run etc.
- 7.3 Submit as part of the EAMP a **River and Road Traffic Plan** that should include but not be limited to the capacity of trucks and frequency of materials being transported and measures to curb potential impacts.
- 7.4 Equip all trucks, mechanical machineries and vehicles with the necessary reflecting signage to warn the public of impending danger of parked/moving trucks with construction materials on the public thoroughfare.
- 7.5 Install adequate and appropriate road signage with provisions for safe line of sight along all access roads and tracks. Signs shall inform users of dangerous bends, crossing of haul trucks, vehicle speed limits, etc.
- 7.6 Operate and maintain roads, drainage ditches, culverts and or berms, etc. in a manner that results in minimal impact on public health and the environment.
- 7.7 Implement suitable measures to impede the flow of effluent runoff and sediments into the surface water body being bridged.

8.0 WATER QUALITY MANAGEMENT

- 8.1 Adhere to the provisions of the **Environmental Protection (Water Quality) Regulations, 2000.**
- 8.2 Maintain the integrity of the existing waterways at all times. Discharges from sediment ponds or the operation into the **Essequibo River and Timitikuru Creek and surrounding environment** should be in accordance with the Guyana National Bureau of Standards Interim *Guidelines for Industrial*

Environmental Permit - Ref. No. 20231220-HMSQO

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Effluent Discharge into the Environment (IFC), US EPA and World Bank Water Quality Standards. The following maximum allowable limits should not be exceeded:

Parameter(s)	Maximum Allowable Limits	Frequency of Monitoring
pH	5.0 – 9.0	Bi- Annual
Temperature	<40°C	Bi- Annual
Biological Oxygen Demand (BOD)	<50 mg/L	Bi- Annual
Chemical Oxygen Demand (COD)	< 250 mg/L	Bi- Annual
Total Suspended Solids (TSS)	<50 mg/L	Bi- Annual
Oil and Grease (O&G)	<20 mg/L	Bi- Annual
Turbidity (NTU)	<50mg/L	Bi- Annual
Total coliform	< count/100ml	Bi- Annual
N as NH ₃	<50mg/L	Bi- Annual

- 8.3 Monitor the water quality for the parameters listed in 8.2 above within the **Essequibo River and Timitikuru Creek** on a biannual basis, (once in the wet season and once in the dry season). Grab samples should be obtained from the following sample points:
- a) At the point of discharge from the quarry into sediment ponds;
 - b) **Fifteen (15) meters** Upstream of sediment pond discharge point; and
 - c) **Fifteen (15) meters** Downstream of sediment pond discharge point.
- 8.4 Ensure that sediment control structures such as soak ways, settlement/water detention ponds and silt fences, are implemented at the site(s) to prevent the direct inflow of sediments to surface water.
- 8.5 Ensure that waste/spoil piles are surrounded by perimeter berms to manage discharges of sediment; all runoff from this area shall be directed to a settling pond.
- 8.6 Ensure erosion susceptible areas are sloped, benched or lined with erosion control structures to manage surface runoff.
- 8.7 Establish and maintain a vegetative **two hundred (200) meters** buffer zone between the rock deposit and the **Essequibo River and Timitikuru Creek** to reduce erosion.

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Environmental Permit - Ref. No. 20231220-HMSQO

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- 8.8 Construct and maintain a good drainage system capable of handling the probable maximum precipitation storm event at all facilities. Storm water discharge should be directed into appropriately designed sediment ponds before discharge into surrounding waterways.
- 8.9 Maintain the settling ponds at the project site. The pond should allow for maximum retention time of waste water to allow for settling of suspended solids and natural degradation of possible contaminants prior to water being released to the natural environment.
- 8.10 Silt fences should be installed at discharge points of drainage systems to reduce the sediment loads entering sediment ponds.
- 8.11 As far as possible, divert surface water runoff from higher mine benches to prevent it from reaching lower workings. Where possible, strategically place low permeability materials to restrict water flow into mining areas.
- 8.12 As far as possible, implement practical measures to prevent pollution of the **Essequibo River and Timitikuru Creek and any surrounding surface water body**. Domestic waste water shall not be discharged directly into watercourses. Install a filter treatment system at the domestic water discharge point for further treatment before discharge.

9.0 HAZARDOUS WASTE MANAGEMENT

- 9.1 Adhere to the provisions of the **Environmental Protection (Hazardous Waste Management) Regulations, 2000**, and the stipulations within the **Pesticides and Toxic Chemicals Act, No. 13 of 2000**, the Pesticides and Toxic Chemicals Regulations, No. 8 of 2004, the Pesticides and Toxic Chemicals (Amendment) Regulations, No. 8 of 2007.
- 9.2 All hazardous waste shall be stored in a covered, bunded area. This area shall include the following:
 - i. Signage- "Hazardous Waste Storage Area";
 - ii. Low traffic;
 - iii. No floor drains; and
 - iv. Secondary containment capable of containing 110% of the largest volume therein.
- 9.3 The Hazardous Material Storage areas shall be clearly labelled, secured and well illuminated when not in use. The following warning signs shall be clearly posted:
 - i. Danger- Chemical Storage Area "Authorized Personnel Only";
 - ii. Read and follow all label directions;

Environmental Permit - Ref. No. 20231220-HMSQO

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- iii. No Smoking; and
- iv. No Eating or Drinking.

9.4 Establish and maintain a register of hazardous materials or chemicals used or generated by the operation. Submit to the Agency, twice yearly (June and December), a report on hazardous waste generation and management for the previous six months using the most recent version of the EPA's Recording and Reporting Form of Hazardous Waste and including:

- i. The name, location and type of facility;
- ii. Types and quantities (in metric units) of hazardous waste generated;
- iii. Manner of storage, use, any applied treatment standards/methods and disposal of these substances;
- iv. Data concerning off-site shipments of waste, i.e. local disposal facility utilized, country to which hazardous waste is shipped, purpose of shipment and amount of waste shipped;
- v. A summary of any accidents that may have occurred and any action taken;
- vi. Any waste minimization efforts undertaken by your facility for hazardous material/waste; and
- vii. Any other matter the Agency may require.

The Agency considers all materials listed in Schedule I and II of the Environmental Protection (Hazardous Wastes Management) Regulations, 2000, to be hazardous. (Please see attached list.)

9.5 (a) Collect and store waste oils, used batteries, used tires and any other hazardous waste on site until ready for disposal in a manner approved by the EPA.

(b) Refrain from draining fuel/lubricants, including waste oils of any quantity from equipment on to the ground and waterways.

9.6 Contain all chemicals securely and conform to the safety conditions as outlined in the Material Safety Data Sheet for each chemical. Keep all chemicals in well-sealed and individually labeled containers and properly store in an impervious and well-ventilated room/bond.

9.7 Safety Data Sheets for all hazardous materials shall be readily available and easily accessible at all times at the Facility.

9.8 Take the necessary precautionary measures during the transport, transfer, use and handling of all hazardous material.

9.9 Implement a programme to ensure regular and preventative maintenance of

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Environmental Permit - Ref. No. 20231220-HMSQO

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machinery and equipment to prevent leaks and minimize air emissions and hydrocarbon releases.

- 9.10 Do not service vehicles in mining pits except in instances of emergency repairs.
- 9.11 Maintain emergency spill cleanup kits on site for response to spills.
- 9.12 A fully stocked first-aid kit shall be readily available at the hazardous storage Facility.
- 9.13 Material storage containers shall be inspected weekly for signs of leakage or corrosion and damaged containers must be replaced immediately. Inspection Reports must be maintained and signed by the appropriately qualified inspecting officer and his/her supervisor.
- 9.14 Elevate all waste oil/ chemical tanks and containers so that leaks are easily identifiable.
- 9.15 Store all lubricants, coolant, acid-generating materials, waste oil and any material contaminated with hydrocarbons such as used filters and oily rags in an approved manner, such as in drums or surface tanks with impervious bunds to contain spillage. Ensure that the areas assigned for storage of the aforementioned materials are located away from operating areas, drainage lines and major waterways.

10.0 FUEL HANDLING AND STORAGE

- 10.1 Fuel shall at all times be stored above-ground, in a cool, dry place and away from ignition sources. 'No Smoking' signs shall be posted where fuel is handled or stored.
- 10.2 Construct and maintain an impervious secondary containment wall around fuel storage tanks, creating a temporary holding area in the event of accidental spillage. The containment wall for areas with multiple tanks must have the capacity to provide at least 110% containment of the largest tank. The containment wall for areas with solitary tanks must have the capacity to provide 110% containment of each fuel tank.
- 10.3 Existing secondary containment around the fuel tanks shall be inspected monthly for cracks and breakage to ensure they are liquid tight to withstand hydrostatic pressure.
- 10.4 All piping must enter or exit the containment over the wall and no part of the tank infrastructure (e.g., dispenser, filling hoses and valves) shall protrude outside the containment.

Environmental Permit - Ref. No. 20231220-HMSQO

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- 10.5 Ensure that adequate signage is installed in fuel storage areas, such as 'No Smoking', 'Flammable Materials', etc.
- 10.6 Protection measures for fuel storage tanks such as painting and coating shall be maintained to minimize corrosion of fuel tanks.
- 10.7 Maintenance and/or repair of fittings, pipes and hoses shall be conducted monthly and in accordance with manufacturer's specifications. A summarized inspection report shall be compiled and submitted to the Agency as part of the Annual Report required by **Condition 15.2**.
- 10.8 Secondary containment, drip trays or other overflow and drip containment measures shall be installed and maintained at connection points or other possible overflow points.
- 10.9 Leak detection systems shall be installed on all fuel tanks. At least two (2) of the following measures shall be implemented:
 - i. Overflow alarms on tanks;
 - ii. Gauging system;
 - iii. Dipstick measurements;
 - iv. Sensors on walls of tanks; or
 - v. Electric Shutdown Valve.

11.0 WASTE MANAGEMENT

- 11.1 Adhere to the provisions of the **Environmental Protection (Litter Enforcement) Regulations, 2013**.
- 11.2 Promote proper solid waste management and disposal practices at your facility at all times. Waste shall not be disposed of in or near to the Essequibo River or any other waterways.
- 11.3 Reduction, recycling and/or reuse of waste shall be promoted at all times.
- 11.4 Ensure that solid waste pits are located at least **one hundred (100) meters** away from any watercourses, or habitation. The waste sites shall be constructed above the ground water table and lined to the floor with an impervious earthen or other material to prevent leaching to ground water.
- 11.5 Maintain good house-keeping, sanitary and hygienic practices and the aesthetic quality of the surroundings at all times.
- 11.6 Ensure that garbage receptacles are placed in strategic locations within the Mine site. Have separate bins to facilitate the collection and sorting of waste according to liquid and solids; organic and inorganic; degradable and non-degradable.

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Environmental Permit - Ref. No. 20231220-HMSQO

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 11.7 Construct and maintain a septic tank system onsite. Septic Tanks at all times shall be accessible for cleaning and de-sludging. Septic tanks should be installed with a sand and charcoal filter bed, or other appropriate design for further treatment. This must be in accordance with *Guyana National Bureau of Standards Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems*.
- 11.8 Any modification to the Septic Tank (s) must be in accordance with the *Guyana National Bureau of Standards (GNBS) Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems*.
- 11.9 Dumping of waste (Domestic and Construction) into the Essequibo River is **prohibited**. Waste should not be stored in close proximity to the aforementioned river, this inclusive of waste oil and/or fuel.

12.0 AIR QUALITY MANAGEMENT

- 12.1 Adhere to the provisions of the **Environmental Protection (Air Quality) Regulations, 2000**.
- 12.2 Comply with the *World Health Organisation (WHO) Air Quality Guidelines for Particulate Matter in the Environment*, not exceeding the limits below:
- PM_{2.5}**: 10 µg/m³ annual mean
25 µg/m³ 24-hour mean
- PM₁₀**: 20 µg/m³ annual mean
50 µg/m³ 24-hour mean
- 12.3 Respond to equipment malfunction or **inefficiencies** which may result in visible emissions to air. In the event of malfunction leading to abnormal emissions the operator shall:
- a) investigate and undertake remedial action **immediately**;
 - b) adjust the process or activity to minimise those emissions; and
 - c) Record the events and actions taken.
- 12.4 Establish and maintain the vegetative buffer zone at least **two hundred (200) meters** between the Quarry and other contiguous land uses to buffer noise and fugitive dust emissions.

Environmental Permit - Ref. No. 20231220-HMSQO

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- 12.5 Ensure measures are taken to avoid or reduce dust pollution from the mines and the road. Dust suppressants i.e., water soaking etc. shall be used during dry season and as necessary.
- 12.6 Install enclosures and dust suppression systems on the mobile and fixed crushing plant, screening plant and other equipment.
- 12.7 Ensure that external conveyors to/from the plant are affixed with covers.
- 12.8 Limit vehicle speeds on the internal roadways.
- 12.9 As far as possible, site and orient stockpiles and storage areas to reduce wind exposure.
- 12.10 Operate and service all mechanical equipment and vehicles in accordance with manufacturer's specifications at all times to minimise atmospheric emissions.

13.0 NOISE MANAGEMENT

- 13.1 Adhere to the provisions of the **Environmental Protection (Noise Management) Regulations, 2000.**
- 13.2 Comply with the *Guidelines for Noise Emissions into the Environment* for *Guidelines for Noise Emissions into the Environment*, not exceeding the limits below at a distance of 15 m (50 ft) from the source or property boundary, whichever is closer.

Industrial Limits **100 dB** (Day-time (06:00-18:00 h))
80 dB (Night -time (18:00-06:00 h))

- 13.3 As far as practicable equip all sound-making devices, e.g., generators, planers, etc. with silencers or mufflers to reduce noise level and/or enclose all sound making devices in structures constructed with materials of good insulation properties (e.g., hollow concrete blocks, insulation boards, solid clay bricks, etc.)
- 13.4 Ensure that all equipment and machinery are placed on foundations properly designed to ensure effective damping of vibrations.
- 13.5 Operate and service all mechanical equipment in accordance with manufacturer's specifications at all times to minimise atmospheric emissions.

14.0 BIODIVERSITY PROTECTION

- 14.1 Identify and avoid sensitive ecological areas within your mining claim.

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Environmental Permit - Ref. No. 20231220-HMSQO

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- 14.2 Undertake construction, including clearing of vegetation at a pace slow enough to ensure that terrestrial animals and aquatic life can move to other locations.
- 14.3 Avoid blasting/intense construction activities during sensitive biodiversity seasons of the year as advised by the Guyana Wildlife Commission.
- 14.4 Establish vegetation around production facilities and along access roads to mitigate the impact on terrestrial resources.
- 14.5 Conduct and record visual observances of aquatic and terrestrial biodiversity on a daily basis submit reports as a component of the Environmental Annual Report required in **condition 15.2**.
- 14.6 Report all occurrences of illegal wildlife trapping and trading to the EPA and Wildlife Management Authority.
- 14.7 Communicate to employees that the capture, trading and/or removal of endangered and vulnerable wildlife from the project area and surrounding areas is forbidden, in accordance with the **Wildlife Conservation and Management Act, 2016**, and any of its applicable forthcoming Regulations.

15.0 COMPLIANCE MONITORING AND REPORTING

- 15.1 Monitor the implementation of the conditions of this **Environmental Permit**, insofar as they involve adherence by employees and all third parties under your direction.
- 15.2 Submit **Environmental Annual Reports** to the EPA on or before **March 31** every year on your compliance with this Permit.
- 15.3 Ensure the reports and records of monitoring include the following:
 - i. The names of the individuals and designations, who conducted sampling, prepared and compiled the reports;
 - ii. The date, place/location, time, weather conditions, techniques and methods used in sampling;
 - iii. The date the measurements were compiled or analyzed and the names of the individuals who compiled the information;
 - iv. Observations, readings, calculations, benchmarks, bench data, the results of analyses;
 - v. Limitations of the sampling process and all other occurrence at the time of study, which may affect the results;
 - vi. Photographs and drawings of all relevant aspects of the operation; and
 - vii. The state of operation of facilities at the time of measurement, including planned and unplanned shutdowns, production levels and

Environmental Permit - Ref. No. 20231220-HMSQO

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achievement of design capacity, identification of release point, source of release and substances being released.

- 15.4 Comply with any lawful directions given by the EPA from time-to-time in furtherance of the implementation of any international or other obligations for the environmental protection.
- 15.5 Inform the Agency prior to or within **thirty (30) days** of any change of name or ownership of the operation.
- 15.6 Notify the Agency within **twenty-one (21) days** in event of bankruptcy, liquidation or receivership of the Permit Holder or if the Company becomes a party to an amalgamation.
- 15.7 Notify the EPA within **forty-five (45) minutes** of the occurrence of any environmental emergencies such as a sudden disaster, accident, natural, technological or human induced factors that cause or threaten to cause severe environmental damage as well as harm to human health or livelihood.
- 15.8 Report to the Agency any non-compliance(s) with the **Environmental Permit**:
 - 15.8.1 Within **twenty-four (24) hours** of the time the Holder of the Environmental Permit becomes aware of the non-compliance, the anticipated manner in which it may endanger human health or the environment.
 - 15.8.2 Within **seventy-two (72) hours**, submit to the Agency a written report containing a description of the non-compliance, its cause and the period of non-compliance including exact dates and time.
 - 15.8.3 Submit a report to the Agency indicating the reasons and the anticipated time it is expected to continue if the non-compliance has not been corrected.
- 15.9 Implement relevant measures/agreements to avoid conflicts with other land users/communities. Conflicts should be reported to the relevant authorities if they occur.
- 15.10 Inform the **National Trust and Walter Roth Museum** if any artefacts of archaeological and anthropological significance are unearthed during Major Stone quarry operations.
- 15.11 Submit to the EPA the results of all periodic audits conducted by the GGMC.

Lee Teegoh
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Environmental Permit - Ref. No. 20231220-HMSQO

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- 15.12 Notify the EPA within **forty-five (45) minutes** of any accidental release of contaminants or incidence of pollution into the environment. The Permit Holder shall provide the financial, equipment and technical capacity to adequately respond to any emergency that may occur on site and emergency response shall be immediate.
- 15.13 Submit to the Agency a detailed **Project Closure Plan** for approval **two (2) years** prior to closure. Thereafter, the closure plan will be updated and reviewed at a frequency agreed to with the Agency, as needed.
- 15.14 The Permit Holder shall provide the financial, equipment and technical capacity to adequately respond to any emergency that may occur on site and emergency response shall be immediate.

16.0 INSTITUTIONAL AUTHORITY/LIABILITIES

- 16.1 The Permit Holder shall be strictly liable for any loss or damage to the environment through any act caused intentionally or recklessly, through the adverse effect of any discharge or release, or cause or permit the entry of pollution, contaminant in any amount, concentration or level in excess of that prescribed by the regulations or stipulated by any environmental authorisation which are attributed to any Project (and more specifically petroleum activities). S. 19(1) EP Act, Cap. 20:05, Laws of Guyana.
- 16.2 The Permit Holder shall comply strictly with section 39 (1), (2), (3) and (4) of the Environmental Protection Act Cap 20:05, Laws of Guyana.
- 16.3 The Permit Holder shall strictly observe section 19 (3) of the Environmental Protection Act Cap 20:05, Laws of Guyana.
- 16.4 The Permit Holder may be liable for environmental damage due to pollution from its activities within Guyana.
- 16.5 The EPA reserves the right to conduct regular inspections of the Permit Holder's operation as part of its monitoring and enforcement requirements under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.
- 16.6 The Permit Holder, His Servants, Agents and/or Sub-Contractor(s) shall, at all times, allow entry to the Permitted facility to any Officer designated by the EPA for the purposes of conducting inspections or any other legitimate business of the Agency. Pursuant to s. 38 of Environmental Protection Act, Cap. 20:05, it is an offence to **assault, obstruct or hinder** an authorised person in the execution of his/her duty under the said Act or its Regulations and the Permit

Environmental Permit - Ref. No. 20231220-HMSQO

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- Holder be liable to penalties prescribed under paragraph (c) of the Fifth Schedule for doing so.
- 16.7 The EPA reserves the right to review/amend the conditions attached to this Permit, which also includes the review and/or amendment of permit fees in consideration of any changes in fee structure as determined by the Agency for projects of this nature.
- 16.8 The EPA shall have the right to cancel or suspend this Permit for breach of any of the terms and conditions contained herein.
- 16.9 This Environmental Permit is not the final consent; all relevant permission shall be obtained from other regulatory bodies for continued operation.
- 16.10 The Permit Holder shall compensate any Party who suffers any loss of damage as a result of the attributed project. (Part V, s.19 (3) (e) Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 16.11 The Permit Holder shall be responsible for the payment of all cost related to the assessment of damage and costs for the independent assessor(s).
- 16.12 The Agency (EPA) shall notify the Permit Holder immediately of any written claim or notice sent by any complainant seeking loss or damage for negligence as a result of the Permit Holder lack of due care and diligence.
- 16.13 Should the Permit Holder contravene or is likely to contravene any condition of this Permit, the Agency (EPA) may serve on him an enforcement notice in accordance with s. 26 of the Environmental Protection Act, Cap.20:05, Laws of Guyana.
- 16.14 Where it appears to the Agency (EPA) that the Permit Holder is engaged in any activity that may pose serious threat to natural resources or serious pollution of the environment or any damage to public health, the Permit Holder shall be issued with a Prohibition Notice Order to immediately cease the offending activity in accordance with s. 27 Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 16.15 Where the Permit Holder in accordance with s. 19(3) is found liable for the contaminant or for the process involving the contaminant or who causes or permits a discharge as aforementioned in relation to above, the Permit Holder shall:
- i. Immediately notify the Agency of the discharge;
 - ii. Concentration and amount of contaminant;
 - iii. Circumstances of the discharge; and




Environmental Permit - Ref. No. 20231220-HMSQO

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- iv. What action he/she has taken or intends to take to restore the natural environment; and
 - v. Be liable to pay for the cost of an independent investigation into the discharge.
- 16.16 The Permit Holder shall be liable of any gross negligence or willful misconduct caused by the Permit Holder, his Servants and/or Agents, to the marine environment, biodiversity, protected species and natural habitat with respect to any release or discharge, spill, contaminant fluids, oil or lubricants from the fuel storage at any facilities permitted under this project.
- 16.17 This Environmental Permit is effective for the period stipulated herein **March, 2024 to February, 2025**. This Environmental Permit (Renewed) shall remain valid until **February 28, 2025 unless** otherwise cancelled, suspended, modified or varied in accordance with the provisions of this Permit or the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisation) Regulations, 2000.
- 16.18 This Environmental Permit must be renewed by submitting a completed *Application Form for Renewal of Environmental Authorization* to the Agency at least six months before this Permit expires, that is, no later than **August 31, 2024**.
- 16.19 Any late submission of renewal application(s) after the specified date as stated above, the agency requires the Permit Holder to pay, in addition to the renewal fee, a late penalty fee (accruing at the time such obligation was first owed for renewal) at a rate of **two thousand dollars (\$2,000.00) per day for every day late**, until such renewal application is submitted to the Agency, without prejudice to any other rights of the Permit Holder in connection therewith.
- 16.20 Failure to comply with the requirements of this Permit shall render the Permit Holder liable to prosecution and to civil penalties and/or injunctive reliefs prescribed under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act 2005, and the Environmental Protection (Authorisations) Regulations 2000, including under any existing and forthcoming regulations made under the said Act or any other applicable Laws of Guyana.


Environmental Permit - Ref. No. 20231220-HMSQO

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Signed by  on behalf of the Environmental Protection Agency
Kemraj Parsram
Executive Director
Executive Director

Date: 8. 4. 2024

I hereby accept the above terms and conditions upon which this Environmental Permit is granted and agree to abide by the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, the Environmental Protection (Authorisations) Regulations, 2000, and any forthcoming regulations, best practices, guidelines and standards made under this Act.

NAME:	TANGZHOU LIU
SIGNATURE:	
DESIGNATION:	owner
DATE:	08/04/2024



