



**Environmental  
Protection  
Agency**

Ganges Streets, Sophia,  
Georgetown, GUYANA  
Tel.: (592)-225-0506  
Fax: (592) – 225- 5481  
Email: [epa@epaguyana.org](mailto:epa@epaguyana.org)  
Website: <http://www.epaguyana.org>

# Operation Permit (Renewed)

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.:	20190705- BQBJI
Fee:	Large (C3) – US\$2,500 per year
Fee Paid:	US \$ 12,500: Five (5) years (August, 2021 to July, 2026)
Addressee:	<b>Mr. Tamesh Jagmohan</b> <b>Director</b> <b>Black Jaguar Investment Group Inc.</b> <b>Barabara Quarry Project</b> 582, Section A, Great Diamond, East Bank Demerara.
Activity:	Operation of a Stone Quarry with Processing



Mr. Tamesh Jagmohan, trading and operating under the name Black Jaguar Investment Group 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 operate a Stone Quarry With Processing within the confines of designated Block LM 40: B- 1001/000/19 located at the confluence of Mazaruni and Turtruba Rivers, Mazaruni Mining District Number 03, hereinafter referred to as the “Project”, in the manner indicated in the Application for Renewal of Environmental Authorisation submitted on November 12, 2020, 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 existing and/or forthcoming laws, best practices, guidelines and standards relevant to this project.

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**This is a Renewal of the Operation Permit, Reference # 20190705- BQBJI, issued on October 30, 2019 and expired on September 30, 2020. This Operation Permit-Renewed is issued pursuant to the Environmental Protection (Authorisations) Regulations, 2000.**

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

**1.0 OPERATION**

- 1.1 Comply with the Environmental Management Plan (EMP) including *inter alia* Project Description, Policy, Legislative and institutional framework, Project Environment, Stakeholder Engagements, Impact Assessment, Environmental Management Plan, Closure and Decommissioning Planning, as detailed in the Environmental Management Plan submitted on June 14, 2021 and approved on July 29, 2021.
- 1.2 Notify the Agency in writing and obtain its approval for **ANY** proposed changes to the operation of the Quarry **at least fourteen (14) days prior** to making the change. The notification shall contain a **description of the proposed change in construction or Operation**. It is not necessary to make such a notification if **an Application to vary** this permit has been made and the application contains a description of the proposed change. In this condition '**change in construction or Operation**' means a change in the nature or functioning, or an extension, or any additional installation, which may have consequences for the environment, including but not limited to the following:
  - I. Changes in construction, structure, layout of the facility;
  - II. Installation of new and/or changes to equipment, machine, apparatus, mechanism, system or technology serving the facility or operation;
  - III. Any technology installed at the facility from which effluent may be discharged; and
  - IV. Any other circumstance prescribed by Regulation 20(3) of the Environmental Protection (Authorisations) Regulations.
- 1.3 Ensure all mining activities are conducted within the boundaries morefully described in the '**Notice of Intention to Grant Quarry Licence**', bearing the reference number LM 40: B- 1001/000/19, located at the confluence of Mazaruni and Turtruba Rivers, Mazaruni Mining District Number 03, issued by the Guyana Geology and Mines Commission (GGMC) and published in the Official Gazette of Guyana dated October 21, 2020.

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- 1.4 Maintain all demarcated boundary limits for the site claim and the periphery of the concession as prescribed by the Guyana Geology and Mines Commission (GGMC), using signage, fences or other means.
- 1.5 Maintain demarcated boundary limits for the mine site and a non-extractable, vegetated buffer zone at least 20 m wide as follows:
  - Between your mining block and other different contiguous land-use activities.
  - Around the mine site.
  - Around the property boundary.
  - Around any water source/spring located on the property.
- 1.6 Ensure proper signage and security measures to keep unauthorized persons from accessing restricted and high-risk areas are maintained at all times.
- 1.7 Any other developmental activities which may significantly affect the environment apart from the activities covered by this Permit (blasting, extraction, processing and storage of quarry materials) are **strictly prohibited** without prior approval from the EPA.
- 1.8 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.**
- 1.9 Ensure that the transportation of quarry materials by tugs and/or barges to and from the project site does not encumber traffic on the Mazaruni River, and is done in accordance with the requirements of the Maritime Administration Department (MARAD).
- 1.10 Take necessary precautions to avoid erosion, siltation and sedimentation of the Mazaruni River in the vicinity of the project site during the construction phase of the proposed Wharf.
- 1.11 Ensure that all construction and dredging works at the project site are conducted in accordance with the requirements stipulated by approvals/no-objections issued by MARAD and the Sea and River Defense Authority; and the Drainage & Irrigation Laws of Guyana.
- 1.12 Ensure that all construction dredging and maintenance dredging are safely conducted to prevent any negative impacts on habitats, human health and/or the environment, including the disposal and management of associated dredged

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material.

- 1.13 Dredging must only be conducted for the new infrastructure component (Wharf) to create or maintain safe navigation access and for construction activities. Should dredging be required for a new channel leading to the wharf, an Application for Environmental Authorisation must be submitted to the EPA.
- 1.14 Appropriate methods for excavation and dredging must be selected to minimise the suspension of sediments and destruction of benthic habitat.
- 1.15 Disposal of excavated and dredged materials into the Mazaruni and Turtruba Rivers or any other surface water bodies are strictly prohibited.
- 1.16 Ensure adequate treatment and proper final disposal of dredged materials.

**2.0 EMPLOYEES, OCCUPATIONAL HEALTH AND SAFETY**

- 2.1 Adhere to the requirements of **the Occupational Safety and Health Act, Cap. 99:01, Laws of Guyana.**
- 2.2 Provide Employees with training on: good environmental management practices; occupational health and safety; and their obligations under this Permit on a regular basis.
- 2.3 Ensure that functional communication and transportation systems are in place to respond to emergencies.
- 2.4 Ensure all employees and third-party contractors are aware of the Conditions of this Operation Permit – Renewed (20190705 - BQBJI) and provide training on the requirements of the Permit and good environmental management practices.
- 2.5 Prepare and maintain a training file for all employees and third-party contractors, which shall be available upon Officers' request during Compliance inspection and submitted with the Annual Report to the EPA.
- 2.6 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.



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- 2.7 Prepare and maintain an employee log of distribution of Personal Protective Equipment (PPE).
- 2.8 Provide and maintain adequate fire protection measures, in accordance with guidelines established by the Guyana Fire Service.

**3.0 VEGETATION CLEARING AND TOP SOIL STRIPPING**

- 3.1 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.
- 3.2 The storage of topsoil (overburden) within **three meters (3m)** 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.
- 3.3 Practice alternative methods of vegetation clearing rather than burning, such as, manual or mechanical felling or bulldozing.
- 3.4 Ensure vegetative debris is incorporated and stored 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.
- 3.5 Store overburden stockpiles away from the drainage system at least **Two Hundred (200) meters** away from any water courses. Runoff from this overburden shall be directed to the sedimentation/settling pond for treatment before discharge.
- 3.6 Utilise Berms and garland drains to prevent loss of topsoil from surface runoff drainage.
- 3.7 Maintain the integrity of areas where riparian vegetation is located to aid in mitigating erosion/sedimentation impacts at the site.
- 3.8 Consider the weather pattern before initiating major earthworks. Monitor areas of exposed soil during periods of heavy rainfall.
- 3.9 Take necessary precautions to 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.

#### **4.0 DRILLING AND BLASTING**

- 4.1 Before blasting activities commence on the concession, submit a detailed **Drilling and Blasting Plan** that is approved by the Guyana Geology and Mines Commission (GGMC) **at least three (3) months** after issuance of this Permit.
- 4.2 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.
- 4.3 Employ a drilling and blasting supervisor, who is certified and licensed by the Guyana Geology and Mines Commission (GGMC).
- 4.4 Ensure the use, storage, transport, handling, and general management of explosives are 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.
- 4.5 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.
  - IV. Confinement of the charge.
- 4.6 Ensure secondary blasting is avoided as much as possible, rather, drop balling, using a heavy mass operated by a dragline shall be considered.
- 4.7 Ensure that a review of the blast design is undertaken where necessary including the size of the Maximum Instantaneous Charges (MICs) and detonating sequence and that the correct stemming is in place.
- 4.8 Ensure that all measures such as the use of deck charges are utilised to reduce ground vibrations.
- 4.9 Ensure that all sites are evacuated and guarded before shots are fired. A distinctive **audible warning signal** must be given before firing and at the all-clear. In addition, notify nearby communities and homesteads of blasting times.
- 4.10 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.

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- 4.11 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.
- 4.12 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 (NOx) events must be examined by a medical practitioner without delay, even if no NOx smell was noticed or symptoms are mild.

**5.0 CRUSHING PLANT**

- 5.1 Ensure that the crushing plant and ancillary equipment are operated in strict compliance with the manufacturer’s specifications.
- 5.2 Implement well-designed sprinklers located at strategic points to contain/reduce the level of fugitive dust being emitted into the environment.
- 5.3 The unloading area of crushers and conveyor belts are to be enclosed and provided with a dust suppression system.
- 5.4 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.

**6.0 ROADS**

- 6.1 Ensure that the running surface of the road is crowned with a compacted layer and with good drainage on both sides to catch and direct water to the local drainage system.
- 6.2 Ensure that adequate and appropriate road signage is installed 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.
- 6.3 Ensure that all reasonable and practical measures such as the provision of turnout drains at regular intervals are implemented to prevent erosion of roads. Runoff from roads, stockpile areas, etc., shall not be discharged directly to natural water ways such as the **Mazaruni and Turtruba Rivers, Creeks, and tributaries** within or contiguous to the Project site.
- 6.4 Ensure roads are sloped and constructed to minimise the likelihood of soil erosion.

- 6.5 Ensure that activities as they relate to operation and maintenance of roads, drainage ditches, culverts and or berms, etc. are done in a manner that results in minimal impact on public health and the environment.

## 7.0 WATER QUALITY MANAGEMENT

- 7.1 Adhere to the provisions of the **Environmental Protection (Water Quality) Regulations, 2000.**
- 7.2 Maintain the integrity of the existing waterways at all times. Discharges from sediment ponds or the operation into the ***Mazaruni and Turtruba Rivers and surrounding environment*** shall be in accordance with the Guyana National Bureau of Standards Interim *Guidelines for Industrial Effluent Discharge into the Environment* (IFC), US EPA and World Bank Water Quality Standards. The following maximum allowable limits shall 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)	<30 NTU	Bi- Annual
Total coliform	< count/100ml	Bi- Annual
N as NH <sub>3</sub>	<50mg/L	Bi- Annual
E. Coli	<0 count per 100 ml	Bi- Annual
Total Dissolved Solids (TDS)	<200 mg/L	Bi- Annual

- 7.3 Monitor the water quality for the parameters listed in above 7.2 above on a biannual basis, (once in the wet season and once in the dry season). Grab samples shall be obtained from the following sample points:
- Fifteen (15) meters** Upstream of all final discharge point(s) and at Mazaruni River (Upstream);
  - Small Creek (close to northern boundary of the QL);
  - Mouth of Barabara River;



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- d) Unnamed Creek (close to previous southern boundary of the QL);
  - e) **Fifteen (15) meters** Downstream of all final discharge point(s) and at Mazaruni River (Downstream);
  - f) Barabara River (in vicinity of the Falls); and
  - g) All final point(s) of discharge from the quarry into receiving waterbodies;
- 7.4 Direct all waste lines and drains carrying grease, fats, or culinary oil, or similar waste products from the kitchen area into one or more grease trap interceptors. All required grease trap interceptors shall comply with the following:
- Be constructed of durable, corrosion-resistant materials and have water-tight covers securely fastened in place.
  - Have a flow rate sufficient to handle the maximum demand of the connected system.
  - Be installed at strategic locations to allow accessibility for convenient removal of the lid and internal contents.
  - Be designed and installed with proper venting to avoid becoming air bound.
  - Be properly cleaned and maintained according to the manufacturer's recommended frequency.
- 7.5 Implement all necessary measures to reduce turbidity and the release of contaminants from re-suspension of sediments in the water column and from exposure of sediments to higher oxygen levels:
- Between your mining blocks and other different contiguous land-use activities;
  - Around the mine site; and
  - Around the property boundary.
- 7.6 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.
- 7.7 Implement all necessary measures to reduce turbidity and the release of contaminants from re-suspension of sediments in the water column and from exposure of sediments to higher oxygen levels.
- 7.8 Ensure erosion susceptible areas are sloped, benched or lined with erosion control structures to manage surface runoff.
- 7.9 Establish and maintain a vegetative **two hundred (200) meters** buffer zone between the rock deposit and the **Mazaruni and Turtruba Rivers or any**

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**other navigable water course/ Public Road** to reduce the risk to persons commuting this area.

- 7.10 Construct and maintain a good drainage system capable of handling the probable maximum precipitation storm event at all facilities. Storm water discharge shall be directed into appropriately designed sediment ponds before discharge into surrounding waterways or through a vegetated area prior to discharge.
- 7.11 Channel wastewater into Sediment ponds prior to discharge.
- 7.12 Construct and maintain the settling ponds at the project site. The pond must 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.
- 7.13 Silt fences shall be installed at discharge points of drainage systems to reduce the sediment loads entering sediment ponds.
- 7.14 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.
- 7.15 As far as possible, implement practical measures to prevent pollution of the **Mazaruni and Turtruba Rivers**. 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.
- 7.16 Install, operate and maintain oil/water separator(s) at maintenance and repair workshop, service bay and fuel storage and handling areas.
- 7.17 Monitor water levels in the dry season to control drawdown from critical streams and/or Rivers
- 7.18 As far as possible, re-use water from mine dewatering with the processing operation.
- 7.19 Conduct an assessment to determine the status of groundwater levels in the vicinity of the mining concession after commencement of Quarrying activities. The assessment shall present baseline information on water levels, flow and quality, amongst other groundwater parameters, for the continuous monitoring of groundwater within the concession.
- 7.20 Provide **within three (3) months of issuance of the Permit**, definite plans for installation of groundwater monitoring wells, stating proposed locations, justification of site selection, timelines for installation, methods that will be employed to prevent loss of the new wells, and a monitoring protocol for

groundwater. The plan should also include methods of drilling and borehole construction. Construction of the well must be done by qualified /licensed or experienced well drilling contractor(s).

- 7.21 Conduct continuous monitoring of Ore and Gangue material within mines to develop a trace metals characterization profile. pH levels should at all times be maintained to near neutral levels while undertaking all necessary work to control and manage acid mine drainage from the mining and settling pond.

## **8.0 HAZARDOUS MATERIAL/WASTE MANAGEMENT**

- 8.1 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.
- 8.2 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:
- (a) Danger- Chemical Storage Area "Authorized Personnel Only"
  - (b) Read and Follow all label directions
  - (c) No Smoking
  - (d) No Eating or Drinking
- 8.3 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:
- The name, location and type of facility.
  - Types and quantities (in metric units) of hazardous waste generated.
  - Manner of storage, use, any applied treatment standards/methods and disposal of these substances.
  - 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.
  - A summary of any accidents that may have occurred and any action taken.
  - Any waste minimization efforts undertaken by your facility for hazardous material/waste.
  - 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.)

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- 8.4 (a) Collect and store waste oils, used batteries, 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.
- 8.5 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.
- 8.6 Safety Data Sheets for all hazardous materials shall be readily available and easily accessible at all times at the Facility.
- 8.7 Take the necessary precautionary measures during the transport, transfer, use and handling of all hazardous material.
- 8.8 Implement a programme to ensure regular and preventative maintenance of machinery and equipment to prevent leaks and minimize air emissions and hydrocarbon releases.
- 8.9 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.
- 8.10 All hazardous waste shall be stored in a covered, banded area. This area shall include the following:
- (a) Signage- "Hazardous Waste Storage Area";
  - (b) Low traffic;
  - (c) No floor drains; and
  - (d) Secondary containment capable of containing 110% of the largest volume therein.
- 8.11 Do not service vehicles in mining pits except in instances of emergency repairs.
- 8.12 Maintain emergency spill cleanup kits on site for response to spills.
- 8.13 A fully stocked first-aid kit shall be readily available at the hazardous storage Facility.
- 8.14 Material storage containers shall be inspected weekly for signs of leakage or



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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.

- 8.15 Elevate all waste oil/ chemical tanks and containers so that leaks are easily identifiable.
- 8.16 Collect and store waste oils on site, until ready for disposal or reuse. It is an offence to drain fuel/lubricants including waste oils of any quantity from equipment onto the ground or water way.

## **9.0 FUEL HANDLING AND STORAGE**

- 9.1 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.
- 9.2 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. The containment wall MUST be fully sealed to prevent spillage into the receiving drainage system.
- 9.3 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.
- 9.4 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.
- 9.5 Ensure that adequate signage is installed in fuel storage areas, such as 'No Smoking', 'Flammable Materials', etc.
- 9.6 Protection measures for fuel storage tanks such as painting and coating shall be maintained to minimize corrosion of fuel tanks.
- 9.7 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 14.2**.
- 9.8 Secondary containment, drip trays or other overflow and drip containment

measures shall be installed and maintained at connection points or other possible overflow points.

- 9.9 Leak detection systems shall be installed on all fuel tanks. At least two (2) of the following measures shall be implemented:
- (a) Overflow alarms on tanks;
  - (b) Gauging system;
  - (c) Dipstick measurements;
  - (d) Sensors on walls of tanks; or
  - (e) Electric Shutdown Valve.

## **10.0 WASTE MANAGEMENT**

- 10.1 Adhere to the provisions of the **Environmental Protection (Litter Enforcement) Regulations, 2013**.
- 10.2 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.
- 10.3 Reduction, recycling and/or reuse of waste shall be promoted at all times.
- 10.4 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.
- 10.5 Maintain good house-keeping, sanitary and hygienic practices and the aesthetic quality of the surroundings at all times.
- 10.6 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. Used tyres and batteries shall be re-used or disposed of in a manner approved by the EPA.
- 10.7 Construct and maintain **new or existing** pit latrine(s) in accordance with the *Guyana Bureau of Standard (GNBS) Code of Practice for the Design and Construction of Ventilated Improved Pit Latrines*.
- 10.8 Construct and maintain a septic tank system at all times which shall be accessible for cleaning and de-sludging. 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*.

## 11.0 AIR QUALITY MANAGEMENT

- 11.1 Adhere to the provisions of the **Environmental Protection (Air Quality) Regulations, 2000**, and comply with the *World Health Organisation (WHO) Air Quality Guidelines for Particulate Matter in the Environment*, not exceeding the limits below:

Air Pollutant	Maximum Pollutant Level
PM <sub>2.5</sub>	10 µg/m <sup>3</sup> annual mean
	25 µg/m <sup>3</sup> 24-hour mean
PM <sub>10</sub>	20 µg/m <sup>3</sup> annual mean
	50 µg/m <sup>3</sup> 24-hour mean
Total Suspended Particles (TSP)	Primary 75 µg/m <sup>3</sup> annual geometric mean
	Primary 260 µg/m <sup>3</sup> 24-hour mean
	Secondary 60 µg/m <sup>3</sup> annual geometric mean
	Secondary 150 µg/m <sup>3</sup> 24-hour mean

- 11.2 Conduct monitoring for the parameters listed in **Condition 11.1** on an annual basis and submit results to the EPA as a component of the Environmental Annual Report required by **Condition 14.2**. Readings shall be obtained at, but not limited to, the following locations:

- I. Haul Roads;
- II. Overburden Stockpiles;
- III. Finished product stockpile;
- IV. Aggregate processing area;
- V. Crushing plant;
- VI. Ore Washing Facility and Settling Pond;
- VII. Water Treatment Plant;
- VIII. Quarry pit; and
- IX. Accommodation/Housing Area.

- 11.3 Comply with Air Quality Management Procedures as outlined in the Environmental Management Plan and monitor ambient air quality within the boundaries of the project to determine compliance with the requisite Standards as outlined in the Environmental Management Plan (EMP) section 4.1.8 Ambient Air Quality, table 4-6: Air Quality Assessment Locations and Other Details and submit in the Environmental Annual Report required by **Condition 14.2**.

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- 11.4 The Company shall submit and revise the approved Environmental Monitoring Protocol as outlined in the Monitoring Plan to reflect the changes in the contaminants to be monitored as well as the monitoring areas and submit to the Agency for approval within three (3) months of the issuance of the Permit.
- 11.5 Respond to equipment malfunction or **inefficiencies** which may result in visible air emissions. 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.
- 11.6 Establish and maintain the vegetative buffer zone of at least **one hundred (100) meters** between the Quarry and approved residences, commercial/industrial developments to buffer noise and fugitive dust emissions.
- 11.7 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.
- 11.8 Limit vehicle speeds on the internal roadways.
- 11.9 As far as possible, site and orient stockpiles and storage areas to reduce wind exposure.
- 11.10 Ensure that the exhaust stack of the generator is of an appropriate height, i.e. at least **two (2) meters** above the tallest building nearby, to minimise adverse fumes/soot impacts to contiguous areas.
- 11.11 Operate and service all mechanical equipment and vehicles in accordance with manufacturer's specifications at all times to minimise atmospheric emissions.

**12.0 NOISE MANAGEMENT**

- 12.1 Adhere to the provisions of the **Environmental Protection (Noise Management) Regulations, 2000**,
- 12.2 Comply with the Noise Management Procedures as outlined in the Environmental Management Plan dated June 14, 2021 and adhere to 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.



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

- 12.3 Conduct monitoring on a bi-annual basis to ensure that noise from the operation is within the limits specified in Condition 12.2 and in accordance with submit results to the EPA as a component of the Environmental Annual Report required by **Condition 14.2.**
- 12.4 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.)
- 12.5 Ensure that all equipment and machinery are placed on foundations properly designed to ensure effective damping of vibrations.

**13.0 BIODIVERSITY PROTECTION**

- 13.1 Identify and avoid sensitive ecological areas within your mining claim.
- 13.2 Undertake construction, including clearing of vegetation at a pace slow enough to ensure that terrestrial animals and aquatic life can move to other locations.
- 13.3 Avoid blasting/intense construction activities during sensitive biodiversity seasons of the year as advised by the Guyana Wildlife Conservation and Management Commission.
- 13.4 Establish vegetation around production facilities and along access roads to mitigate the impact on terrestrial resources.
- 13.5 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 14.2.**
- 13.6 Report all occurrences of illegal wildlife trapping and trading to the EPA and Wildlife Conservation and Management Commission Authority.
- 13.7 Communicate to employees through trainings, signage and other practicable means, 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.

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**14.0 COMPLIANCE MONITORING AND REPORTING**

- 14.1 Monitor the implementation of the conditions of this **Operation Permit (Renewed)**, insofar as they involve adherence by employees and all third parties under your direction.
- 14.2 Submit **Environmental Annual Reports** to the EPA on or before **March 31** every year on your compliance with this Permit.
- 14.3 Ensure the reports and records of monitoring include the following:
- The names of the individuals and designations, who conducted sampling, prepared and compiled the reports;
  - The date, place/location, time, weather conditions, techniques and methods used in sampling;
  - The date the measurements were compiled or analysed and the names of the individuals who compiled the information;
  - Observations, readings, calculations, benchmarks, bench data, the results of analyses;
  - Limitations of the sampling process and all other occurrence at the time of study, which may affect the results;
  - Photographs and drawings of all relevant aspects of the operation; and
  - The state of operation of facilities at the time of measurement, including planned and unplanned shutdowns, production levels and achievement of design capacity, identification of release point, source of release and substances being released.
- 14.4 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.
- 14.5 Inform the Agency prior to or within **thirty (30) days** of any change of name or ownership of the operation.
- 14.6 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.
- 14.7 Notify the EPA within **one (1) hour** 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.

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**14.8 Report to the Agency any non-compliance(s) with the Operation Permit (Renewed):**

- 14.8.1 Within **twenty-four (24) hours** of the time the Holder of the Operation Permit (Renewed) becomes aware of the non-compliance, the anticipated manner in which it may endanger human health or the environment.
- 14.8.2 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.
- 14.8.3 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.
- 14.9 Implement relevant measures/agreements to avoid conflicts with other land users/communities. Conflicts should be reported to the relevant authorities if they occur.
- 14.10 Inform the **National Trust and Walter Roth Museum** if any artefacts of archaeological and anthropological significance are unearthed during the Operation of the Stone Quarry.
- 14.11 Submit to the EPA the results of all periodic audits conducted by the GGMC.
- 14.12 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.
- 14.13 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.

**15.0 INSTITUTIONAL AUTHORITY/LIABILITIES**

- 15.1 The Permit Holder shall be strictly liable for any loss or damage to the environment through any act caused intentionally or recklessly, including the adverse effect of any discharge or release of contaminants in excess of the levels stipulated herein or the Regulations, or any activity which causes or is likely to cause pollution. Section 19(1) EP Act, Cap. 20:05, Laws of Guyana.
- 15.2 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.

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- 15.3 The Permit Holder shall strictly observe section 19(3) of the Environmental Protection Act Cap 20:05, Laws of Guyana.
- 15.4 The Permit Holder may be liable for environmental damage due to pollution from its activities within Guyana.
- 15.5 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.
- 15.6 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 Holder be liable to penalties prescribed under paragraph (c) of the Fifth Schedule for doing so.
- 15.7 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.
- 15.8 The EPA shall have the right to cancel or suspend this Permit for breach of any of the terms and conditions contained herein.
- 15.9 This Operation Permit (Renewed) is not the final consent; all relevant permission shall be obtained from other regulatory bodies for continued operation and maintained thereafter.
- 15.10 The Permit Holder shall compensate any Party who suffers any loss of damage as a result of the attributed project. (Section 19(3)(e) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.)
- 15.11 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).
- 15.12 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.
- 15.13 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



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accordance with section 26 of the Environmental Protection Act, Cap.20:05, Laws of Guyana.


- 15.14 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 Section 27 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 15.15 Where the Permit Holder in accordance with Section 19(3) of the Environmental Protection Act, is found liable for the release or discharge of any contaminant or for the process involving the contaminant, the Permit Holder shall:
- I. Immediately notify the Agency of the discharge;
  - II. Concentration and amount of contaminant;
  - III. Circumstances of the discharge; and
  - 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.
- 15.16 The Permit Holder shall be liable for 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, discharge or spill of contaminant fluids, oil or lubricants from any facilities permitted under this project.
- 15.17 This Operation Permit (Renewed) is effective for the period stipulated herein **August, 2021 to July, 2026.**
- 15.18 This Operation Permit (Renewed) shall remain valid until **July 31, 2026** 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.
- 15.19 This Operation Permit (Renewed) 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 **January 31, 2026.**
- 15.20 Any late submission of renewal application(s) after the specified date as stated above, the Agency may require 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**

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**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.

- 15.21 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.

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

Date: 4.8.21

**I hereby accept the above terms and conditions upon which this Operation Permit (Renewed) 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:	TAMESH TAGMOHAN
SIGNATURE:	
DESIGNATION:	DIRECTOR .
DATE:	AUGUST 5 <sup>th</sup> 2021

