



**Environmental  
Protection  
Agency**

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## **Environmental 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.

<b>Reference No.:</b>	<b>20210922-EQLSH</b>
<b>Fee:</b>	<b>Large (C2) – US\$2000 per year</b>
<b>Fee Paid:</b>	<b>US \$ 2,000 (February, 2023 to January, 2028)- Five (5) year</b>
<b>Addressee:</b>	<b>Messer. Sewsankar and Deonarine Sahadeo Essequibo Quarry Inc. 115, De Williams West Coast Demerara.</b>
<b>Activity:</b>	<b>Construction and Operation of a Stone Quarry with Processing</b>

Messer. Sewsankar and Deonarine Sahadeo, trading and operating under the name Essequibo Quarry 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 and operate a Stone Quarry located at Block H-1040/MP/000/2020, Confluence of the Essequibo River and Hurikabra Creek, Region No. 07, hereinafter referred to as the “Project”, in the manner indicated in the Application for Environmental Authorisation submitted on September 22, 2021, 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, codes of practices and standards relevant to this project.

This is a Renewal of the Environmental Permit, Reference # 20210922-EQLSH, issued on May 13, 2022 and expired on January 31, 2022. This

**Environmental Permit (Renewed) is issued pursuant to the Environmental Protection (Authorisations) Regulations, 2000.**

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

**1.0 GENERAL**

- 1.1 Adhere to the Environmental Assessment Management Plan (EAMP) and the Institutional Requirements for the Management Plan including *inter alia* **Social Management, Fuel Oil Management, Waste Management, Hazardous Material Management, Water management Plan, Biodiversity Action Plan, Explosive Management, Soil Management, Overburden Management and Erosion and Sediment Control Plan, Closure Plan and Emergency Response Plan**, as detailed in the Environmental Management Plan submitted on November 08, 2022.
- 1.2 Make an application to the Agency to vary this 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
  - iv. effect any other change outlined in Regulation 20(3) of the Environmental Protection (Authorisations) Regulations.
- 1.3 Ensure all mining activities are conducted within the boundaries more fully described in the 'Notice of Intention to Grant Quarry Licence', bearing the reference number GS23: H-1040/MP/000/2020, located at the Confluence of the Essequibo River and Hurikabra Creek, issued by the Guyana Geology and Mines Commission (GGMC) and published in the Official Gazette of Guyana dated **July 31, 2021**.
- 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; while maintaining demarcated

boundary limits for the Mine Site and a non-extractable, vegetated buffer zone at least **one hundred and fifty (150) meters** wide as follows:

- a. Between your mining blocks and other different contiguous land-use activities;
  - b. Around the mine site;
  - c. Around the property boundary; and
  - d. Around any water source/spring located on the property.
- 1.5 Ensure proper signage and security measures are in place to keep unauthorised persons from accessing restricted and high-risk areas are maintained at all times.
- 1.6 Any other developmental activity(ies) 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.
- 1.7 Adhere to the provisions of 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.**

## **2.0 CONSTRUCTION AND INFRASTRUCTURE**

- 2.1 Ensure that all materials stored in tiers are stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.
- 2.2 Ensure the control of all electrical installations, removal, repairs, or modifications on the construction site is designated to a certified and competent electrician at all times and is authorized in writing by the Company.
- 2.3 Ensure that all construction vehicles and mobile plants are:
- 2.3.1 Always maintained in a good working order;
  - 2.3.2 Used in accordance with their design and the intentions for which they were designed;
  - 2.3.3 Are operated by a person who has received appropriate training, is certified and in possession of proof of competency and is authorized in writing to operate that equipment; and
  - 2.3.4 Are inspected by the authorized operator or driver on a daily basis using a relevant checklist prior to use and the findings of such

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inspection are recorded in a register which should be available upon request by Officers.

- 2.4 Utilise the land in accordance with the plan submitted to the Agency. All specifications of location, pathways, reserve and boundary lines must be adhered to, unless otherwise authorised.
- 2.5 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, Hurikabra Creek and other receiving waters.
- 2.6 Ensure that all the surface drains are free - flowing and does not contain construction waste and vegetation. Regular cleaning of the drainage network and the immediate environment must be carried-out at all times.
- 2.7 Take necessary precautions to avoid erosion, siltation and sedimentation of the Essequibo River, Hurikabra Creek and any other waterways within and around the vicinity of the project site during both the construction and operation for the Quarry Site, Wharf and other supporting infrastructures.
- 2.8 Identify suitable areas for material stockpile and equipment during construction.
- 2.9 Protect susceptible sloped surfaces with suitable revetment and appropriate cover to ensure stability of slopes and avoid erosion.
- 2.10 Avoid soil and water contamination from fuel, grease, waste oils and other petroleum products. Store all oils, fuel, paints and chemicals in a designated area, away from watercourses.
- 2.11 Ensure that the River's Bank is cleared of debris on a regular basis to promote free flow of water.
- 2.12 Adequately store and/or 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, Hurikabra Creek or other water bodies.
- 2.13 Completely cover or enclose all construction material in a manner that prevents the material from blowing, dropping, sifting, leaking, or otherwise escaping from the vehicle.
- 2.14 Ensure stockpiles of construction material are stored downwind to avoid being transported by wind to sensitive areas (e.g., residences, schools, hospitals etc.).

Loading and offloading activities should, as far as possible, also be confined to this location.

### **3.0 WHARF**

- 3.1 Ensure that all construction, operation and dredging works at the project site are conducted in accordance with the requirements stipulated by approvals/no-objections issued by Maritime Administration Department (MARAD) and the Sea and River Defence Authority, Ministry of Public Infrastructure and the Drainage & Irrigation Laws of Guyana.
- 3.2 Avoid any river or road traffic hazards or unnecessary inconveniences to the general public through appropriate planning and management of the construction and operation sites.
- 3.3 Ensure that the transportation of quarriable materials by tugs and/or barges to and from the project site does not encumber traffic on the Essequibo River, and is done in accordance with the requirements of the Maritime Administration Department (MARAD).
- 3.4 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.
- 3.5 Ensure that all construction, dredging and maintenance are safely conducted to prevent the negative impacts on aquatic habitats and benthic organisms, human health and/or the environment, including the treatment, disposal and management of associated dredged materials.
- 3.6 Appropriate methods for excavation and dredging must be selected to minimise the suspension of sediments in the Essequibo River.
- 3.7 Disposal of excavated and dredged materials into the Essequibo River is strictly **prohibited**.
- 3.8 Ensure the construction of the wharf and dredging is done to coincide with low flow periods of the Essequibo River.
- 3.9 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.

#### **4.0 EMPLOYEES, OCCUPATIONAL HEALTH AND SAFETY**

- 4.1 Adhere to the requirements of **the Occupational Safety and Health Act, Cap. 99:01, Laws of Guyana.**
- 4.2 During the course of construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.
- 4.3 Ensure that in every building or structure, exits are arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure, at all times, when it is occupied. No lock or fastening to prevent free escape from the inside of any building shall be installed.
- 4.4 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.
- 4.5 Ensure all enclosed workplaces are constructed, equipped, and maintained, as far as reasonably practicable, to prevent the entrance or harborage of rodents, insects, and other vermin. A continuing and effective extermination program shall be instituted where their presence is detected.
- 4.6 Practice the use of caution signs to warn against potential hazards or to caution against unsafe practices.
- 4.7 Use accident prevention tags as a temporary means of warning employees of an existing hazard, such as defective tools, equipment, etc. such tags shall not be used in place of, or as a substitute for, accident prevention signs.
- 4.8 Protect employees from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.
- 4.9 Employ a Health, Safety and Environmental Officer (s) or qualified person (s) who would be responsible for the implementation of the Company's Environmental Assessment and Management Plan (EAMP) and the terms and conditions of this Environmental Permit and any other policy document that would be developed and implemented by your establishment.
- 4.10 Provide Employees with training on: good environmental management practices; occupational health and safety; and their obligations under this Permit

on a regular basis.

- 4.11 Prepare and maintain a training file for all employees and third-party contractors, which shall be available upon Officers' request and submitted with the Annual Report to the EPA.
- 4.12 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:
- a. Safety helmets;
  - b. Protective respiratory devices
  - c. Safety boots with ankle support;
  - d. Gloves with reinforced palms and fingers; and
  - e. Tightly fitted safety goggles.
- 4.13 Prepare and maintain an employee log of distribution of Personal Protective Equipment (PPE).
- 4.14 Provide well-equipped first aid and snake bite kits at the work site.
- 4.15 Ensure that communication and transportation systems are in place to respond to emergencies.
- 4.16 Ensure that proper prophylactic or other acceptable medical measures are implemented to protect workers and other persons from malaria and other harmful diseases at the project site.
- 4.17 Provide and maintain adequate fire protection measures, in accordance with guidelines established by the Guyana Fire Service.
- 5.0 VEGETATION CLEARING AND TOP SOIL STRIPPING**
- 5.1 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.
- 5.2 The 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.
- 5.0 Practice alternative methods of vegetation clearing rather than burning, such as,

manual or mechanical felling or bulldozing.

- 5.1 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.
- 5.2 Store overburden stockpiles away from the drainage system and 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.
- 5.3 Maintain the integrity of areas where riparian vegetation is located to aid in mitigating erosion/sedimentation impacts at the site.
- 5.4 Consider the weather pattern before initiating major earthworks. Monitor areas of exposed soil during periods of heavy rainfall.
- 5.5 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.

## **6.0 DRILLING AND BLASTING**

- 6.1 Before blasting activities can 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.
- 6.2 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.
- 6.3 Employ a drilling and blasting supervisor, who is certified and licensed by the Guyana Geology and Mines Commission (GGMC).
- 6.4 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.



- 6.5 Ensure the appropriate blast design parameters are in place prior to the actual blasting. Attain minimum ground vibration by the utilization of:
  - a. Appropriate delay intervals for charge ignition.
  - b. Appropriate pattern.
  - c. Orientation of blast holes.
  - d. Confinement of the charge.
- 6.6 Avoid secondary blasting as much as possible, rather, drop balling, using a heavy mass operated by a dragline shall be considered.
- 6.7 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.
- 6.8 Ensure that all measures such as the use of deck charges are utilised to reduce ground vibrations.
- 6.9 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.
- 6.10 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.
- 6.11 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.
- 6.12 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.

## **7.0 CRUSHING PLANT**

- 7.1 Ensure that the crushing plant and ancillary equipment are operated in strict compliance with the manufacturer's specifications.
- 7.2 Implement well-designed sprinklers located at strategic points to contain/reduce the level of fugitive dust being emitted into the environment.
- 7.3 The unloading area of crushers and conveyor belts are to be enclosed and provided with a dust suppression system.
- 7.4 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.

## **8.0 ROADS**

- 8.1 Fill in ruts and holes that develop during road/trail use with suitable materials such as compacted fill and crush and run etc., and ensure roads are sloped to minimise the likelihood of soil erosion.
- 8.2 Where the land surface has been disturbed during/after construction, the Permit Holder shall reclaim/rehabilitate the surface of unused land to equivalent capability.
- 8.3 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.
- 8.4 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.
- 8.5 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 **Essequibo River, Hurikabra Creek, Seribikabro Creek, and/ or other tributaries** within or contiguous to the Project site.
- 8.6 Ensure roads are sloped and constructed to minimise the likelihood of soil erosion.

8.7 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.

**9.0 WATER QUALITY MANAGEMENT**

9.1 Adhere to the provisions of the **Environmental Protection (Water Quality) Regulations, 2000.**

9.2 Develop and submit a sampling/monitoring regime for water quality parameter at the Project Site. The sampling/monitoring regime should clearly identify the locations where samples should be collected and the frequency of sampling within the Project Site.

9.3 Maintain the integrity of the existing waterways at all times. Discharges from sediment ponds or the operation into the Hurikabra Creek, Seribikabro Creek, Essequibo River 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

9.4 Monitor the water quality for the parameters listed in 7.2 above on a biannual

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basis, (once in the wet season and once in the dry season). Grab samples shall be obtained from the following sample points:

- a) At all point(s) of discharge from the quarry into receiving water bodies;
  - b) **Fifteen (15) meters** Upstream of each discharge point; and
  - c) **Fifteen (15) meters** Downstream of each discharge point.
- 9.5 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.
- 9.6 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:
- a) Be constructed of durable, corrosion-resistant materials and have water-tight covers securely fastened in place.
  - b) Have a flow rate sufficient to handle the maximum demand of the connected system.
  - c) Be installed at strategic locations to allow accessibility for convenient removal of the lid and internal contents.
  - d) Be designed and installed with proper venting to avoid becoming air bound.
  - e) Be properly cleaned and maintained according to the manufacturer's recommended frequency.
- 9.7 Ensure that the all water leaving the temporary-on site live-in facilities is directed to the oil - water separator before being released into the main water body at the site.
- 9.8 Avoid soil and water contamination from fuel, grease, waste oils and other petroleum products that might be used at the Construction Site. Ensure to store all oils, fuel, paints and chemicals in a designated area, away from all watercourses and drainage channels.
- 9.9 Conduct equipment refueling, maintenance and placement on an impervious base to prevent fuel spills/leaks. Oil spills should be cleaned-up by the best practicable means, to prevent runoff into any watercourse within the project's

area of influence.

- 9.10 Surface runoff from vehicle service areas should be channelled to oil-water separators. All water from the oil-water separators should be skimmed prior to discharge.
- 9.11 Limit the removal of vegetation to the extent necessary for works to proceed. In areas where soils are not to be removed, the grassed vegetation layer shall be maintained, where possible, to protect the soil from erosion and compaction.
- 9.12 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.
- 9.13 Ensure erosion susceptible areas are sloped, benched or lined with erosion control structures to manage surface water runoff.
- 9.14 Establish and maintain a vegetative **two hundred (200) meters** buffer zone between the rock deposit and surrounding waterways (Hurikabra Creek, Seribikabro Creek) to reduce erosion.
- 9.15 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.
- 9.16 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.
- 9.17 Silt fences shall be installed at discharge points of drainage systems to reduce the sediment loads entering sediment ponds.
- 9.18 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.
- 9.19 As far as possible, implement practical measures to prevent pollution of the **Hurikabra Creek and the Seribikabro Creek**. Domestic waste water shall

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not be discharged directly into watercourses. Install a filter treatment system at the domestic water discharge point for further treatment before discharge.

- 9.20 Install, operate and maintain oil/water separator(s) at repair workshop and fuel storage and handling areas.
- 9.21 Conduct an assessment to determine the status of groundwater levels in the vicinity of the mining concession **within the first year** after commencement of the 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.

### **3.0 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 (May and November)**, 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:
- a. The name, location and type of facility.
  - b. Types and quantities (in metric units) of hazardous waste generated.
  - c. Manner of storage, use, any applied treatment standards/methods and disposal of these substances.
  - d. 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.

- e. A summary of any accidents that may have occurred and any action taken.
- f. Any waste minimization efforts undertaken by your facility for hazardous material/waste.
- g. 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.)

- 8.4 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.
- 8.5 Refrain from draining fuel/lubricants, including waste oils of any quantity from equipment on to the ground and waterways.
- 8.6 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.
- 8.7 Safety Data Sheets for all hazardous materials shall be readily available and easily accessible at all times at the Facility.
- 8.8 Take the necessary precautionary measures during the transport, transfer, use and handling of all hazardous material.
- 8.9 Implement a programme to ensure regular and preventative maintenance of machinery and equipment to prevent leaks and minimize air emissions and hydrocarbon releases.
- 8.10 All hazardous waste shall be stored in a covered, bunded 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.

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- 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 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.

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- 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.***
- 10.9 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.*
- 10.10 Install, operate and maintain grease trap interceptors in all cooking and food preparation areas to trap oils, fats and wax present in waste water.
- 10.11 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.

#### **11.0 AIR QUALITY MANAGEMENT**

- 11.1 Develop and submit a sampling/monitoring regime for air quality parameter at the Project Site. The sampling/monitoring regime should clearly identify the locations where samples should be collected and the frequency of sampling within the Project Site.
- 11.2 Adhere to the provisions of the **Environmental Protection (Air Quality) Regulations, 2000** and the *World Health Organisation (WHO) Air Quality Guidelines for Particulate Matter in the Environment*, not exceeding the limits

below:

<b>Air Pollutant</b>	<b>Maximum Pollutant Level</b>
<b>PM<sub>2.5</sub></b>	10 µg/m <sup>3</sup> annual mean
	25 µg/m <sup>3</sup> 24-hour mean
<b>PM<sub>10</sub></b>	20 µg/m <sup>3</sup> annual mean
	50 µg/m <sup>3</sup> 24-hour mean
<b>Total Suspended Particles (TSP)</b>	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

- 11.3 Ensure that the release of fumes from generators to neighbouring residents is minimised / avoided by outfitting the generator with an exhaust stack of an appropriate height, preferably at least 2 metres above the tallest building nearby.
- 11.4 Locate all emission sources (dust and fumes) in a manner to reduce impact on neighbouring residents and sensitive environmental receptors.
- 11.5 Establish and maintain a vegetative buffer onsite to aid with the attenuation of fugitive noise and dust and to improve the aesthetic quality of the surroundings.
- 11.6 Maintain stakeholder engagement throughout the project's life. At all times inform residents of the timing and duration of the construction activities.
- 11.7 Employ dust suppression methods such as watering, erecting dust screens/fences etc. to control dust emissions from material stockpiles and other components of the development that would generate dust.
- 11.8 Ensure that appropriate measures are in place to minimise the impacts of air borne emissions from vehicles offloading and/or loading building materials.
- 11.9 Establish a maximum speed limit or install traffic calming devices to reduce speeds to a rate that prevents off-property transport of dust entrained by vehicles.
- 11.10 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:

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- a. Haul Roads;
  - b. Overburden Stockpiles;
  - c. Finished product stockpile;
  - d. Aggregate processing area;
  - e. Quarry pit; and
  - f. Housing Area.
- 11.11 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.
- 11.12 Establish and maintain the vegetative buffer zone of at least **one hundred and fifty (150) meters** between the Quarry and other contiguous land uses to buffer noise and fugitive dust emissions.
- 11.13 Install enclosures and dust suppression systems on the mobile and fixed crushing plant, screening plant and other equipment.
- 11.14 Ensure that external conveyors to/from the plant are affixed with covers.
- 11.15 Limit vehicle speeds on the internal roadways.
- 11.16 As far as possible, site and orient stockpiles and storage areas to reduce wind exposure.
- 11.17 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.
- 11.18 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 *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 **100dB** (Day-time (06:00-18:00 h))  
**80 dB** (Night –time (18:00-06:00 h))

Construction Limits: **90 dB** during the daytime (06:00 h - 18:00 h)  
**75 dB** during the night-time (18:00 h - 06:00 h)

12.3 Conduct monitoring on a weekly basis to ensure that noise from the operation is within the limits specified in Condition 12.2 and submit results to the EPA as a component of the Environmental Annual Report required by **Condition 15.2.**

12.4 Implement all possible measures to mitigate adverse noise impacts from generator (s) or heavy machinery on the surrounding environment. Silencers, mufflers, enclosures or other appropriate sound attenuation measures/devices should be used.

12.5 Ensure to operate and service all mechanical equipment in accordance with manufacturer's recommendations to minimise the impact of sound levels on the environment at all times.

12.6 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.)

12.7 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.

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- 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.
- 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 applicable forthcoming Regulations made under that Act.

**14.0 COMPLIANCE MONITORING AND REPORTING**

- 14.1 Monitor the implementation of the conditions of this **Environmental Permit**, insofar as they involve adherence by employees and all third parties under your direction.
- 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:
  - a) The names of the individuals and designations, who conducted sampling, prepared and compiled the reports;
  - b) The date, place/location, time, weather conditions, techniques and methods used in sampling;
  - c) The date the measurements were compiled or analysed and the names of the individuals who compiled the information;
  - d) Observations, readings, calculations, benchmarks, bench data, the results of analyses;

- e) Limitations of the sampling process and all other occurrence at the time of study, which may affect the results;
  - f) Photographs and drawings of all relevant aspects of the operation; and
  - g) 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 **sixty (60) 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.
- 14.8 Report to the Agency any non-compliance(s) with the **Environmental Permit (Renewed)**:
- 14.8.1 Notify the EPA within **one (1) hour** of any accidental release of contaminants or incident of pollution into the environment.
  - 14.8.2 Within **twenty-four (24) hours** of the time the Holder of the Environmental Permit (Renewed) becomes aware of the non-compliance or accidental release of contaminants or pollution, the anticipated manner in which it may endanger human health or the environment.
  - 14.8.3 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.

- 14.8.4 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 Essequibo Stone Quarry operations.
- 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 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 not contravene the provisions of Section 39 (1), (2), (3) and (4) of the Environmental Protection Act Cap 20:05, Laws of Guyana.
- 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.



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- 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, Her 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 Environmental Permit Renewed and Varied) 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 be responsible for the payment of all cost related to the assessment of damage and costs for the independent assessor(s).
- 15.11 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.
- 15.12 Should the Permit Holder contravene or is likely to contravene any condition of this Permit, the Agency (EPA) may serve on her an enforcement notice in accordance with section 26 of the Environmental Protection Act, Cap.20:05, Laws of Guyana.
- 15.13 Where it appears to the Agency (EPA) that the Permit Holder is engaged in any



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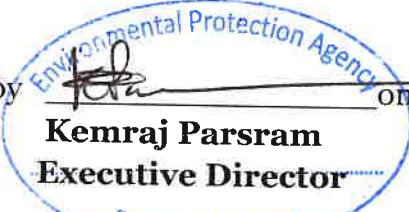
activity that may pose serious threat to natural resources or serious pollution of the environment or any damage to public health, the Permit Holder shall be issued with a Prohibition Notice Order to immediately cease the offending activity in accordance with Section 27 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.

- 15.14 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:
- a) Immediately notify the Agency of the discharge;
  - b) Concentration and amount of contaminant;
  - c) Circumstances of the discharge; and
  - d) What action he/she has taken or intends to take to restore the natural environment; and
  - e) Be liable to pay for the cost of an independent investigation into the discharge.
- 15.15 The Permit Holder shall be liable for any gross negligence or willful misconduct caused by the Permit Holder, her 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.
- 15.16 This Environmental Permit (Renewed) is effective for the period stipulated herein **February, 2023 to January, 2028.**
- 15.17 This Environmental Permit (Renewed) shall remain valid until **January 31, 2028**, 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.
- 15.18 This Environmental 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 **July 31, 2027.**
- 15.19 Any late submission of renewal application(s) after the specified date as stated above, may require the Permit Holder to pay, in addition to the renewal fee, a late

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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.

15.20 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 and its regulations, 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**

Date: 7.2.2023

**I hereby accept the above terms and conditions upon which this Environmental 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 existing or forthcoming regulations, best practices, guidelines and standards made under this Act.**

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<b>NAME:</b>	SIEWSANKAR
<b>SIGNATURE:</b>	<i>Sewsankar</i>
<b>DESIGNATION:</b>	Director
<b>DATE:</b>	February 11, 2023

<b>NAME:</b>	
<b>SIGNATURE:</b>	
<b>DESIGNATION:</b>	
<b>DATE:</b>	

