

## Environmental Impacts Screening Decision

**Project Name:** Flake Ice Depot

**Type of Operation:** Industry & Manufacturing (Ice Factory)

**Location of Project:** Lot 7 B, Sheet Anchor Village, East Canje, Berbice

### Project Description

Flake Ice Depot is an ice factory project that mainly involves the use of filtered water which is sourced from Guyana Water Inc. to produce flake ice for sale. The facility is existing and no further construction work is required or planned. The facility was constructed on a concrete foundation. There is a shed enclosed with ice-making machinery and a power generator (65 kVA), which is the main source of energy since the Guyana Power and Light (GPL) does not provide its services in the area.

With regards to the immediate environs, residents are located on the Northern, Southern, and Eastern sides of the facility while the Canje River (Canje Creek) is located on the Western side of the facility. Notably, the area surrounding the project location was observed to be sparsely populated. The facility can be easily accessed from Mc Garrel Street (Sawmill dam), Sheet Anchor, East Canje, Berbice.



**Figure 1. Map showing the location of the facility and its surroundings.**

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The ice factory has a commercial flake ice machine which is connected to the water tank and attached to a filter system. A pump is then used to push the water into the ice machine via PVC pipes. The water in the machine is then condensed to make the ice via the condenser. A blade then scraps the ice off the barrel at the top/ ceiling of the facility. The ice then falls onto the ground where it is collected to be sold. The ice at the factory is generated at a rate of approximately 200 lbs per hr or 2 tonnes per 24 hrs.

The facility would normally operate between 8:00 hrs to 16:00 hrs and would only operate for approximately 4-5 hrs maximum on any given day. *The facility does not operate at night (beyond 18:00 hrs).* The working days would vary depending on the orders received for the ice. There are currently no employees at the facility but the developer is considering employing someone in the future.

## Key Considerations

1. The project is located in a residential area with a few commercial activities such as sawmills and sand storage and retailing.
2. The facility is established and operational. The primary concern for the operation of the facility is the potential for noise nuisance. A complaint was lodged against the facility which resulted in a request for an application for environmental authorisation to be submitted. However, the recent noise assessment revealed that the average recorded value was below the GNBS day-time limit for residential areas. Also, through the permitting process, the developer would be required to adhere to the conditions stipulated in the Noise Management section of the Environmental Permit to be issued.
3. The main source of energy is a power generator (65 kVA) since the Guyana Power and Light (GPL) does not provide the 3-phase electricity needed to power the equipment.

## Environmental Impact Screening

The EPA's screening concludes that there are no identifiable significant environmental impacts likely to be generated from this project considering the location, scale, and duration of the operation. The impacts arising during the operational phase are considered to be minor, localised, and mitigable thus no further environmental studies

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such as an Environmental Impact Assessment (EIA) or Environmental Management Plan (EMP) will be required.

1. While there is a potential for noise and vibration within the immediate project environment due to the use of the power generator, ice machine, and condenser; a noise assessment was conducted and the average value recorded was 60.4 dB. This is within the GNBS day-time limit of 75 dB according to the GNBS Guidelines for Noise Emission into the Environment for Residential areas and the Ice Factory does not operate at night. The developer will also be constructing a concrete foundation to support the generator which will aid in eliminating/limiting vibrations to the project site only. Therefore, this project will not result in any adverse effects as it relates to noise and vibration.
2. Emissions from a diesel generator are a mixture of gases primarily comprising of Carbon Monoxide (CO), Oxides of Nitrogen (Nox), unburned Hydrocarbons (HC), and soot particles (particulate matter or PM). The table below highlights the US EPA standards and the average emission levels for a Tier 4 diesel power generator of the size/capacity that is used by this operation.

| <b>Type of Emission</b> | <b>US EPA Exhaust Emission Standards<sup>1</sup> (g/kW-hr)</b> | <b>Average Emission Levels<sup>2</sup> (g/kW-hr)</b> |
|-------------------------|--|--|
| <b>CO</b>               | 5  | 0.299  |
| <b>Nox +HC</b>          | 3.49   | 0.16   |
| <b>PM</b>               | 0.02   | 0.009  |

Tier 4 diesel generators are equipped with technologies to assist in compliance with the air emissions standards set out by the US EPA. Some of these technologies include a diesel particulate filter to reduce particulate matter, a selective catalytic reduction system to reduce NOx emissions, and diesel oxidation catalysts to reduce CO emissions through oxidation. Thus, the use of the generator will not have any significant impact on air quality. Additionally, the developer

<sup>1</sup> US EPA (2016), Nonroad Compression-Ignition Engines: Exhaust Emission Standards, see: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1000A05.pdf>

<sup>2</sup> Aggreko 2023, 60 kw tier 4F Generator, see: <https://www.aggreko.com/enus/products/generator-rental/generators/diesel-generators/tier-4f-generator-60-kw>

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shall regularly service the generator in accordance with the manufacturer's specifications to operate the equipment at optimal levels at all times and have the exhaust stalk extend two (2) metres above the tallest nearby building.

3. There will be no effluent discharge considering the nature of the project. The servicing of the generator will be conducted within a contained space to capture any hazardous waste/material spilled and wash-down water will pass through an oil-water separator before final discharge.

## Conclusion and recommendations

It can be concluded that there are no significant impacts from the project that is outside the scope of limited to no intervention by the developer. Therefore, no further environmental studies such as an Environmental Impact Assessment (EIA) or Environmental Management Plan (EMP) are required. The implementation of the best applicable environmental management practices will be required. These will become enforceable upon the issuance of an Environmental Authorisation for the project.

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