

FACILITY PROFILE
MCCAIN FOODS LIMITED
GRAND FALLS FROZEN FOOD PLANT

Prepared by:
Authorizations Branch
Department of Environment and Local Government
February 2022

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BACKGROUND

McCain Foods Limited operates a frozen food processing plant on Route 108, in St. Andre, New Brunswick. This plant has been in operation, originally as a French fry production plant, at the existing location since 1971. Cold storage was added to the Facility in 1973 and a processing line expansion was undertaken in 2020.

As required under the *Air Quality Regulation – Clean Air Act*, the McCain Foods Grand Falls Frozen food plant is considered a source and therefore, must apply for an Air Quality Approval to Operate from the New Brunswick Department of Environment. The facility is required to conduct its operations according to conditions outlined in the Air Quality Approval aimed at preventing unfavorable air quality conditions. Conditions of approvals can be wide-ranging and may, in some cases, include requirements such as:

- limitations on operational parameters;
- requirements for testing and monitoring of emissions from specific unit operations;
- requirements for testing and monitoring of the ambient air quality surrounding the facility;
- requirements to operate air pollution control equipment;
- limits on emissions that are approved to be released to the atmosphere;
- provisions for equipment upgrade and/or maintenance;
- requirements for environmental emergency and/or compliance reporting; and
- other conditions aimed at minimizing the facility's impact on the environment.

The Regulation provides for approvals to be issued by the Minister of Environment for a specified period, not to exceed five years.

The McCain Foods Limited, Grand Falls Frozen Food Plant's Approval to Operate (identified as I-9677) issued under the *Air Quality Regulation* expires on August 15, 2022. The Facility's emissions are such that the Facility is considered to be a Class 1B source under the *Air Quality Regulation*, therefore, a public review process for the renewal of its approval is required under the *Clean Air Act*.

This document is intended to provide: background information on McCain Foods Limited, Grand Falls Frozen Food Plant and the Air Quality Approvals process; a description of the McCain Foods Limited, Grand Falls Frozen Food Plant's process; a list of the potential air quality impacts associated with the facility; and a review of the Facility's compliance with its existing Air Quality Approval to Operate.

PRODUCTION PROCESS DESCRIPTION

The McCain Foods Limited, Grand Falls frozen food plant consists of several process lines. Each production line is described briefly below:

French Fry Production

The French Fry Production consists of raw potatoes being received and sorted upon arrival at the facility. The potatoes are steam-peeled in pressure vessels, inspected, cut into French fry strips, blanched, dried, fried, frozen, and packaged, then stored in a cold storage warehouse before being shipped to the customer. The potato bits and slivers from the French fry process are used to make potato specialty products at the site, e.g. potato hash browns.

Specialty Potato Production

The original Specialty Potato products line utilizes undersized potatoes and acceptable cuttings from the French fry line. These potatoes are directed to the specialty products line where the potato material is blanched and chopped to form a thick potato mash, which is formed or extruded into different shapes. These potato shapes are then fried, frozen and packaged for off-site shipment.

A new Specialty Potato processing line (SL4) was commissioned and put in operation in July 2021. This new line processes raw potatoes received at the facility, which are steam-peeled in pressure vessels, chopped, blanched, dried, mashed, formed and extruded into different shapes, fried, frozen, and packaged for off-site shipment.

POTENTIAL AIR QUALITY IMPACTS

Potential air quality impacts from facility emissions at McCain Foods (Canada), Grand Falls Plant are related primarily to emissions from the facility's steam plant and wastewater treatment flare stack.

Steam Plant - Boiler Operations

The Grand Falls facility requires steam for food manufacturing and auxiliary processes (i.e. building heat). There are three boilers existing at the facility and are used to generate steam for the manufacturing process. The boilers are approved and configured to burn No. 2 fuel oil and natural gas, to produce steam for various process units.

Boiler Name and Model	Design Heat Input
Boiler #1 – Foster Wheeler Boiler	19.12 million KJ / hr
Boiler #2 – Cleaver Brooks Boiler	22.61 million KJ / hr
Boiler #3 – Foster Wheeler Boiler	19.12 million KJ / hr

The Boilers are approved to burn No. 6 Fuel oil; however, the facility ceased burning heavy fuel in 2013 for environmental performance improvement reasons. For future considerations, the Boilers are also approved to burn biogas and self-generated used oil and/or waste French fry cooking oil.

The emissions are released from the three boilers through one common exhaust stack with an overall height of 28.0 m above grade. The air emissions resulting from boiler operations consist of sulphur dioxide, nitrogen oxides, carbon monoxide and particulate matter.

An Air Quality Dispersion Modeling Report completed in January 2004 demonstrated that the predicted ground-level concentrations of these four potential air quality contaminants generated from the boilers were below their respective regulatory standards for all averaging periods.

French Fry and Potato Specialty Product - Plant Operations

The Grand Falls French fry line and specialty product line utilize fryers in which potato products are cooked in hot vegetable oil. The fryers are heated via steam. The air emissions resulting from fryer operations consist of particulate matter.

The French fry and Potato Specialty Product building HVACs are utilized for heat dissipation and routine air exchanges.

Wastewater Treatment Facility – Biogas Flare Stack

The Grand Falls facility generates biogas from its anaerobic reactor as part of its wastewater treatment process. The anaerobic digester from the wastewater treatment plant produces approximately 1,500,000 m³ of biogas annually with a content of 1% hydrogen sulfide, 55 to 75% methane and 25 to 35% carbon dioxide. The biogas is flared in a 26.0 ft stack with a propane pilot light.

AIR QUALITY COMPLIANCE

McCain Foods Limited, Grand Falls Frozen Food Plant is required to comply with the *Air Quality Regulation – Clean Air Act* and operate under terms and conditions established in its Approval to Operate, issued pursuant to Section 3 of the *Air Quality Regulation – Clean Air Act*. Conditions are aimed at ensuring that the facility environmental impact during its day-to-day operations does not adversely affect air quality in surrounding areas, as well as regionally and globally. Any violations of the conditions of the Approval to Operate may be subject to compliance and enforcement measures as described in the Department of the Environment’s Compliance and Enforcement Policy.

Current Air Quality Approval to Operate Terms and Conditions and Compliance History

The main Terms and Conditions that the facility is required to comply with as per the current Air Quality Approval to Operate I-9677 (expiring August 15, 2022) and the company's associated compliance history to date are summarized below:

Emission Limits

- **This Facility has been classified as a Class 1B source, pursuant to the *Air Quality Regulation - Clean Air Act* and therefore, emissions from the operation are not to exceed 1000 tonnes per year of Sulphur Dioxide (SO₂) or 1000 tonnes per year of Particulate Matter (PM);**

The Facility has been in full compliance with this condition over the life of the current Air Quality Approval to Operate. The table that follows provides the historical results of the annual release of Sulphur Dioxide (SO₂) and Particulate Matter (PM) to the atmosphere from the Facility.

Year	Sulphur Dioxide tonnes per year	Particulate Matter tonnes per year
2020	5.12	0.73
2019	4.85	0.68
2018	7.27	0.73
2017	2.14	1.71
2016	2.37	1.82

Reporting

- **Prepare and submit a Yearly Report containing: a summary of any incidents and information of any violations of the Approval, the consumption of fuel oil and its average**

sulphur content, the consumption of natural gas, self-generated used oil and waste vegetable oil, the annual emission of sulphur dioxide from all combustion sources, the consumption of biogas and its average hydrogen sulphide concentration.

The Facility has been in full compliance with this condition over the life of the current Air Quality Approval to Operate.

ENFORCEMENT

Enforcement options used by the Department of Environment are outlined in the Department's *Compliance and Enforcement Policy*. These may include but are not limited to: schedules of compliance, verbal and written warnings, orders, and prosecutions. Although not specifically outlined in the Policy, it is also possible to amend approvals with more stringent conditions, both during its valid period or at the time of renewal, to address specific compliance issues or to improve the environmental impact of the facility.

There have been no warnings or orders issued, nor have there been any prosecutions initiated by this agency during this period, related to air quality for this facility.

PUBLIC OUTREACH

McCain Foods Limited, Grand Falls Frozen Food Plant indicates that its position on public outreach is to develop a positive community relationship by allowing an open-door policy, whereby any member of the public or interested party wishing to obtain further information about plant process may contact McCain Foods Limited, Grand Falls Frozen Food Plant during regular business hours.

CONTACT INFORMATION

For further information on the operation of McCain Foods Limited, Grand Falls Frozen Food Plant please contact:

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