



DEPARTMENT ORDER

**Penobscot McCrum, LLC
Aroostook County
Washburn, Maine
A-465-71-K-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

FINDINGS OF FACT

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Penobscot McCrum, LLC (McCrum) was issued Air Emission License A-465-71-J-R/A on December 2, 2022, for the operation of emission sources associated with their potato processing facility.

The equipment addressed in this license amendment is located at 2326 Parsons Road, Washburn, Maine.

McCrum has requested an amendment to their license in order to add a new process line consisting of a Steam Peeler and Fryer. The visible emissions requirements will also be updated to the latest standards as found 06-096 C.M.R. ch. 101, as applicable.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Process Equipment

Equipment	Production Rate	Pollution Control Equipment	Stack #
Steam Peeler #2	3,000 lb/hr	Steam Condensation Unit	6
Fryer #2	5,000 lb/hr	Venturi Scrubber	5

C. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the “Significant Emissions” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

Pollutant	Current License (tpy)	Future License (tpy)	Net Change (tpy)	Significant Emission Levels
PM	14.3	14.7	0.4	100
PM ₁₀	14.3	14.7	0.4	100
PM _{2.5}	14.3	14.7	0.4	100
SO ₂	5.5	5.5	0.0	100
NO _x	20.2	20.2	0.0	100
CO	17.8	17.8	0.0	100
VOC	4.9	5.1	0.2	100

This modification is determined to be a minor modification and has been processed as such.

D. Facility Classification

With the annual fuel limit on the Air Heaters and Boilers and the operating hours restriction on the fire pump, the facility is licensed as follows:

- As a synthetic minor source of air emissions for criteria pollutants, because McCrum is subject to license restrictions that keep facility emissions below major source thresholds for NO_x; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Amendment Description

McCrum is proposing to add a new processing line to their facility which will produce 'Tater Tots.' The equipment to be installed includes a steam peeler and a fryer.

The proposed equipment has a design throughput of approximately 5,000 pounds per hour of finished product. The process will utilize approximately 2,000 lbs/hr of size rejects from the other production lines and an additional 3,000 lbs/hr of whole potato stock. The whole potato feed stock will be steam peeled (by Steam Peeler #2) before being processed for size and shape. The processed, uncooked tots will then be fried (by Fryer #2). Product goes through the steam peeler, further mechanically processed, is cooled in the cooling conveyor, shaped, fried, and then frozen.

C. Steam Peeler #2

McCrum is proposing to add a new steam peeler to the process activities at their facility. Steam Peeler #2 uses steam to quickly heat the potatoes in order to facilitate the easy removal of the peel. The peeler consists of a pressure vessel where potatoes are exposed to high pressure steam, and a steam condensation unit on the exhaust of the peeler which McCrum has proposed to be used to control steam emissions from the unit. The steam condenser sprays the exhaust vapor with cool water, changing it back to a liquid which is then used elsewhere in the process.

McCrum has proposed controls which are expected to reduce possible emissions of PM and VOC, however there are no available emissions factors for this process. In the absence of other information, emissions are assumed to be negligible.

The following is considered BACT for Steam Peeler #2:

1. McCrum shall operate the steam condensation unit on the exhaust of Steam Peeler #2 whenever the unit is in operation and maintain it in accordance with manufacturer's recommendations.
2. McCrum shall maintain a written or electronic log detailing all maintenance and any malfunctions and subsequent repairs on the steam condensation unit. Inspections shall be completed on at least a monthly basis and documented.

D. Fryer #2

McCrum is proposing to install a new fryer to support the production of tater tots at their facility. The new fryer, designated Fryer #2, was manufactured by Idaho Steel specifically for this project and has the capacity to process 5,000 lb/hr.

Emissions from Fryer #2 consist of particulate matter, in the form of both condensable particulate matter and filterable particulate matter. Volatile organic compounds (VOC) are also emitted from the fryer.

In a BACT analysis provided by McCrum, a venturi scrubber was proposed as BACT for control of PM as well as some marginal collection of VOC. The venturi scrubber uses the differential between high velocity gases and free-flowing water to create droplets that entrap pollutants and remove them from the gas stream. McCrum has proposed to maintain the differential pressure across the scrubber to 12 inches of water column or greater which is expected to result in a collection rate of greater than 98% of PM/PM₁₀/PM_{2.5}. The emission factor for uncontrolled PM (filterable and condensable) from this process as found in AP-42 Table 9.13.3-2 is 1.99 lb PM/ton of finished product. A 98% removal efficiency results in an estimated emission rate of 0.10 lb PM/hr exiting the scrubber. The emission factor for VOC from this process as found in AP-42 Table 9.13.3-3 is 0.02 lb PM/ton of finished product, resulting in an hourly VOC emission rate of 0.05 lb/hr.

The use of a venturi scrubber has been determined to be BACT for PM emissions from Fryer #2. Emissions from Fryer #2 shall not exceed 0.10 lb PM/hr and 0.05 lb VOC/hr. Compliance with these emission limits will be demonstrated by maintaining a differential pressure across the venturi scrubber of at least 12 inches of water column at all times the fryer is in operation. Scrubber pressure drop readings shall be recorded once per shift.

McCrum shall record the date, time, duration, and the reason for all venturi scrubber downtime when Fryer #2 is in operation; maintain a written or electronic log detailing all maintenance and any malfunctions on the venturi scrubber; and maintain records of monthly production (tons of finished product) for the Fryer #2 line. [06-096 C.M.R. ch. 115, BPT]

E. General Process Emissions

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis.

F. Fugitive Emissions

McCrum shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

McCrum shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

G. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility’s annual air license fee and establishing the facility’s potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- A facility-wide heat input limit of 273,000 MMBtu/yr based on heat content values of 0.00103 MMBtu/scf for natural gas and 0.0915 MMBtu/gal for propane.
- The worst-case emissions scenario for Boiler #1 and the Air Units is based on the licensed Air Units in operation 8,760 hours/year while firing propane.
- Operating Fire Pump #1 for 100 hrs/yr;
- Annual Dryer production limit of 89,650 tons of finished product per year;
- Flare and Boiler #2 inlet gas H₂S concentration of 1,100 ppmv and 100 scfm gas flow; and
- Operating Fryer #2 for 8,760 hours/year.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC
Boilers and Air Heaters	1.37	1.37	1.37	0.08	17.46	11.19	1.64
Fire Pump #1	0.01	0.01	0.01	0.00	0.39	0.10	0.01
Digester Gas Usage in Boiler #2 and Flare	0.20	0.20	0.20	5.34	2.33	6.41	2.39
Dryer	11.04	11.04	11.04	--	--	--	--
Fryer	1.62	1.62	1.62	--	--	--	0.81
Fryer #2	0.44	0.44	0.44	--	--	--	0.22
Total TPY	14.7	14.7	14.7	5.5	20.2	17.8	5.1

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM ₁₀	25
PM _{2.5}	15
SO ₂	50
NO _x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license amendment.

This determination is based on information provided by the applicant regarding the expected construction and operation of the proposed emission units. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department may require McCrum to submit additional information and may require an ambient air quality impact analysis at that time.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-465-71-K-A subject to the conditions found in Air Emission License A-465-71-J-R/A and the following conditions.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following are new conditions of Air Emission License A-465-71-J-R/A.

(21) Process Equipment

D. Steam Peeler #2

1. McCrum shall operate the steam condensation unit on the exhaust of Steam Peeler #2 whenever the unit is in operation and maintain it in accordance with manufacturer's recommendations. [06-096 C.M.R. ch. 115, BACT]
2. McCrum shall maintain a written or electronic log detailing all maintenance and any malfunctions and subsequent repairs on the steam condensation unit. [06-096 C.M.R. ch. 115, BACT]

E. Fryer #2

1. Emissions from Fryer #2 shall not exceed the following:

Pollutant	Emission Rate (lb/hr)
PM	0.10
VOC	0.05

[06-096 C.M.R. ch. 115, BACT]

2. McCrum shall operate and maintain in good working order and in accordance with manufacturer's specifications, the venturi scrubber on Fryer #2. Compliance with the emission limits will be demonstrated by maintaining a differential pressure across the venturi scrubber of at least 12 inches of water column at all times the fryer is in operation. Scrubber pressure drop readings shall be recorded once per shift. [06-096 C.M.R. ch. 115, BACT]
3. McCrum shall record the date, time, duration, and the reason for all venturi scrubber downtime when Fryer #2 is in operation; maintain a written or electronic log detailing all maintenance and any malfunctions on the venturi scrubber; and maintain records of monthly production (tons of finished product) for the Fryer #2 line. Inspections shall be completed on at least a monthly basis and documented. [06-096 C.M.R. ch. 115, BPT]

The following shall replace Specific Conditions (24) and (25) of Air Emission License A-465-71-J-R/A.

(24) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(B)(4)]

(25) **Fugitive Emissions**

1. McCrum shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.
2. McCrum shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

[06-096 C.M.R. ch. 101, § 4(C)]

DONE AND DATED IN AUGUSTA, MAINE THIS 4th DAY OF MARCH, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for
MELANIE LOYZIM, COMMISSIONER

The term of this license amendment shall be ten (10) years from the issuance of Air Emission License A-465-71-J-R/A (issued 12/2/2022).

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 11/27/23

Date of application acceptance: 11/27/23

Date filed with the Board of Environmental Protection:

This Order prepared by Chris Ham, Bureau of Air Quality.

