



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PAUL MERCER
COMMISSIONER

McCain Foods USA, Inc.
Aroostook County
Easton, Maine
A-436-77-6-M

Departmental
Findings of Fact and Order
New Source Review
NSR #6

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 Annotated (M.R.S.A.), Section 344 and Section 590, the Maine Department of Environmental Protection (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	McCain Foods USA, Inc.
LICENSE TYPE	06-096 CMR 115, Minor Revision
NAICS CODES	311411
NATURE OF BUSINESS	Frozen Potato Products
FACILITY LOCATION	Richardson Rd, Easton, Maine

B. NSR License Description

McCain Foods USA, Inc. (McCain) has requested a New Source Review (NSR) amendment in order to update the basis for quantifying SO₂ emissions from the digester project installed pursuant to NSR license A-436-77-2-A (issued 1/6/12) and as amended in NSR amendment A-436-77-5-A (issued 4/24/15).

C. Emission Equipment

The following equipment is addressed in this NSR license:

Boilers & Flare

Equipment	Maximum Heat Input Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur	Manufacture Date	Stack #
Boiler #8	49.5 37.8 (biogas)	354 gal/hr 48,529 scf/hr 60,000 scf/hr	distillate fuel, 0.5% spec. waste oil, 0.5% vegetable oil natural gas biogas	2005	17
Boiler #9	49.5 37.8 (biogas)	354 gal/hr 48,529 scf/hr 60,000 scf/hr	distillate fuel, 0.5% spec. waste oil, 0.5% vegetable oil natural gas biogas	2005	18
Sludge Heater	2.7	29.1 gal/hr 4,222 scf/hr	propane biogas	2012	20
Biogas Flare	26.5	0.6 gal/hr 42,000 scf/hr	propane biogas	1998	N/A

Additional Equipment

Equipment	Pollution Control Equipment
Anaerobic Digester	biogas flare

D. Application Classification

The application submitted by McCain does not violate any applicable federal or state requirements, does not reduce monitoring, reporting, testing, or recordkeeping requirements, and does not seek to modify a Best Available Control Technology (BACT) analysis.

The proposed revision will not change the facility's emission limits. Therefore, the NSR license is determined to be a minor revision under *Minor and Major Source Air Emission License Regulations* 06-096 Code of Maine Rules (CMR) 115 (as amended). The procedures found in 06-096 CMR 115 (as amended) can be utilized to process this application since the proposed revision not prohibited by the Part 70 air emission license. An application to incorporate the requirements

of this NSR license into the Part 70 air emission license was received in conjunction with the application for this NSR amendment.

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 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

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

B. Revision Description

When the digester project was originally permitted in NSR license A-436-77-2-A, McCain accepted a limit on actual facility-wide emissions increases from the project in order to be classified as a minor modification. McCain is required to demonstrate that emissions as a result of the digester project do not exceed major modification thresholds in any 12-month period up until January 2022.

In NSR amendment A-436-77-5-A, McCain demonstrated that it is not physically possible to exceed major modification thresholds for any pollutant except SO₂. Therefore, McCain is only required to calculate and maintain records of emissions of SO₂ from the digester project.

McCain is required to demonstrate compliance with a 39.9 ton/year SO₂ limit on a 12-month rolling total basis utilizing the total amount of biogas produced by the digester and assuming all of the H₂S in the biogas is converted to SO₂ upon combustion. Currently, the H₂S content of the biogas used in the SO₂ emission calculations is assumed to be 0.57%. This H₂S concentration is based on data from McCain's Plover, Wisconsin facility.

In 1999 McCain installed a wastewater treatment system where biogas was produced and combusted at the facility. McCain needed to estimate the H₂S concentration of the biogas that would be produced. The only information available at the time was biogas testing from the Plover, Wisconsin plant. The equipment in Plover is a high rate anaerobic system. The wastewater treatment system in Easton is a slow rate anaerobic system. It was believed that a high rate

system, such as Plover's, would produce biogas with a higher H₂S concentration than a low rate system as installed in Easton. Therefore, an H₂S concentration of 0.57% was used as it was considered conservatively high.

When McCain installed the digester project in 2012, the same H₂S concentration was used for consistency as it was still considered conservatively high. However, McCain's digester project has been very successful and they continue to use more biogas to replace fossil fuels in their boilers. McCain's calculated SO₂ emissions are approaching the 39.9 ton/year limit for SO₂; therefore, McCain looked at refining the estimates used for calculating compliance.

McCain has performed H₂S testing on the biogas produced by their Easton facility. Three separate samples were taken in February and March of 2016. As expected, the H₂S content of the biogas was significantly lower than the estimates used from the Plover facility. H₂S concentrations ranged from 0.0263% to 0.0317%. Therefore, McCain would like to use an H₂S Concentration of 0.04% when calculating emissions of SO₂ for the digester project. Using this value would still yield a conservatively high estimate of SO₂ emissions while greatly increasing the amount of biogas the facility could utilize.

This change will not require any changes to licensed annual emissions. Since the specific H₂S concentration used in calculating emissions is not addressed in the Order section of their license, no changes are required to any license conditions. McCain has not requested any changes to short-term emission limits from any equipment which fires biogas.

C. Incorporation into the Part 70 Air Emission License

The requirements in this 06-096 CMR 115 New Source Review license shall apply to the facility upon issuance. Per *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended), Section 1(C)(8), for a modification at the facility that has undergone NSR requirements or been processed through 06-096 CMR 115, the source must then apply for an amendment to their Part 70 license within one year of commencing the proposed operations, as provided in 40 CFR Part 70.5. McCain has already submitted a request to incorporate these changes into their Part 70 license.

D. Annual Emissions

This amendment will not result in any change in licensed annual emissions.

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Aroostook County
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ORDER

The Department hereby grants New Source Review Minor Revision A-436-77-6-M pursuant to the preconstruction licensing requirements of 06-096 CMR 115.

This amendment does not include any change in licensed Conditions or any additional Conditions.

DONE AND DATED IN AUGUSTA, MAINE THIS 12 DAY OF May, 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Maec Allen Robert Cone for
PAUL MERCER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 5/2/16

Date of application acceptance: 5/2/16

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

