Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

BUREAU OF AIR MANAGEMENT
NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator:	Frito-Lay, Inc. - Dayville Facility
Address:	1886 Upper Maple Street, Killingly, CT 06241
Equipment Location:	1886 Upper Maple Street, Killingly, CT 06241
Equipment Description:	Starch Dryer No. 2
Collateral Conditions:	Parts II.A.3 and 4, II.C.1, V.A, and VI. of this permit contain collateral conditions affecting the operation of Starch Dryer No. 1 (Permit No. 089-0039)

Town-Permit Numbers:	089-0106
Town-Premises Numbers:	089-0065
Prior Permit Issue Date:	August 24, 2011 (Original)
Modification Issue Date:	March 12, 2012
Expiration Date:	None

/s/ Anne Gobin for
Daniel C. Esty
Commissioner

March 12, 2012
Date

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

PART I. DESIGN SPECIFICATIONS

A. General Description

Frito-Lay, Inc. is a manufacturer of potato and corn based snack foods. In the preparation of the raw potato feed to the potato chip process lines, starch is extracted from the potatoes, concentrated, and then dried in a flash dryer system. The dry starch product is then conveyed to packaging by a pneumatic conveyor system. The pneumatic conveyor system along with two starch dryers, comprise Frito-Lay's Starch Recovery System.

Starch Dryer No. 1 (New Source Review Permit No. 089-0039) uses a steam heat exchanger to heat air used as the drying and conveying medium, while Starch Dryer No. 2 uses a direct-fired natural gas burner. However, both starch dryers use hot exhaust gas (from a Combined Heat and Power (CHP) Plant; New Source Review Permit No. 089-0105), which has been treated by the CHP's emission control systems (prior to going into the dryers), as an alternate source of heat and conveying gas.

Particulate matter (PM) emissions from the starch dryers will be controlled through the use of two cyclones and a fabric filter baghouse (shared by the dryers). Lastly, emissions from both dryers will be exhausted through the same stack.

B. Equipment Design Specifications

1. Dryer

   a. Design Maximum Rated Capacity (tons/year): 6,570

2. Burner

   a. Maximum Fuel Firing Rate (scf/hr): 2,353
   b. Maximum Gross Heat Input (MMBTU/hr): 2.4

C. Control Equipment Design Specifications

1. Fabric Filter

   a. Make and Model: Micro Air RP6-2 or equivalent
   b. Bag Material: Cellulose/Synthetic Fiber Blend
   c. Air/Cloth Ratio: 5.5:1
   d. Cleaning Method: Pulse Jet
   e. Grain Loading (grains/scf @ 68°F): 2.0 (Inlet); 0.001(Outlet)

FIRM NAME: Frito-Lay, Inc – Dayville Facility
EQUIPMENT LOCATION: 1886 Upper Maple Street, Killingly, CT 06241
EQUIPMENT DESCRIPTION: Starch Dryer No. 2

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART I. DESIGN SPECIFICATIONS, continued

f. Gas Flow Rate (scfm @ 68°F): 7,517
g. Design Pressure Drop Across Unit (inches H_20): 6.0
h. Design Control Efficiency (%): 99

2. Cyclone

a. Make and Model: Holt 1895-FD1000
b. Type of Cyclone: Single
c. Gas Flow Rate (scfm @ 68°F): 3,759
d. Grain Loading (grains/scf @ 68°F): 0.50 (Inlet); 0.10(Outlet)
e. Design Control Efficiency (%): 85

3. The Direct-Fired Natural Gas Burner is a Low NOx Burner.

D. Stack Parameters

1. Minimum Stack Height (ft): 57
2. Minimum Exhaust Gas Flow Rate (acfm): 8,400
3. Stack Exit Temperature (°F): 130
4. Minimum Distance from Stack to Property Line (ft): 328

PART II. OPERATING REQUIREMENTS

Notwithstanding the design specifications or description provided in Part I, above, the Permittee of the subject source shall comply with the following operating requirements.

A. Dryer

1. Material Processed: Starch
2. Source of Heat: Direct-Fired Natural Gas Burner (Primary); CHP Plant's Exhaust (Back-Up)
3. Maximum Hourly Wet Starch Input for Starch Dryer No. 1 (Permit No. 089-0039) and Starch Dryer No. 2 combined (lbs/hr): 5,000
4. Maximum Hourly Starch Throughput for Starch Dryer No. 1 (Permit No. 089-0039) and Starch Dryer No. 2 combined (lbs/hr): 3,000(dry basis)
5. Minimum Inlet Air Temperature(°F): 200

B. Burner

1. Fuel Type: Natural Gas
2. Maximum Fuel Consumption over any Consecutive 12 Month Period: 20.6 MMCF

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

C. CHP Plant's Exhaust going into the Dryer

1. Maximum Total Exhaust Flow Rate going into Starch Dryer No. 1 (Permit No. 089-0039) and Starch Dryer No. 2 combined (acfm): 8,400
2. The Exhaust (going into the dryer) shall be as treated by the CHP's emission control systems.

PART III. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

1. The Permittee shall install, calibrate, maintain and operate a temperature measuring device to continuously monitor and periodically record the Inlet Air temperature.

2. The Permittee shall install, calibrate, maintain and operate a bag leak detection system with alarm (visual), according to manufacturer's written instructions.

3. The Permittee shall install, calibrate, maintain and operate a flow meter to continuously monitor and continuously record the (total) flow rate of the CHP Plant's Exhaust going into both dryers.

B. Record Keeping

1. The Permittee shall make and keep records of the daily, 28-day period and consecutive 13 (28-day) periods' quantity of material (starch on a dry basis) processed. The consecutive 13 (28-day) periods' quantity of material processed shall be calculated by adding the current 28-day period's quantity of material processed to that of the previous 12 (28-day) periods. The Permittee shall make these calculations within 28 days of the end of the previous 28-day period.

2. The Permittee shall make and keep records of monthly and consecutive 12 month fuel consumption. The consecutive 12 month fuel consumption shall be determined by adding the current month's fuel consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART III. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS, cont'd

3. The Permittee shall calculate and record the 28-day period and consecutive 13 (28-day) periods' $PM_{10}/PM_{2.5}$, SO_x, NO_x, CO, VOC, and NH_3 emissions in units of tons. The consecutive 13 (28-day) periods' emissions shall be determined by adding (for each pollutant) the current 28-day period's emissions to that of the previous 12 (28-day) periods. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 28 days of the end of the previous 28-day period.

4. The Permittee shall keep records demonstrating that the fabric filter and cyclone were designed in accordance with the specifications listed in Part I.C.1 and 2, respectively, of this permit.

5. The Permittee shall make and keep records of the date and time the bag leak detector alarms, the cause, any corrective actions taken in response to the alarm, and the name of the person making the entry.

6. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

C. Reports of Exceedances

1. Reports of any exceedances of material usage or emission limitations, set forth in this permit, shall be submitted to the Department in writing within 30 days of the date of such exceedance. Such report shall at a minimum, include a description of the nature of the exceedance, the duration and magnitude of the exceedance, the steps taken to reestablish compliance and the success of such steps, and the steps taken to assure that compliance is maintained in the future.

PART IV. OPERATION AND MAINTENANCE REQUIREMENTS

A. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.

B. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART V. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow the two starch dryers (Permit Nos. 089-0039 and 089-0106) to exceed the combined emission limits stated herein at any time.

A. Criteria Pollutants and Ammonia

Pollutants	lb/hr	gr/acf	tpy
$PM_{10}/PM_{2.5}$	0.108	0.0015[1]	0.48
SO_x	0.009		0.04
NO_x	0.165		0.72
VOC	0.174		0.76
CO	1.554		6.80
NH_3	0.252		1.10[2]

B. Hazardous Air Pollutants: This equipment shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA Section 22a-174-29. [**STATE ONLY REQUIREMENT**]

Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:

i. $PM_{10}/PM_{2.5}$: Initial stack test results.

ii. SO_x, VOC, CO and HAPs (except for NH_3): Compilation of Air Pollutant Emission Factors, AP-42, 5th Edition, Section 1.4, July 1998 and scaled from the CHP Plant's permit (Permit No. 089-0105).

iii. NO_x: Manufacturer's Data and scaled from the CHP Plant's permit (Permit No. 089-0105).

iv. NH_3: Scaled from the CHP Plant's permit (Permit No. 089-0105).

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

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[1] Emissions limit required to meet the requirements listed in the 2009 CT DEP Ambient Impact Analysis Guidelines.
[2] Ammonia emissions are due to the Selective Catalytic Reduction Slip from the Combined Heat and Power Plant.

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART VI. STACK EMISSION TEST REQUIREMENTS

Stack emission testing shall be performed in accordance with the latest Emission Test Guidelines available on the DEEP website:

http://www.ct.gov/dep/cwp/view.asp?a=2684&q=322076&depNav_GID=1619

Initial stack emission testing shall be required for the following:

☒ $PM_{2.5}$ ☐ SO_x ☐ NO_x ☐ CO ☐ VOC ☐ Pb

☐ Other (HAPS): _____

The Permittee shall conduct initial stack testing within 60 days of achieving the maximum production rate (with both starch dryers running), but not later than 180 days after initial start-up[3]. Test results must be submitted within 45 days after testing.

PART VII. SPECIAL REQUIREMENTS

A. STATE ONLY REQUIREMENT: The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23.

B. STATE ONLY REQUIREMENT: The Permittee shall operate this source and all accompanying equipment at all times in a manner so as not to violate or significantly contribute to the violation of any applicable state noise control regulations, as set forth in RCSA Sections 22a-69-1 through 22a-69-7.4.

PART VIII. ADDITIONAL TERMS AND CONDITIONS

A. This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

B. Any representative of DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable

[3] Initial start-up is defined as the first time either Starch Dryer No. 1 (Permit No. 089-0039) or 2 is operated, after both dryers have been connected to the same Fabric Filter Baghouse and are exhausting through the same stack.

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

state law.

PART VIII. ADDITIONAL TERMS AND CONDITIONS, continued

C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.

D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons of municipalities who are not parties to this permit.

E. Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under Section 22a-175 of the Connecticut General Statutes, under Section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."

F. Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

G. Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.

H. The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or

PERMIT FOR PROCESS EQUIPMENT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

disapproval of any document or other action, shall be the date such

PART VIII. ADDITIONAL TERMS AND CONDITIONS, continued

notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.

I. Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.