

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: XX/XX/2025

Region: Mooresville Regional Office
County: Union
NC Facility ID: 9000169
Inspector's Name: Afroze Fatima
Date of Last Inspection: 11/07/2024
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Darling Ingredients Inc. dba Bakery Feeds

Facility Address:
Darling Ingredients Inc. dba Bakery Feeds
5805 Highway 74 East
Marshville, NC 28103

SIC: 2048 / Prepared Feeds Nec
NAICS: 311119 / Other Animal Food Manufacturing

Facility Classification: Before: Title V After: Title V
Fee Classification: Before: Title V After: Title V

Permit Applicability (this application only)

SIP: 02D .0503, 02D .0516, 02D .0521, 02D .1407
NSPS: N/A
NESHAP: Avoidance of GACT (6J)
PSD: N/A
PSD Avoidance: 02Q .0317 of 02D .0531 (NAA)
NC Toxics: 02D .1100 and 02Q .0711
112(r): N/A
Other: 02D .0902 (RACT), 02D .1806 (Odors) and
Emerging Fluorinated Contaminants (PFAS)

Contact Data

Facility Contact

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Authorized Contact

Gary Adkins
General Manager
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Technical Contact

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Manager of
Environmental Affairs
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Cold Spring, KY 41076

Application Data

Application Number: 9000169.22A
Date Received: 03/28/2022
Application Type: Renewal
Application Schedule: TV-Renewal
Existing Permit Data
Existing Permit Number: 08194/T15
Existing Permit Issue Date: 09/14/2022
Existing Permit Expiration Date: 12/31/2022

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2023	1.50	27.85	131.40	33.99	17.83	0.6516	0.3980 [Hydrogen chloride (HCl)]
2022	1.40	27.65	122.58	33.70	16.73	0.6231	0.3710 [Hydrogen chloride (HCl)]
2021	1.40	28.45	122.95	34.68	16.73	0.6319	0.3721 [Hydrogen chloride (HCl)]
2020	1.50	29.83	130.41	36.36	17.73	0.6669	0.3952 [Hydrogen chloride (HCl)]
2019	1.60	31.18	134.35	38.10	18.34	0.6914	0.4066 [Hydrogen chloride (HCl)]

Review Engineer: Jeff Twisdale

Review Engineer's Signature: **Date:**

Comments / Recommendations:

Issue 08194/T16

Permit Issue Date: XX/XX/2025

Permit Expiration Date: XX/XX/2030

1. Purpose of Application

Darling Ingredients Inc. dba Bakery Feeds (Bakery Feeds) currently holds Title V (TV) Permit No. 08194T15 with an expiration date of December 31, 2022, for a bakery recycling facility in Marshville, Union County, North Carolina. This permit application is for a permit renewal without modification. The renewal application was received on March 28, 2022, or at least six months prior to the expiration date that was considered to be a timely renewal application submittal pursuant to 15A NCAC 02Q .0513. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

Bakery Feeds also submitted a 502(b)(10) notification (9000169.20A) on April 7, 2020, to add peanut hulls as a fuel for the rotary dryers (ID Nos. ES-2 and ES-4). This application will be consolidated with Title V permit renewal application (9000169.22A) as part of this permit renewal.

2. Facility Description

Bakery Feeds is a bakery recycling facility. This facility collects inedible bakery commodities by-product residuals, such as bread, dough, crackers, sweet goods, and snack chips from various commercial bakeries and snack food manufacturers. The commodity by-product residuals are mixed together, ground, and dried, and wheat middlings are added to this mixture to form animal feed ingredients referred to by the company as cookie meal. The cookie meal is then shipped to various feed mills to be used in poultry and hog feed.

The facility operates two sawdust/propane/natural gas/packaging materials/peanut hulls fuel-fired rotary dryers (22.5 million Btu per hour maximum rated input, ID Nos. ES-2 and ES-4) with two simple cyclones (120 inches in diameter each, ID Nos. CD-1 and CD-2). Recently, the facility through a minor modification (9000169.22B¹) added a low sulfur diesel (LSD) fuel/propane/natural gas/processed fats-fired boiler (ID No. ES-10), with a maximum rated heat input of 8.4 million Btu per hour (MMBtu/hr) that became operational on January 16, 2023.

The facility is a Title V (TV) facility because VOC emissions exceed its respective TV threshold (> 100 tons per year).

3. History/Background/Application Chronology

Permit History since the last TV Permit Renewal

January 31, 2018	TV permit renewed. Air Permit No. 08194T14 was issued on January 31, 2018, with an expiration date of December 31, 2022.
September 14, 2022	Air Permit No. 08194T15 was issued as a minor modification for the following: <ul style="list-style-type: none">• Replaced the existing No. 2 fuel oil/propane/natural gas/processed fats-fired boiler (ID No. ES-7), with maximum rated heat input of 8.37 MMBtu/hr with a low sulfur diesel (LSD) fuel/propane/natural gas/processed fats-fired boiler (ID No. ES-10), with a maximum rated heat input of 8.4 MMBtu/hr.• Removed two No. 2 fuel oil/propane/natural gas/processed fats-fired boilers (ID Nos. ES-8 and ES-9), each with a maximum rated heat input of 33.48 MMBtu/hr. These boilers were never installed at Bakery Feeds.

¹ Permit review for Air Permit No. 08194T15 issued on September 14, 2022 (9000169.22B).

Application Chronology

April 2, 2020	Received application (9000169.20A) for a 502(b)(10) change to add peanut hulls as fuel for rotary dryers (ID Nos. ES-2 and ES-4).
April 8, 2020	Sent a 502(b)(10) acknowledgement letter for the additional fuel (peanut hulls).
March 28, 2022	Received application (9000169.22A) for TV permit renewal.
March 31, 2022	Sent acknowledgment letter indicating the application for permit renewal was complete.
April 23, 2023	Reassigned applications (.22A & .20A) from Betty Gatano to Jeff Twisdale
September 6, 2024	Sent additional info email regarding Addressing Emerging Contaminants Screening Questions
October 21, 2024	Received additional info email regarding Addressing Emerging Contaminants Screening Questions
April 24, 2025	Sent draft permit/review to Supervisor
May 23, 2025	Received minor comments from Supervisor
June 6, 2025	Sent Draft permit and review to applicant, regional and central office staff
June 12, 2025	Received minor admin comments from the applicant
June 17, 2025	Received no comments from the regional office
June XX, 2025	Draft permit and permit review forwarded to public notice via DAQ website
XX XX, 2025	Public comment period ends. Comments <u>were/were not</u> received
XX XX, 2025	EPA comment period ends. Comments <u>were/were not</u> received
XX XX, 2025	Sent Permit to Permitting Chief for signature

4. Permit Changes and TVEE Discussion

The following table describes the changes to the current permit as part of the renewal process.

Pages	Section	Description of Changes
Cover and throughout		Updated all dates and permit revision numbers
Cover and 4	Cover and 1.0 Equipment Table	Removed language and footnotes indicating boiler (ID No. ES-10) was added to the permit as a minor modification (9000169.22B)
4	1.0 Equipment Table	Added peanut hulls as a fuel option for the rotary dryers (ID Nos. ES-2 and ES-4)
13	2.2 A.5	Added condition for the Potential Emissions of Fluorinated Chemicals (state-enforceable only)
15 - 23	4	Updated General Conditions to latest version 8.0, 07/10/2024

A couple changes were made to the Title V Equipment Editor (TVEE) to add peanut hulls as a fuel for the two rotary dryers (ID Nos. ES-2 and ES-4) as follows:

one sawdust/propane/natural gas/packaging materials/*peanut hulls* fuel-fired rotary dryer (22.5 million Btu per hour maximum rated input, utilizing natural gas, packaging materials, *peanut hulls* and sawdust as fuel sources with propane as an emergency back-up fuel)

5. 502(b)(10) Notification

A discussion of the equipment changes and emissions associated with the 502(b)(10) notification is provided in this section, with the applicable regulatory review and compliance discussion below.

- Permit Application No. 9000169.20A – The 502(b)(10) notification was received on April 2, 2020, for the addition of peanut hulls as a permitted fuel in two rotary dryers (ID Nos. ES-2 and ES-4). Since the peanut hulls are considered clean cellulosic biomass as well as sawdust by definition per 40 CFR 241.2, the burning the peanut hulls will be like burning sawdust, an already permitted fuel option for the existing dryers. Therefore, no change in applicable regulations nor change in emissions is expected with this fuel addition. Continued compliance is expected.

6. Review of Emerging Contaminants

DAQ has determined that per- and polyfluoroalkyl substances, also known as PFAS, may be emitted from facilities operating under SIC 2048 / Prepared Feeds Nec. DAQ sent a PFAS Questionnaire to Gary Adkins, Plant Manager, Bakery Feeds, on September 6, 2024, and a response was received on October 21, 2024, from Kelly Thomas, Director of Environmental Affairs, Darling Ingredients. The facility's response is documented in Attachment 1 to this document and states in short that PFAS are not stored onsite. Based on the knowledge that other similar facilities that burn bakery packing materials may contain PFAS, the PFAS disclosure condition below will be included in this permit renewal.

State-enforceable only

Disclosure of Information Relating to Emissions of Fluorinated Chemicals [15A NCAC 02Q .0308(a); 15A NCAC 02Q .0309(b)]

The Permittee shall have an ongoing duty to disclose the presence of materials containing fluorinated chemicals at the facility that have the potential to result in the emission of fluorinated chemicals to the environment. Such disclosures shall be in writing and submitted to the Regional Office Supervisor within thirty days of the Permittee becoming aware of such information, unless such information has already been disclosed to DAQ by the Permittee. The disclosure shall describe the identity, quantity, and use of such material to the extent known. DAQ may require the permittee to conduct analysis or testing of fluorinated chemical emissions as necessary to properly evaluate emissions sources at the facility. As used in this condition, the term "fluorinated chemicals" includes but is not limited to per- and polyfluoroalkyl substances (PFAS).

7. Regulatory Review

Bakery Feeds is subject to the following regulations. The permit will be updated to reflect the most current stipulations for all applicable regulations.

- 15A NCAC 02D .0503: Particulates from Fuel Burning Indirect Heat Exchangers –
The boiler (ID No. ES-10) is subject to 02D .0503. This boiler has a maximum heat input of 8.4 MMBtu/hr. As specified in 02D .0503(c), the allowable emission limit for particulate matter (PM) is 0.60 pounds per million Btu (lb/MMBtu) for a maximum heat input of up to and including 10 MMBtu/hr.

Based on emission factors for each of the fuels burned in the boiler, the maximum PM emissions expected from the boiler for each are provided as follows:

- Processed fats – 0.01 lb/MMBtu as provided by Bakery Feeds. This emission factor was used when boilers ES-8 and ES-9 were permitted and is based on 2001 testing at a different facility.²
- Low Sulfur Diesel (LSD) fuel – 0.0247 lb/MMBtu based on an emission factor for PM of 3.3 pounds per 10³ gallons for No. 2 fuel oil in DAQ’s “Fuel Oil Combustion Emission Calculator Revision G” (11/05/2012) and a fuel heating value of 136,500 Btu/gallon provided by Bakery Feeds. This value differs from that provided in the permit application because Bakery Feeds did not include condensable PM emissions in their emissions estimation.
- Natural gas – 0.008 lb/MMBtu based on an emission factor for PM of 7.6 lb/10⁶ standard cubic feet (scf) for natural gas in Table 1.4-10 in US EPA AP-42 Chapter 1.4 and a fuel heating value of 1,000 Btu/scf provided by Bakery Feeds. This emission factor is larger than provided in DAQ’s “Natural Gas Combustion Emission Calculator Revision N” (01/05/2017) and is acceptable.
- Propane – 0.0078 lb/MMBtu based on an emission factor for PM of 0.70 lb/10³ gal for liquified petroleum gas (LPG) in Table 1.5-1 in US EPA AP-42 Chapter 1.5 and a fuel heating value of 91,500 Btu/gallon provided by Bakery Feeds. This emission factor is larger than provided in DAQ’s “Liquified Petroleum Gas (LPG) Combustion Emission Calculator Revision F” (01/05/2017) and is acceptable.

For all fuels, the emission factor is less than the allowable PM limit, and no monitoring, recordkeeping, and reporting are required to ensure compliance with this rule. Compliance is anticipated.

- 15A NCAC 02D .0515: Particulates from Miscellaneous Industrial Processes –
The rotary dryers (ID Nos. ES-2 and ES-4) are subject to 02D .0515. Bakery Feeds shall conduct monthly external inspections of the ductwork and control devices (ID Nos. CD-1 and CD-2) to ensure compliance. The cyclones operate at a level to easily achieve compliance with 02D .0515 as shown in the table below.

Rotary Dryer/ Cyclone ID Nos.	Process Weight	Operating Hours	Allowable PM Emission	Reported PM (TSP) Emissions
ES-2/CD-1	69,288 tpy 16.66 tph	4,160 hr/yr	27.0 lb/hr	21.0 tpy 10.1 lb/hr
ES-4/CD-2	79,320 tpy 16.95 tph	4,680 hr/yr	27.3 lb/hr	24.1 tpy 10.3 lb/hr
<u>Notes:</u> <ul style="list-style-type: none"> • All data above reported to the DAQ in the 2023 emission inventory. • Allowable PM emission calculated from the following equation in 02D .0515 for process weights up to 30 tph. $E = 4.10(P)^{0.67}$				

No changes to the recordkeeping, monitoring, or reporting requirements are needed under this permit renewal.

² Permit review for Air Permit No. 08194T11 issued on December 7, 2011 (9000169.10B).

- 15A NCAC 02D .0516: Sulfur Dioxide Control Requirement –
The following emission sources are subject to 02D .0516.
 - Boiler (ID No. ES-10) – No monitoring, recordkeeping, or reporting is required when firing LSD fuel, natural gas, propane, and/or processed fats because of the low sulfur content of the fuels. These fuels are inherently low enough in sulfur to always be in compliance with this rule.
 - Two rotary dryers (ID Nos. ES-2 and ES-4) – No monitoring, recordkeeping, or reporting is required when firing sawdust, peanut hulls, propane, natural gas, or packaging materials fuel for the biomass burners in the dryers. These fuels are inherently low enough in sulfur to always be in compliance with this rule. No changes to the recordkeeping, monitoring, or reporting requirements are needed under this permit renewal.

- 15A NCAC 02D .0521: Control of Visible Emissions –
The following emission sources are subject to 02D .0521.
 - Boiler (ID No. ES-10) must not have visible emissions of more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d). Visible emissions are not expected when firing LSD fuel, propane, natural gas, and/or processed fats in this boiler, and no monitoring, recordkeeping, or reporting is required for compliance with 02D .0521. No changes to the recordkeeping, monitoring, or reporting requirements are needed under this permit renewal.
 - The rotary dryers (ID Nos. ES-2 and ES-4) must not have visible emissions of more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d). The facility must conduct weekly visible emission observations and follow recordkeeping and reporting requirements to ensure compliance. No changes to the recordkeeping, monitoring, or reporting requirements are needed under this permit renewal. Continued compliance is anticipated.

- 15A NCAC 02D .0902: Applicability –
Reasonably Available Control Technology (RACT) for VOC for the rotary dryers (ID Nos. ES-2 and ES-4) was determined to be no additional controls. See Section 8 for further discussion on RACT.

- 15A NCAC 02D .1100: Control of Toxic Air Pollutants (TAPs) –
The permit contains modeled emission rates for acrolein, arsenic, benzene, beryllium, cadmium, chromium, chlorine, fluorides, formaldehyde, hydrogen chloride, and manganese. See Section 9 for further details regarding TAPs.

- 15A NCAC 02D .1404, 1407, and .1414: Monitoring, Recordkeeping, Reporting and Tune-Up Requirements for Nitrogen Oxides (NO_x) from Boilers and Indirect-Fired Process Heaters –
These regulations apply to facilities located in Union County with potential facility-wide NO_x emissions equal to or greater than 100 tons per year (tpy) or 560 pounds per day (lb/day) from May 1 through September 30 of each year. The facility-wide potential NO_x emissions from Bakery Feeds are less than 100 tons annually; however, the emissions of NO_x are greater than 560 pounds per day, as shown below:

Parameter	Value	Reference
Emissions of NO_x from Dryers (ID Nos. ES-2 and ES-4)		
NO _x emission factor	0.49 lb/MMBtu	Worse-case NO _x emission factor for dry wood in US EPA's AP-42, Chapter 1.6, Table 1.6-1 (2022).
Maximum Permitted Heat Input	22.5 MMBtu/hr per dryer	Current air permit

Parameter	Value	Reference
NO _x emissions	$E_{\text{dryer}} = (0.49 \text{ lb/MMBtu/hr}) * (22.5 \text{ MMBtu/hr})$ $E_{\text{dryer}} = 11.0 \text{ lb/hr per dryer}$ $E_{\text{dryers}} = (11.0 \text{ lb/hr}) * (2 \text{ dryers})$ $E_{\text{dryers}} = 22.1 \text{ lb/hr from dryers}$ $E_{\text{dryers}} = (22.1 \text{ lb/hr}) * (24 \text{ hr/day})$ $E_{\text{dryers}} = 529.2 \text{ lb/day}$	
Emissions of NO_x from Boiler (ID No. ES-10)		
NO _x emission factor	0.159 lb/MMBtu	Worse-case emission factor for NO _x from process fats. The value was derived from stack testing in 2/2001 on a 50 MMBtu/hr boiler at a different facility.
Maximum Permitted Heat Input	8.4 MMBtu/hr	Proposed value.
NO _x emissions	$E_{\text{boiler}} = (0.159 \text{ lb/MMBtu/hr}) * (8.4 \text{ MMBtu/hr})$ $E_{\text{boiler}} = 1.3 \text{ lb/hr}$ $E_{\text{boiler}} = (1.3 \text{ lb/hr}) * (24 \text{ hr/day})$ $E_{\text{boiler}} = 32.1 \text{ lb/day}$	
Facility-Wide Emissions of NO_x		
NO _x emissions	$E_{\text{total}} = E_{\text{dryers}} + E_{\text{boiler}}$ $E_{\text{total}} = 529.2 \text{ lb/day} + 32.1 \text{ lb/day}$ $E_{\text{total}} = 561.3 \text{ lb.day}$	

Since facility-wide emissions of NO_x exceed 560 lb/day, the boiler (ID No. ES-10) is subject to 15A NCAC 02D .1407. This rule requires annual tune-ups on boilers with a maximum heat input rate of less than or equal to 50 MMBtu/hr in accordance with 15A NCAC 02D .1414. Bakery Feeds also must maintain records of all tune-ups as required by 15A NCAC 02D .1404. No changes to the recordkeeping, monitoring, or reporting requirements are needed under this permit renewal. Continued compliance with these requirements is anticipated.

- **15A NCAC 02D .1806: Control and Prohibition of Odorous Emissions –**
This condition is applicable facility-wide and is state enforceable only. The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary. This condition also contains requirements beyond the standard permit condition as follows: At a minimum, the Permittee shall take the following precautions to control nuisance odors: i. wash truck trailer interiors immediately after unloading and before they are moved to a staging or parking area, ii. immediately clean up spilled or leaked materials, and iii. implement adequate operational and housekeeping procedures. These additional requirements will be retained under this permit renewal. Continued compliance is anticipated.
- **15A NCAC 02Q .0317: Avoidance Conditions –**
The facility has taken an avoidance condition for VOC emissions under 15A NCAC 02D .0531, Sources in Nonattainment Areas. The rotary dryers (ID Nos. ES-2 and ES-4) shall emit less than 100 tons of VOC per consecutive 12-month period per line. See Section 8 below for details under Nonattainment Area-New Source Review (NAA-NSR).

Bakery Feeds also taken an avoidance condition to exempt boiler (ID No. ES-10) from “NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources” 40 CFR Part 63, Subpart JJJJJ.

Pursuant to 40 CFR 63.11195(e) and 40 CFR 63.11237, this gas-fired boiler by definition avoids applicability of this rule by operating as follows:

- i. Gaseous-fuels are not combined with any solid fuels.
- ii. Liquid fuels are burned only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel.
- iii. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

Continued compliance is anticipated.

- 15A NCAC 02Q .0711: Emission Rates Requiring a Permit –The facility is subject for benzo(a)pyrene and n-hexane. See Section 9 for further discussion regarding air toxics.

8. NSPS, NESHAP/MACT, NSR/NAA/PSD, 112(r), RACT, CAM

New Source Performance Standards (NSPS)

“Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units,” 40 CFR Part 60, Subpart Dc applies to boilers that are constructed, modified, or reconstructed after June 9, 1989, and have a maximum design heat input capacity ≥ 10 MMBtu/hr and < 100 MMBtu/hr. The boiler (ID No. ES-10) with a maximum rated heat input of 8.4 MMBtu/hr has a maximum design heat input capacity of less than 10 MMBtu/hr, and therefore, it is not subject to NSPS Subpart Dc.

The permit review for Air Permit No. 08194T11 discussed the facility’s applicability to 40 CFR 60, Subpart CCCC, NSPS for Commercial and Institutional Solid Waste Incineration (CISWI) Units. The DAQ concluded that the facility was not applicable to NSPS Subpart CCCC. As indicated in the permit review,³ the NC Division of Waste Management (DWM) determined saleable fats are not considered “solid waste.” This determination is based on a request submitted by the DAQ on behalf of the previously named Valley Protein’s Carolina By-Products’ Fayetteville plant on February 23, 2010. The request addressed each of the ten factors listed in DAQ’s CISWI guidance memorandum⁴ dated September 28, 2009. The DWM concluded; *“As long as the management of this material is consistent with the description in this document, [DWM] agree[s] that the material is not a waste.”* The processed-fats fuel for Bakery Feeds is consistent with description of saleable fats in the determination and therefore, is not considered a waste.

NESHAP (National Emission Standards for Hazardous Air Pollutants)/ MACT (Maximum Achievable Control Technology)

Bakery Feeds is a minor source of hazardous air pollutants (HAPs).

On March 21, 2011, the US EPA issued the “NESHAP for Industrial, Commercial, and Institutional Boilers Area Source Rule,” 40 CFR Part 63 Subpart JJJJJ (6J). The rule provides for the use of generally available control technologies (GACT) or management practices by area sources (less than 10/25 tons per year of HAP emissions) to reduce HAP emissions. GACT Subpart 6J covers boilers burning oil and other liquid and solid fuels to produce steam or hot water for energy or heat.

Pursuant to 40 CFR 63.11195(e), gas-fired boilers as defined under 40 CFR 63.11237 are not subject to GACT Subpart 6J. The boiler (ID No. ES-10) is considered to be a gas-fired boiler and can only burn LSD fuel or processed fats under certain conditions as specified in 40 CFR 63.11237 and in the Section 7 Avoidance of GACT 6J discussion above.

³ Permit review for Air Permit No. 08194T11 issued on December 7, 2011 (9000169.10B).

⁴ <https://www.deq.nc.gov/water-quality/chemistry-lab/certification/memos/ciswi-determination-valley-proteins/download>

The permit includes an avoidance condition for GACT 6J with the definitions under 40 CFR 63.11237 and associated recordkeeping/reporting to ensure the boiler will be compliant. Continued compliance is anticipated.

PSD NSR

The attainment status of Union County has changed over the years, and as a result, the permitting of this facility with respect to PSD and Nonattainment Area New Source Review (NAA NSR) rules is complicated. The permitting history and current status are provided below in this section.

NAA NSR

Union County was previously classified as a moderate nonattainment area for the 1997 8-hour ozone standard, and facilities in the county were governed by Nonattainment Area New Source Review (NAA NSR) rules under 15A NCAC 02D .0531. A facility in a nonattainment area is considered a major stationary source if its potential to emit exceeds 100 tons per year of criteria pollutants.

Prior to the issuance of Air Permit No. 08194R05 on February 28, 2005, Bakery Feeds operated with a VOC emission limit of 100 tons per year to avoid Title V applicability. This limit also allowed the facility to be classified as minor for NSR.

Bakery Feeds requested to add a second processing line (ID No. ES-4) and to remove the synthetic minor limit thus becoming Title V with the issuance of Air Permit No. 08194R05. Bakery Feeds also accepted an emission limit of 100 tons per year on the second processing line (ID No. ES-4) to avoid being subject to NAA NSR under 15A NCAC 02D .0531. Further, the facility was previously considered an existing major stationary source under NAA NSR since the potential to emit for VOCs was in excess of 100 tons per year in a nonattainment area.

Since this avoidance limit for VOCs was obtained when Union County was nonattainment, these limits cannot be removed from the permit. No change to NSR avoidance conditions was required, and continued compliance is anticipated.

The “Charlotte Area” of North Carolina consisting of Mecklenburg County in its entirety and portions of Cabarrus, Gaston, Iredell, Lincoln, Rowan and Union Counties in the 2008 8-hour ozone nonattainment area was re-designated as attainment effective August 27, 2015.⁵ As a result, Bakery Feeds was considered a minor source for PSD since it had accepted avoidance conditions that limit VOC emissions to less than 250 tons per year. This permit renewal does not affect the PSD status of the facility.

RACT

Bakery Feeds is located in an area previously classified as moderate nonattainment for ozone as noted above. When Union County was in nonattainment, Bakery Feeds became subject to RACT requirements since the facility has the potential to emit more than 100 tons per year of VOC. In accordance with 15A NCAC 02D .0902(g), if a county is later designated in 40 CFR 81.334 as attainment and becomes a maintenance area for the 1997 8-hour ozone standard, then all sources in that county subject to RACT must continue to comply with the RACT requirements. Thus, the RACT requirements incorporated into the permit remain applicable even though Union County has been designated in attainment/maintenance. No changed to the permit conditions are required under this permit renewal. RACT requirements for Bakery Feeds are discussed in this section.

Dryers

Since the bread and baked goods are not produced at this facility, Bakery Feeds does not meet the definition of a “Commercial Bakery,” pursuant to 15A NCAC 02D .0957.

⁵ Federal Register /Vol. 80, No. 144 /Tuesday, July 28, 2015 /Rules and Regulations

Instead, the facility underwent an analysis for case-by-case RACT for VOCs. The DAQ determined that the VOC RACT for Bakery Feeds was no additional control due to economic infeasibility. The RACT of “no additional controls for VOCs” was added under Air Permit No. 08194T09 issued on April 15, 2009.⁶

Boiler

Sources that emit less than 15 pounds per day (lb/day) of VOC are exempt from applicability to RACT per 15A NCAC 02D .0902(b). Potential emissions from the boiler were based on the highest emission factor among the permitted fuels to calculate worse-case emissions for the boiler. Potential VOC emissions from the boiler (ID No. ES-10) are 0.09 lb/hr or 2.2 lb/day, based on the emission factor for propane emission.⁷ Therefore, the boiler is not subject to RACT requirements for VOCs.

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in 112(r). This permit renewal does not affect the 112(r) status of the facility.

CAM

40 CFR Part 64, Compliance Assurance Monitoring (CAM), is applicable to any pollutant-specific emission unit (PSEU), if the following three conditions are met:

- The unit is subject to any (non-exempt: e.g. pre-November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- The unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit's pre-control potential emission rate exceeds either 100 tons/yr (for criteria pollutants) or 10/25 tons/yr (for HAPs).
- The cyclones (ID Nos. CD-1 and CD-2) are used to control particulate matter (PM) from the rotary dryers (ID Nos. ES-2 and ES-4) so the applicability of these controls to CAM were reviewed under this permit renewal. The permit review for the 1st Time TV permit⁸ for Bakery Feeds referenced a test performed in April 1998 that indicated the total product recovered by these cyclones was 1,355 lb/hr. Although no speciation data was provided at that time, the permit review indicated “the vast majority of the recovered product is larger than particulate matter with a diameter of 10 micrometers or less (PM10). Pre-control PM10 emissions are expected to be much less than 100 tpy.”

During the prior TV permit renewal process, Bakery Feeds was asked to verify the assumption that pre-controlled PM10 emission to the cyclones are less than 100 tons per year. In an e-mail dated August 16, 2017, Jon Elrod of Darling Ingredients Inc. stated the following:

Bakery Feeds does not have any size speciation studies of particulate matter (PM) going into the cyclones. Due to industry knowledge, Bakery Feeds can continue to assert that the size of filterable product PM recovered in the cyclones is well above 10 microns; ... The product PM removed by the cyclones is insignificant for PM10 and certainly less than 100 tons per year of PM10.

Since the pre-controlled emissions of PM10 are expected to be less than 100 tpy, the cyclones are not subject to CAM.

⁶ Permit review for Air Permit No. 08194T09 issued on April 15, 2009 (9000169.08A)

⁷ Bakery Feed used emission factors for propane/butane in US EPA's AP-42, Chapter 1.5, Table 1.1-5 (2008)

⁸ Permit review for Air Permit No. 08194T08 issued on August 7, 2008 (9000169.06A)

Another reason these cyclones are not subject to CAM is because of their function at the facility. Bakery Feeds contends the primary purpose of the cyclones is product recovery. If the cyclones were not functioning, the drying process would have to shut down, and the facility could not make products. Bakery Feeds considers the cyclones to be inherent to the process. 40 CFR Part 64.1 defines inherent process equipment as follows:

Inherent process equipment means equipment that is necessary for the proper or safe functioning of the process, or material recovery equipment that the owner or operator documents is installed and operated primarily for purposes other than compliance with air pollution regulations. Equipment that must be operated at an efficiency higher than that achieved during normal process operations in order to comply with the applicable emission limitation or standard is not inherent process equipment. For the purposes of this part, inherent process equipment is not considered a control device.

For the reasons noted above, the cyclones are considered inherent process equipment for the purposes of CAM; therefore, they are not subject to CAM. This definition is applicable only for CAM. The cyclones are considered control devices for all other permitting purposes including compliance with 02D .0515.

9. Facility-wide Air Toxics

As described in the permit review for the addition of the boilers under Air Permit No. 08194T11,⁹ any combustion source added or modified as of July 10, 2010, triggers toxics if there is a net emissions increase. Further, the required toxics evaluation must include all existing combustion sources, along with all other sources that emit a common pollutant. The addition of the two boilers (ID Nos. ES-8 and ES-9) to the air quality permit in 2011 triggered a facility-wide air toxics evaluation that also included the two rotary dryers (ID Nos. ES-2 and ES-4).

The evaluation showed ten toxic air pollutants (TAPs) associated with those two boilers and rotary dryers exceeded the toxic permitting emission rate (TPER). The TAPs were acrolein, formaldehyde, hydrogen chloride, chlorine, fluoride, manganese, arsenic, benzene, beryllium, and cadmium.

Bakery Feeds performed modeling to demonstrate compliance with NC air toxics, and emission limits for these TAPs are provided in the table below.

Toxic Air Pollutant	Emission Limits for <u>Each</u> Rotary Dryer (ES-2 and ES-4)	Total Emission Limits for <u>Both</u> Boilers (ES-8 and ES-9) Combined
Acrolein	0.088 lb/hr	--
Arsenic	3.27 lb/yr	0.748 lb/yr
Benzene	624 lb/yr	4.16 lb/yr
Beryllium	0.164 lb/yr	0.005 lb/yr
Cadmium	0.609 lb/yr	0.962 lb/yr
Chlorine	0.000174 lb/hr 0.00418 lb/24-hr	--
Fluorides	--	0.0177 lb/hr 0.426 lb/24-hr
Formaldehyde	0.0968 lb/hr	0.0228 lb/hr
Hydrochloric Acid	0.418 lb/hr	--
Manganese	0.845 lb/24-hr	0.0096 lb/24-hr

⁹ Permit review for Air Permit No. 08194T11 issued on December 7, 2011 (9000169.10B).

The permitted TAP limits for boilers (ID Nos. ES-8 and ES-9) were removed under Air Permit No. 08194T15 issued on September 14, 2022, since those boilers were removed from the permit at that time. Additionally, a new boiler (ID No. ES-10) was added during that minor permit modification (08194T15) and was placed in the same location as the existing boiler (ID No. ES-7) that it replaced. Because both boilers were the same size and fired the same fuels, no change in the ambient air concentration was expected. Given the large margin of compliance with the AALs (*see Table 5 of the 9000169.22B review¹⁰ for more details*), the small emissions (i.e., <50% of the modeled emissions) from the new boiler (ID No. ES-10) and its location at the facility, emissions from the new boiler (ID No. ES-10) were not expected to result in an exceedance of the AAL for formaldehyde or arsenic. DAQ concurred that no additional air dispersion modeling was required for that modification. No monitoring, reporting, or recordkeeping was required to demonstrate compliance with NC Air Toxics. Emissions of benzo-a-pyrene and n-hexane did not exceed their respective TPERs at that time of Permit No. 08194T15 issuance. These TAPs remain in the permit with TPER limits under 15A NCAC 02Q .0711. No changes to the permit are required, and continued compliance is anticipated because there has been no other operational change nor TAP emission level change increase that permit modification time.

10. Facility Emissions Review

The facility-wide potential emissions will not change under this TV permit renewal. Actual emissions from Bakery Feeds from 2019 to 2023 are reported in the 1st page header of this permit review.

11. Compliance Status

Afroze Fatima of the Mooresville Regional Office (MRO) conducted the most recent inspection on November 7, 2024. The facility was observed to be in apparent compliance during the inspection.

The five-year compliance history for the facility is provided as follows:

- A Notice of Violation (NOV) was issued on July 20, 2022, for a late emission inventory.
- An NOV was issued on July 10, 2018, for a late emission inventory.

All NOVs have been resolved.

12. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to people on the Title V mailing list and EPA.

Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. South Carolina and Mecklenburg County are affected areas within 50 miles of this facility. Consistent with the current NC permitting policy notice shall be provided to all local programs in NC and all contiguous states regardless of their status as an affected state under 02Q .0522.

¹⁰ Permit review for Air Permit No. 08194T15 issued on September 14, 2022 (9000169.22B).

13. Removal of Emergency Affirmative Defense Provisions (General Condition J.)

EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions¹¹.

Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses¹² and will harmonize the EPA's treatment of affirmative defenses across different CAA programs.

As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

Regarding NC DAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J. DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance per EPA. Hence GC J will be removed from the revised permit.

14. Other Regulatory Considerations

- No P.E. seal is required for these applications.
- No zoning consistency determination is required for these applications.
- No application fee is required for these applications.

15. Recommendations

The permit renewal application for Darling Ingredients Inc. dba Bakery Feeds located in Marshville, Union County, NC has been reviewed by DAQ to determine compliance with all requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 08194T16 upon completion of public notice and EPA review periods.

¹¹ NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

¹² In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).