

September 22, 2022

Mr. Bill McMurtry
Darling Ingredients, Inc.
PO Box 1608
Turlock, CA 95381

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
Facility Number: N-2107
Project Number: N-1201629

Dear Mr. McMurtry:


Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The proposed project is to modify existing animal rendering operations under permits N-2107-5, '-9, '-13, '-14 and '-15.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Nick Peirce, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,



Brian Clements
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email
cc: Laura Yannayon, EPA (w/enclosure) via EPS

Samir Sheikh
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Modification to Animal Rendering Operation

Facility Name:	Darling Ingredients Inc.	Date:	September 13, 2022
Mailing Address:	PO Box 1608 Turlock, CA 95381	Engineer:	Jag Kahlon
Contact Person:	Bill McMurtry	Lead Engineer:	James Harader
Telephone:	(972) 281-4409		
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Application #(s):	N-2107-5-9, '-9-19, '-12-6, '13-8, '-14-2 and '-15-2		
Project #:	N-1201629		
Deemed Complete:	January 7, 2021		

I. Proposal

N-2107-5: Raw material receiving and grinding operation

Darling Ingredients Inc. (referred herein after "Darling") has proposed the following changes to this permit:

- Install a new separate raw material grinder and pump to move raw material from a reworked existing pit to the new cooker (under permit N-2107-9); and
- Increase total facility raw material process rates from 1,650,000 lb/day (825 tons/day) to 1,850,000 lb/day (925 tons/day) and 602,250,000 lb/year (301,125 tons/yr) to 675,250,000 lb/yr (337,625 tons/yr)

N-2107-9: Food processing by-product recycling operation

Darling has proposed the following changes to this permit:

- Replace three existing steam-operated Dupps 'batch' cookers (preheaters) with a Dupps Model 200U steam-operated continuous cooker, a new air-cooled condenser, and supporting equipment including 2 presses, a closed entrainment trap and fat screen, and a new centrifuge to support the new cooker. The new cooker will be located in the main processing building in the space vacated by three batch cookers. The three batch cookers have a combined average processing rate of 13,500 lb/hr, whereas, the replacement continuous cooker could process up to 25,000 lb/hr;
- The existing HAARSLEV 2564 cooker is supported by 3 presses and 2 centrifuges; an additional press will be added to support the fat and protein species segregation;

- Darling currently uses a venturi scrubber and a regenerative thermal oxidizer (RTO) to treat the exhaust stream from permit units N-2107-9 and '-14. As part of this project, Darling is proposing to upgrade this system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emissions control;
- Install two new 15,000-gallon day tanks to store fatty material discharged by the processes. These tanks are exempt from District permit requirements, per section 6.6.5 of District Rule 2020.
- Refurbish the existing three-chamber RTO unit to upgrade the valve system for exchanging air between the chambers
- Increase total facility raw material process rates from 1,650,000 lb/day (825 tons/day) to 1,850,000 lb/day (925 tons/day) and 602,250,000 lb/year (301,125 tons/yr) to 675,250,000 lb/yr (337,625 tons/yr)

N-2107-12: Protein meal finishing and load out operation

Darling has proposed to construct a species segregation enclosed drag line for delivery of protein to a species segregation operation including the following new units: curing bin, a new hammer mill, a new screen, bucket elevator, 400-ton storage/loadout bin (silo), and a loadout building. The new screen will be served by an aspirator (i.e., a cyclone with bag filter), which will vent inside the existing building.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

Darling has proposed to update the existing PM10 emission factor from "0.0076 lb/MMBtu" to "0.003 lb/MMBtu" for natural gas combustion. The proposed PM10 emission factor has been considered to be a generally accepted emission factor for a natural gas-fired boiler since June 2014. No physical changes are proposed to this unit. Per District Policy APR-1110 (4/29/04), use of a revised generally accepted emissions factor is an administrative action and does not have District Rule 2201 implications (e.g., does not trigger Best Available Control Technology (BACT), Offsets, public notice, etc.).

N-2107-14: Feather Recycling Operation

- Increase total facility raw material process rates from 1,650,000 lb/day (825 tons/day) to 1,850,000 lb/day (925 tons/day) and 602,250,000 lb/year (301,125 tons/yr) to 675,250,000 lb/yr (337,625 tons/yr)
- Darling currently uses a venturi scrubber and an RTO to treat the exhaust stream from permit units N-2107-9 and '-14. As part of this project, Darling is proposing to upgrade this system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emissions control.

N-2107-15: 48 MMBtu/hr boiler with SCR system

Darling Ingredients, Inc. has proposed to update the existing PM10 emission factor from “0.0076 lb/MMBtu” to “0.003 lb/MMBtu” for natural gas combustion. The proposed PM10 emission factor has been considered to be a generally accepted emission factor for a natural gas-fired boiler since June 2014. No physical changes are proposed to this unit. Per District Policy APR-1110 (4/29/04), use of a revised generally accepted emissions factor is an administrative action and does not have District Rule 2201 implications (e.g., does not trigger BACT, Offsets, public notice, etc.).

In addition, the company is proposing to abandon the use of liquid fuel during natural gas curtailment period. Therefore, all requirements related to liquid fuel use will be removed from the permit.

Darling received their renewed Title V Permit on August 17, 2017. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Darling has applied to administratively amend their Title V permit to incorporate the permits under this project.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4104	Reduction of Animal Matter (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4202	Particulate Matter – Emission Rate (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4304	Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters (10/19/95)
Rule 4305	Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)
Rule 4306	Boilers, Steam Generators, and Process Heaters – Phase 3 (12/17/20)
Rule 4309	Dryers, Dehydrators, and Ovens (12/15/05)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12/17/20)
Rule 4351	Boilers, Steam Generators, and Process Heaters – Phase 1 (8/21/03)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)	
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines	

III. Project Location

The facility is located at 11946 Carpenter Rd, Crows Landing, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

N-2107-5: Raw material receiving and grinding operation

Animal raw materials (raw material) are transported by truck from local slaughterhouses and other sources to the receiving area, which is located outdoors. The raw material is conveyed to grinders where it is ground and chopped into uniform size pieces. The ground material is then introduced into the cookers.

N-2107-9: Food processing by-product recycling operation

Currently, the ground meat meal is fed into three steam-heated pre-cookers, and then into a Haarslev steam-heated cooker. The cooker evaporates water from the raw animal material, while separating the fats and tallow. The remaining material, after separating the fats and tallow, is called meat and bone meal. Vapors from the pre-cookers and the steam heated cooker are routed to an air-cooled condenser, a venturi scrubber, and then to a 3.0 MMBtu/hr regenerative thermal oxidizer, connected in series.

As part of the proposed project, Darling will remove three steam-heated batch pre-cookers and replace them with a Dupps Model 200U steam-operated continuous cooker and associated support equipment. In addition, Darling is proposing to install two new venturi scrubbers and two new packed bed scrubbers as a pre-treatment system ahead of the existing venturi scrubber and the RTO serving permit units N-2107-9 and '-14 to achieve additional emissions control.

N-2107-12: Protein meal finishing and load out operation

Currently, feathers and meat and bone meal each have dedicated finishing and loadout equipment. The finishing area for the meat and bone meal utilizes sizing and screening equipment to finish the meat and bone meal. The feather meal operation utilizes a separate, dedicated screening and sizing system.

The applicant has proposed to construct a species segregation enclosed drag line conveyor including a curing bin, a new hammer mill, a new screen, bucket elevator, 400-ton storage/loadout bin (silo), and a loadout building. The new screen will be served by an aspirator (i.e., a cyclone with bag filter); this system will vent inside the building.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

Boilers are used to supply steam to various processes conducted at the site. The applicant has proposed to reduce PM10 emissions from each boiler.

N-2107-14: Feather Recycling Operation

Raw feathers are delivered to a receiving hopper inside the receiving building. The feathers are then moved from the receiving hopper to the continuous hydrolyzer via a screw conveyor. The raw feathers are fed into a steam-heated continuous hydrolyzer (20,000 lb/hr maximum capacity). The hydrolyzed feathers pass through a "Pop Tank" where the solids are separated from the vapors (flash evaporation). The solids leaving the "Pop Tank" are moved to a screw press for dewatering and then to a steam-heated dryer. Out of the dryer, the solids are screened and ground before being pneumatically conveyed into an existing storage silo (N-2107-12), pending shipment to customers. The vapors from the pop tank pass through a water spray chamber for cooling, prior to being delivered to an air-cooled condenser. The non-condensable gasses from the feather meal operations are routed to the existing RTO. Poultry blood is segregated and processed with the feathers. The blood is segregated, coagulated in a blood tank, centrifuged in a controlled system, and fed into the steam-heated dryer. Darling has proposed to install two new venturi scrubbers and two new packed bed scrubbers as a pre-treatment system ahead of the existing venturi scrubber and the RTO serving permit units N-2107-9 and '-14 to achieve additional emissions control.

V. Equipment Listing

Pre-Project Equipment Description:

- N-2107-5-8: A RAW MATERIAL RECEIVING OPERATION EQUIPPED WITH OUTDOOR RAW MATERIAL RECEIVING CONCRETE SLABS, GRINDING SYSTEM, AND PRIMARY AND SECONDARY WASTEWATER TREATMENT SYSTEM WITH DAF UNIT AND AN OUTDOOR WASTEWATER LAGOON SYSTEM (PERMIT EXEMPT LOW EMITTING UNIT)
- N-2107-9-18: FOOD PROCESSING BYPRODUCT RECYCLING OPERATION INCLUDING THREE DUPPS PRE-HEAT COOKERS, A HAARSLEV 2564 COOKER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-14-0)
- N-2107-12-5: PROTEIN MEAL FINISHING AND LOADOUT OPERATION WITH ONE DRAG LINE CONVEYOR, ONE 104 TON STORAGE/LOADOUT BIN, THREE 84 TON STORAGE/LOADOUT BINS, ONE 450 TON STORAGE/LOADOUT BIN, CRAX RECEIVING, THREE HAMMERMILLS, THREE SCREENS, AND A LOADOUT BUILDING WITH VERTILOK STORAGE/LOADOUT BINS
- N-2107-13-7: 76.93 MMBTU/HR NEBRASKA MODEL NS-E-57 NATURAL GAS-FIRED BOILER EQUIPPED WITH A FLUE GAS RECIRCULATION (FGR) SYSTEM AND AMMONIA SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM
- N-2107-14-1: FEATHER RECYCLING OPERATION CONSISTING OF AN INDOOR FEATHER RECEIVING HOPPER, A STEAM-FIRED CONTINUOUS FEATHER HYDROLYZER, A FEATHER PRESS, A STEAM-FIRED FEATHER DRYER, A BLOOD STAGING TANK, BLOOD CENTRIFUGE, SPRAY CHAMBER AND AIR

COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-9-17)

N-2107-15-1: 48 MMBTU/HR BABCOCK & WILCOX MODEL FMO-40 NATURAL GAS, DENATURED YELLOW GREASE, OR YELLOW GREASE-FIRED BOILER WITH A TODD MODEL V4851GO LOW-NOX BURNER, A FLUE GAS RECIRCULATION SYSTEM (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

Proposed Modification:

N-2107-5-9: MODIFICATION OF A RAW MATERIAL RECEIVING OPERATION EQUIPPED WITH OUTDOOR RAW MATERIAL RECEIVING CONCRETE SLABS, GRINDING SYSTEM, AND PRIMARY AND SECONDARY WASTEWATER TREATMENT SYSTEM WITH DAF UNIT AND AN OUTDOOR WASTEWATER LAGOON SYSTEM (PERMIT EXEMPT LOW EMITTING UNIT): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY (825 TONS/DAY) TO 1,850,000 LB/DAY (925 TONS/DAY) AND 602,250,000 LB/YEAR (301,125 TONS/YR) TO 675,250,000 LB/YR (337,625 TONS/YR) AND INSTALL A NEW SEPARATE RAW MATERIAL GRINDER AND PUMPS

N-2107-9-19: MODIFICATION OF FOOD PROCESSING BYPRODUCT RECYCLING OPERATION INCLUDING THREE DUPPS PRE-HEAT COOKERS, A HAARSLEV 2564 COOKER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-14-0): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY (825 TONS/DAY) TO 1,850,000 LB/DAY (925 TONS/DAY) AND 602,250,000 LB/YEAR (301,125 TONS/YR) TO 675,250,000 LB/YR (337,625 TONS/YR); REPLACE 3 DUPPS BATCH COOKERS WITH DUPPS MODEL 200U CONTINUOUS COOKER, A NEW AIR-COOLED CONDENSER, AND SUPPORTING EQUIPMENT INCLUDING 2 PRESSES, A CLOSED ENTRAINMENT TRAP AND FAT SCREEN, AND A NEW CENTRIFUGE; UPGRADE THE EXISTING ODOR CONTROL SYSTEM BY INSTALLING TWO SETS OF A VENTURI SCRUBBER AND A PACKED-BED WET SCRUBBER PRIOR TO THE EXISTING RTO AND VENTURI SCRUBBER CONFIGURATION; INSTALL TWO 15,000-GALLON DAY TANKS FOR FAT STORAGE (PERMIT-EXEMPT UNITS); AND TO REFURBISH THE RTO TO UPGRADE ITS VALVE SYSTEM FOR EXCHANGING AIR BETWEEN THE RTO CHAMBERS (NO CHANGE TO RTO EXHAUST AIRFLOW RATE OR HEAT INPUT RATE)

N-2107-12-6: MODIFICATION OF PROTEIN MEAL FINISHING AND LOADOUT OPERATION WITH ONE DRAG LINE CONVEYOR, ONE 104 TON STORAGE/LOADOUT BIN, THREE 84 TON STORAGE/LOADOUT BINS, ONE 450 TON STORAGE/LOADOUT BIN, CRAX RECEIVING, THREE HAMMERMILLS,

THREE SCREENS, AND A LOADOUT BUILDING WITH VERTILOK STORAGE/LOADOUT BINS: TO INSTALL A SPECIES SEGREGATION ENCLOSED MECHANICAL CONVEYANCE FOR DELIVERY OF PROTEIN TO A SPECIES SEGREGATION THE FOLLOWING NEW EQUIPMENT - CURING BIN, A HAMMERMILL, A SCREEN, BUCKET ELEVATOR, 400-TON STORAGE/LOADOUT BIN WITH BIN VENT FILTRATION SYSTEM, AND A NEW LOADOUT BUILDING. THE NEW HAMMERMILL AND SCREEN SYSTEM WILL BE SERVED BY AN ASPIRATOR CONNECTED TO A CYCLONE DISCHARGE ROUTED THROUGH A BAG FILTER INSIDE THE BUILDING

N-2107-13-8: MODIFICATION OF 76.93 MMBTU/HR NEBRASKA MODEL NS-E-57 NATURAL GAS-FIRED BOILER EQUIPPED WITH A FLUE GAS RECIRCULATION (FGR) SYSTEM AND AMMONIA SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM: RE-ESTABLISH PM10 EMISSION FACTOR FROM 0.0076 LB/MMBTU TO 0.003 LB/MMBTU

N-2107-14-2: MODIFICATION OF FEATHER RECYCLING OPERATION CONSISTING OF AN INDOOR FEATHER RECEIVING HOPPER, A STEAM-FIRED CONTINUOUS FEATHER HYDROLYZER, A FEATHER PRESS, A STEAM-FIRED FEATHER DRYER, A BLOOD STAGING TANK, BLOOD CENTRIFUGE, SPRAY CHAMBER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-9-17): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY (825 TONS/DAY) TO 1,850,000 LB/DAY (925 TONS/DAY) AND 602,250,000 LB/YEAR (301,125 TONS/YR) TO 675,250,000 LB/YR (337,625 TONS/YR); UPGRADE THE EXISTING ODOR CONTROL SYSTEM BY INSTALLING TWO SETS OF A VENTURI SCRUBBER AND A PACKED-BED WET SCRUBBER PRIOR TO THE EXISTING RTO AND VENTURI SCRUBBER CONFIGURATION; AND TO REFURBISH THE RTO TO UPGRADE ITS VALVE SYSTEM FOR EXCHANGING AIR BETWEEN THE RTO CHAMBERS (NO CHANGE TO RTO EXHAUST AIRFLOW RATE OR HEAT INPUT RATE)

N-2107-15-2: MODIFICATION OF 48 MMBTU/HR BABCOCK & WILCOX MODEL FMO-40 NATURAL GAS, DENATURED YELLOW GREASE, OR YELLOW GREASE-FIRED BOILER WITH A TODD MODEL V4851GO LOW-NOX BURNER, A FLUE GAS RECIRCULATION SYSTEM (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM: RE-ESTABLISH PM10 EMISSION FACTOR FROM 0.0076 LB/MMBTU TO 0.0029 LB/MMBTU, AND TO ELIMINATE THE USE OF LIQUID FUEL DURING NATURAL GAS FUEL CURTAILMENT

Post-Project Equipment Description:

N-2107-5-9: A RAW MATERIAL RECEIVING OPERATION EQUIPPED WITH OUTDOOR RAW MATERIAL RECEIVING CONCRETE SLABS, GRINDING SYSTEM, AND PRIMARY AND SECONDARY WASTEWATER TREATMENT SYSTEM WITH DAF UNIT AND AN OUTDOOR WASTEWATER LAGOON SYSTEM (PERMIT EXEMPT LOW EMITTING UNIT)

- N-2107-9-19: FOOD PROCESSING BYPRODUCT RECYCLING OPERATION INCLUDING DUPPS MODEL 200U CONTINUOUS COOKER, AN AIR COOLED CONDENSER AND SUPPORTING EQUIPMENT INCLUDING 2 PRESSES, A CLOSED ENTRAINMENT TRAP AND FAT SCREEN, AND A NEW CENTRIFUGE; A HAARSLEV 2564 COOKER AND AIR COOLED CONDENSER; VAPORS FROM AIR COOLED CONDENSERS SERVICING COOKERS ARE ROUTED THROUGH TWO SETS OF A VENTURI SCRUBBER AND A PACKED BED SCRUBBER PRIOR TO BEING ROUTED INTO AN OLD VENTURI SCRUBBER AND 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) (CONTROL SYSTEM SHARED WITH PERMIT UNIT N-2107-14)
- N-2107-12-6: PROTEIN MEAL FINISHING AND LOADOUT OPERATION WITH ONE DRAG LINE CONVEYOR, ONE 104 TON STORAGE/LOADOUT BIN, THREE 84 TON STORAGE/LOADOUT BINS, ONE 450 TON STORAGE/LOADOUT BIN, CRAX RECEIVING, THREE HAMMERMILLS, THREE SCREENS, AND A LOADOUT BUILDING WITH VERTILOK STORAGE/LOADOUT BINS; ANOTHER ENCLOSED MECHANICAL CONVEYANCE LINE CONVEYOR WITH A CURING BIN, A HAMMERMILL AND SCREEN SYSTEM SERVED BY AN ASPIRATOR CONNECTED TO A CYCLONE DISCHARGE ROUTED THROUGH A BAG FILTER INSIDE THE BUILDING, BUCKET ELEVATOR, A 400-TON STORAGE/LOADOUT BIN WITH BIN VENT FILTRATION SYSTEM, AND A LOADOUT BUILDING.
- N-2107-13-8: 76.93 MMBTU/HR NEBRASKA MODEL NS-E-57 WATER-TUBE NATURAL GAS-FIRED BOILER EQUIPPED WITH A FLUE GAS RECIRCULATION (FGR) SYSTEM AND AMMONIA SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM
- N-2107-14-2: FEATHER RECYCLING OPERATION CONSISTING OF AN INDOOR FEATHER RECEIVING HOPPER, A STEAM-FIRED CONTINUOUS FEATHER HYDROLYZER, A FEATHER PRESS, A STEAM-FIRED FEATHER DRYER, A BLOOD STAGING TANK, BLOOD CENTRIFUGE, SPRAY CHAMBER AND AIR COOLED CONDENSER SERVED BY TWO SETS OF A VENTURI SCRUBBER AND A PACKED-BED WET SCRUBBER PRIOR TO BEING ROUTED INTO AN OLD VENTURI SCRUBBER AND 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) (CONTROL SYSTEM SHARED WITH PERMIT UNIT N-2107-14)
- N-2107-15-2: 48 MMBTU/HR BABCOCK & WILCOX MODEL FMO-40 WATER-TUBE NATURAL GAS -FIRED BOILER WITH A TODD MODEL V4851GO LOW-NOX BURNER, A FLUE GAS RECIRCULATION SYSTEM (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

VI. Emission Control Technology Evaluation

N-2107-5: Raw material receiving and grinding operation

Currently, Darling is required to use Best Management Practices (BMPs) during raw material receiving and grinding operation, all to minimize odors/nuisance from their site. These practically enforceable BMPs include the following items:

- Raw material receiving and storage areas and their associated pits and bins are required to be kept clean and free from spillage of raw or finished materials, refuse, and standing pools of water;
- Storage of raw materials outside of the pits, bins, or on open slab area is prohibited;
- Clean raw material receiving area daily when they do not hold raw materials;
- Limit delivery truck holding time to not exceed 48 hours, and animal mortality holding time to not exceed 96 hours from the time the raw material enter their property;
- All raw material trucks shall be maintained in condition to prevent leakage of any solid or liquid material;
- All trucks and truck tires delivering raw material shall be washed clean of raw material residue prior to exiting the facility premises; and
- Rendering plant shall not be operated unless odor control system is operating and is in full use.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

Currently, Darling vents the exhaust from the cookers and hydrolyzers through air cooled condenser to knock-out the condensable vapors. The exhaust stream (non-condensable vapors) is routed to a venturi scrubber and an RTO system. As part of this project, Darling is proposing to upgrade this system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emissions control. This system is expected to reduce odors, volatile organic compounds and particulate matter from the rendering operations under these permits.

N-2107-12: Protein meal finishing and load out operation

This operation consists of several enclosed screw conveyors that transfer the material from the finishing area to overhead storage bins. Trucks are loaded with finished meat and bone meal from the overhead bins. Due to the presence of fats and water, the loading process is not expected to generate significant amount of particulate matter emissions; consequently, no control are proposed or required for the loading operation.

A new hammermill and screen system will be served by a aspirator connected to a cyclone and bag filter, the system is expected to reduce at least 99% of particulate matter emissions.

A new 400-ton silo will have bin vent filter system, which is expected to reduce at least 99% of the particulate matter.

The new loadout operation will not have a active dust collection system; however, the transfer is required to be conducted with a loadout spout with sock filter to minimize entrainment of particulate matter into the atmosphere. As stated previously, the material contains fats and water, therefore,

this operation is not expected to generate significant amount of particulate matter emissions (~0.4 lb-PM₁₀/day).

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

Currently, boilers primarily use natural fuel to reduce NO_x, SO_x, PM₁₀, CO and VOC emissions. Each boiler is also equipped with a selective catalytic reduction (SCR). SCR system operates as an external control device where flue gases and a reagent, in this case ammonia, are passed through an appropriate catalyst. Ammonia is injected upstream of the catalyst where it reacts and reduces NO_x, over the catalyst bed, to form elemental nitrogen and other by-products. The use of a catalyst typically reduces the NO_x emissions by up to 90%.

VII. General Calculations

A. Assumptions

- Assumptions will be stated as they are made during the evaluation.

B. Emission Factors

1. Pre-Project Emission Factors (EF1)

N-2107-5-8: Raw material receiving and grinding operation

Since the raw material has a high moisture content (> 6% by weight), it is assumed there are no particulate matter emissions from this operation. This permit includes management practices (e.g., raw materials within 24 hours of entering receiving pit, clean raw material receiving area (pits, bins or open slabs) daily when they're not holding the material, etc.) that requires the company to process raw materials quickly. These practices are expected to reduce product degradation and consequently, are likely minimize the fugitive emissions (if any) from this operation. This permit does not list any emission factors.

N-2107-9-18: Food processing by-product recycling operation

N-2107-14-1: Feather Recycling Operation

The exhaust stream from both permit units are directed into a shared scrubber and RTO system.

Pollutant	EF1		Source
NO _x	0.98 lb/MMBtu of RTO heat input	--	PTO N-2107-9-18 and '-14-1
SO _x	--	0.15 lb/ton of raw material processed	
PM ₁₀	--	0.097 lb/ton of raw material processed	
CO	1.12 lb/MMBtu of RTO heat input	--	
VOC	--	0.03 lb/ton of raw material processed	

N-2107-12-5: Protein meal finishing and load out operation

Per PTO,

EF1 = 0.0025 lb-PM₁₀/ton of protein loaded out

N-2107-13-7: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

Pollutant	EF1		Source
NOx	0.008 lb/MMBtu	7 ppmvd @ 3% O ₂	PTO N-2107-13-7
SOx	0.00285 lb/MMBtu	--	
PM ₁₀	0.003 lb/MMBtu	--	FYI – 328 (6/12/14) & District Policy APR-1110 (4/29/04)
CO	0.073 lb/MMBtu	100 ppmvd @ 3% O ₂	PTO N-2107-13-7
VOC	0.0055 lb/MMBtu	--	
NH ₃	0.0045 lb/MMBtu	10 ppmvd @ 3% O ₂	

N-2107-15-1: 48 MMBtu/hr boiler with SCR system

Pollutant	EF1 (Natural gas Combustion)		Source
NOx (Startup or shutdown)	0.036 lb/MMBtu	30 ppmvd @ 3% O ₂	PTO N-2107-15-1
NOx (steady state)	0.0073 lb/MMBtu	6 ppmvd @ 3% O ₂	
SOx	0.00285 lb/MMBtu	--	
PM ₁₀	0.003 lb/MMBtu	--	FYI – 328 (6/12/14) & District Policy APR-1110 (4/29/04)
CO	0.037 lb/MMBtu	50 ppmvd @ 3% O ₂	PTO N-2107-15-1
VOC	0.0055 lb/MMBtu	--	
NH ₃	0.0045 lb/MMBtu	10 ppmvd @ 3% O ₂	

Pollutant	EF1 (Liquid Fuel Combustion)		Source
NOx	0.052 lb/MMBtu	40 ppmvd @ 3% O ₂	PTO N-2107-15-1
SOx	0.0062 lb/MMBtu	--	
PM ₁₀	0.005 lb/MMBtu	--	
CO	0.1049 lb/MMBtu	142 ppmvd @ 3% O ₂	
VOC	0.0056 lb/MMBtu	--	
NH ₃	--	10 ppmvd @ 3% O ₂	

2. Post-Project Emission Factors (EF2)

N-2107-5-9: Raw material receiving and grinding operation

The applicant is not proposing any changes to the footprint of the existing receiving areas. The new grinder and pump are completely enclosed units and are not expected to generate any emissions.

N-2107-9-19: Food processing by-product recycling operation

N-2107-14-2: Feather Recycling Operation

The exhaust stream from permit unit N-2107-9 and '-14 will be diverted into two new scrubber systems (each system has a venturi scrubber and packed bed scrubber) prior to being discharged into the existing scrubber and RTO system serving both N-2107-9 and '-14.

The applicant claims that the use of additional venturi scrubbers and packed bed scrubbers will additionally reduce PM10 emissions by at least 25%. Thus, the post-project PM10 emission factor would be 0.07275 lb/ton of material [0.097 x (1-0.25)].

Pollutant	EF2		Source
NOx	0.98 lb/MMBtu of RTO heat input	--	PTO N-2107-9-18 and '-14-1
SOx	--	0.15 lb/ton of raw material processed	
PM10	--	0.07275 lb/ton of raw material processed	Applicant's proposal
CO	1.12 lb/MMBtu of RTO heat input	--	PTO N-2107-9-18 and '-14-1
VOC	--	0.03 lb/ton of raw material processed	

N-2107-12-6: Protein meal finishing and load out operation

The applicant is not proposing any changes to the existing emissions from the protein meal finishing and loadout operation. Thus, EF2 will be same as EF1 for the existing equipment.

EF2 = 0.0025 lb-PM₁₀/ton of protein loaded out

The emission factors for the newly proposed equipment are as follows:

New Hammermill:

This hammermill will ground material such as meat and bone meal which contains 48-52% protein, 33-35% ash, 8-12% fat and 4-7% water. The presence of fat and water is expected to reduce the generation of particulate matter emissions. Further, the hammermill is fully enclosed, and the ground material discharges into a vibratory screen which is connected to a cyclone with a bag filter. Since the densities of bone meal and grains are comparable, a controlled emission factor of 0.012 lb-PM/ton (EPA's AP-42

Table 9.9.1-2 (3/03), hammermill with baghouse for grain processing) will be used to determine the particulate matter emissions from this operation. All PM is assumed to be PM10. The presence of fat and water is presumed to reduce formation of particulate matter by 60%¹.

$$\begin{aligned} \text{EF2} &= (0.012 \text{ lb-PM}_{10}/\text{ton of material processed}) \times (1-0.60) \\ &= 0.0048 \text{ lb-PM}_{10}/\text{ton of material processed} \end{aligned}$$

New Screen:

Screening operation is enclosed and vented to a cyclone with a bag filter. Uncontrolled EF for screening is taken from EPA's AP-42 Table 11.19.2-2 (8/04) for mineral processing operation. The EF is multiplied by dividing densities of bone meal (60 lb/ft³) to crushed stone (102 lb/ft³). The presence of fat and water is presumed to reduce formation of particulate matter by 60%.

$$\begin{aligned} \text{EE2} &= 0.0087 \text{ lb-PM}_{10}/\text{ton} \times (60/102) \times (1-0.99) \times (1-0.60) \\ &= 0.00002 \text{ lb-PM}_{10}/\text{ton of material processed} \end{aligned}$$

New Storage silo:

Screened material will be conveyed to a 400-ton silo with a bin vent filtration system. An uncontrolled EF of 0.0063 lb-PM10/ton (EPA's AP-42 Table 9.9.1-1 (3/03) for storage vent, no control) is used. Densities of bone meal and grains are comparable; therefore, EF is not adjusted. A control effectiveness 99% is used for the bin vent filter system. Further, presence of fat and water is presumed to reduce formation of particulate matter by 60%.

$$\begin{aligned} \text{EF2} &= 0.0063 \text{ lb-PM}_{10}/\text{ton} \times (1-0.99) \times (1-0.60) \\ &= 0.000025 \text{ lb-PM}_{10}/\text{ton of material processed} \end{aligned}$$

New Loadout operation:

The loadout operation is a source of particulate matter emissions. The material will be loaded from silos to a truck trailer, using a loadout spout with sock drop filter into the truck trailer. Since the densities of bone meal and grains are comparable, an uncontrolled EF of 0.0008 lb-PM10/ton (EPA's AP-42 Table 9.9.1-2 (3/03) for feed shipping, no control), along with 60% control since the meat & bone meal will be wetted with liquid fat, will be used to determine the particulate matter emissions from the loadout operation.

$$\begin{aligned} \text{EF2} &= (0.0008 \text{ lb-PM}_{10}/\text{ton of protein loaded out}) \times (1-0.60) \\ &= 0.00032 \text{ lb-PM}_{10}/\text{ton of protein loaded out} \end{aligned}$$

¹ 60% control effectiveness is taken from State of Missouri Department of Natural Resources Permit: 032013-008 (project #2010-06-038), page 9/14 of the permit available at: <https://dnr.mo.gov/env/apcp/permits/docs/triumph-stjoe-2013cp.pdf>

N-2107-13-8: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

Pollutant	EF2		Source
NOx	0.008 lb/MMBtu	7 ppmvd @ 3% O ₂	PTO N-2107-13-7
SOx	0.00285 lb/MMBtu	--	
PM ₁₀	0.003 lb/MMBtu	--	FYI – 328 (6/12/14) & District Policy APR-1110 (4/29/04)
CO	0.073 lb/MMBtu	100 ppmvd @ 3% O ₂	PTO N-2107-13-7
VOC	0.0055 lb/MMBtu	--	
NH ₃	0.0045 lb/MMBtu		

N-2107-15-2: 48 MMBtu/hr boiler with SCR system

The applicant has proposed to not use liquid fuel during natural gas fuel curtailment period. Thus, liquid fuel fired emission factors are not listed here.

Pollutant	EF2		Source
NOx (Startup or shutdown)	0.036 lb/MMBtu	30 ppmvd @ 3% O ₂	PTO N-2107-15-1
NOx (steady state)	0.0073 lb/MMBtu	6 ppmvd @ 3% O ₂	
SOx	0.00285 lb/MMBtu	--	
PM ₁₀	0.0029 lb/MMBtu	--	FYI – 328 (6/12/14) & District Policy APR-1110 (4/29/04)
CO	0.037 lb/MMBtu	50 ppmvd @ 3% O ₂	PTO N-2107-15-1
VOC	0.0055 lb/MMBtu	--	

C. Calculations

1. Pre-Project Potential to Emit (PE1)

N-2107-5-8: Raw material receiving and grinding operation

Per project N-1153157, the potential emissions from this permit unit are equal to zero for all criteria pollutants.

PE1 = 0

N-2107-9-18: Food processing by-product recycling operation

N-2107-14-1: Feather Recycling Operation

The exhaust stream from both permit units is directed into a shared scrubber and RTO system.

NO_x, CO

PE1 (lb/hr) = EF1 (lb/MMBtu) x 3.0 MMBtu/hr

PE1 (lb/day) = EF1 (lb/MMBtu) x 3.0 MMBtu/hr x 24 hr/day

PE1 (lb/yr) = EF1 (lb/MMBtu) x 3.0 MMBtu/hr x 8,760 hr/yr

Pollutant	EF1 (lb/MMBtu)	PE1 (lb/hr)	PE1 (lb/day)	PE1 (lb/yr)
NO _x	0.98	2.94	70.6	25,754
CO	1.12	3.36	80.6	29,434

SO_x, PM₁₀ and VOC:

The permit limit facility's total material process rate to 1,650,000 lb/day (825 tons/day) and 602,250,000 lb/yr (301,125 tons/yr).

PE1 (lb/day) = EF1 (lb/ton of raw material processed) x 825 tons/day

PE1 (lb/yr) = EF1 (lb/ton of raw material processed) x 301,125 tons/yr

Pollutant	EF1 (lb/ton of material)	PE1 (lb/hr)*	PE1 (lb/day)	PE1 (lb/yr)
SO _x	0.15	5.158	123.8	45,169
PM ₁₀	0.097	3.333	80.0	29,209
VOC	0.03	1.033	24.8	9,034

*PE1 (lb/day) ÷ 24 hr/day

N-2107-12-5: Protein meal finishing and load out operation

PTO lists EF and process rate. These parameters are used to estimate the potential emissions from this operation:

PE1 = (0.0025 lb-PM₁₀/ton of protein loaded out) x (1,200 tons/day)
= 3.0 lb-PM₁₀/day

= (0.0025 lb-PM₁₀/ton of protein loaded out) x (1,200 tons/day) x (365 days/yr)
= 1,095 lb-PM₁₀/yr

N-2107-13-7: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

PE1 (lb/hr) = EF1 (lb/MMBtu) x 76.93 MMBtu/hr

PE1 (lb/day) = EF1 (lb/MMBtu) x 76.93 MMBtu/hr x 24 hr/day

PE1 (lb/yr) = EF1 (lb/MMBtu) x 76.93 MMBtu/hr x 8,760 hr/yr

Pollutant	EF1 (lb/MMBtu)	PE1 (lb/hr)	PE1 (lb/day)	PE1 (lb/yr)
NO _x	0.008	0.615	14.8	5,391
SO _x	0.00285	0.219	5.3	1,921
PM ₁₀	0.003	0.231	5.5	2,022
CO	0.073	5.616	134.8	49,195
VOC	0.0055	0.423	10.2	3,706
NH ₃	0.0045	0.346	8.3	3,033

N-2107-15-1: 48 MMBtu/hr boiler with SCR system

Except for PM₁₀ emissions, the potential emissions for this unit are taken from application review under project N-1183661. Note that there is a typo in the PE2 annual summary table for PM₁₀ emissions under project N-1183661.

Pollutant	PE1 (lb/hr)*	PE1 (lb/day)	PE1 (lb/yr)
NO _x	1.813	43.5	4,539
SO _x	0.217	5.2	1,233
**PM ₁₀	0.240	4.4	1,282
CO	3.658	87.8	16,262
VOC	0.263	6.3	2,314
NH ₃	0.217	5.2	1,887

*PE1 (lb/day) ÷ 24 (hr/day);

**PE1 (lb/hr) = 0.005 lb-PM₁₀/MMBtu x 48 MMBtu/hr = 0.240 lb-PM₁₀/hr; PE1 (lb/day) = 0.005 lb-PM₁₀/MMBtu x 0.137 MMBtu/gal x 6,409 gal/day = 4.4 lb-PM₁₀/day; PE1 (lb/yr) = 0.005 lb-PM₁₀/MMBtu x 48 MMBtu/hr x 216 hr/yr + 0.003 lb-PM₁₀/MMBtu x 48 MMBtu/hr x (8,760 – 216) hr/yr = 1,282 lb-PM₁₀/yr.

2. Post-Project Potential to Emit (PE2)

N-2107-5-9: Raw material receiving and grinding operation

Darling is not proposing any changes to the existing receiving areas. Having a continuous cooker will allow Darling to process ‘meat and bone meal’ material at a faster rate. This faster rate is expected to reduce raw material residence time in the bins, pit, and on the concrete slabs; consequently, this should help to reduce fugitive emissions (if any) from this operation. Therefore, PE2 for the existing operation is conservatively set to PE1 for this operation. The new grinder and pump are completely enclosed units and are not expected to generate any emissions. Thus, PE2 is set equal to zero for all criteria pollutants.

PE2 = 0

N-2107-9-19: Food processing by-product recycling operation

N-2107-14-2: Feather Recycling Operation

Various cookers in these operations are served by air cooled condensers to condense the vapors in the exhaust. The non-condensable vapors will be routed to two identical scrubber systems, each with a venturi scrubber and packed bed scrubber, prior to routing the laden stream into the existing venturi scrubber and the RTO, all to reduce odors, VOC and particulate matter emissions.

NO_x, CO

PE2 (lb/hr) = EF2 (lb/MMBtu) x 3.0 MMBtu/hr

PE2 (lb/day) = EF2 (lb/MMBtu) x 3.0 MMBtu/hr x 24 hr/day

PE2 (lb/yr) = EF2 (lb/MMBtu) x 3.0 MMBtu/hr x 8,760 hr/yr

Pollutant	EF2 (lb/MMBtu)	PE2 (lb/hr)	PE2 (lb/day)	PE2 (lb/yr)
NOx	0.98	2.94	70.6	25,754
CO	1.12	3.36	80.6	29,434

SOx, PM₁₀ and VOC:

The applicant has proposed to increase process rate to 1,850,000 lb/day (925 tons/day) and 675,250,000 lb/yr (337,625 tons/yr).

PE2 (lb/day) = EF2 (lb/ton of raw material processed) x 925 tons/day

PE2 (lb/yr) = EF2 (lb/ton of raw material processed) x 337,625 tons/yr

Pollutant	EF2 (lb/ton of material)	PE2 (lb/hr)*	PE2 (lb/day)	PE2 (lb/yr)
SOx	0.15	5.783	138.8	50,644
PM ₁₀	0.07275	2.804	67.3	24,562
VOC	0.03	1.158	27.8	10,129

*PE2 (lb/day) ÷ 24 hr/day

N-2107-12-6: Protein meal finishing and load out operation

The applicant has proposed to construct a species segregation enclosed drag line for delivery of protein to a species segregation units including the following new units: curing bin, a new hammer mill, a new screen, bucket elevator, 400-ton storage/loadout bin (silo), and a loadout building. The new screen will be served by an aspirator (i.e., a cyclone with bag filter) venting inside the main building.

Existing equipment:

The applicant is not proposing to change the existing equipment; therefore, PE2 is equal to PE1.

PE2 = 3.0 lb-PM₁₀/day (1,095 lb-PM₁₀/yr)

New Hammermill:

Per applicant (July 18, 2020 letter), the new hammermill could process up to 5 tons per hour.

PE2 = 0.0048 lb-PM₁₀/ton x 5 tons/hr

= 0.024 lb-PM₁₀/hr

= 0.0048 lb-PM₁₀/ton x 5 tons/hr x 24 hr/day

= 0.6 lb-PM₁₀/day

= 0.0048 lb-PM₁₀/ton x 5 tons/hr x 8,760 hr/yr

= 210 lb-PM₁₀/yr

New Screen:

This screen will process material from the new hammermill. Thus, its process rate could be up to 5 tons/hr, the same as the hammermill. Thus,

$$\begin{aligned} \text{PE2} &= 0.00002 \text{ lb-PM}_{10}/\text{ton of material processed} \times 5 \text{ tons/hr} \\ &= 0.0001 \text{ lb-PM}_{10}/\text{hr} \\ &= 0.00002 \text{ lb-PM}_{10}/\text{ton of material processed} \times 5 \text{ tons/hr} \times 24 \text{ hr/day} \\ &= 0.0 \text{ lb-PM}_{10}/\text{day} \\ &= 0.00002 \text{ lb-PM}_{10}/\text{ton of material processed} \times 5 \text{ tons/hr} \times 8,760 \text{ hr/day} \\ &= 1.0 \text{ lb-PM}_{10}/\text{yr} \end{aligned}$$

New Storage silo:

$$\begin{aligned} \text{PE2} &= 0.000025 \text{ lb-PM}_{10}/\text{ton} \times 5 \text{ tons/hr} \\ &= 0.0001 \text{ lb-PM}_{10}/\text{hr} \\ &= 0.000025 \text{ lb-PM}_{10}/\text{ton} \times 5 \text{ tons/hr} \times 24 \text{ hr/day} \\ &= 0.0 \text{ lb-PM}_{10}/\text{day} \\ &= 0.000025 \text{ lb-PM}_{10}/\text{ton} \times 5 \text{ tons/hr} \times 8,760 \text{ hr/yr} \\ &= 1.0 \text{ lb-PM}_{10}/\text{yr} \end{aligned}$$

New Loadout operation:

Per applicant, loadout rate could be up to 1,200 tons/day. Thus,

$$\begin{aligned} \text{PE2} &= (0.00032 \text{ lb-PM}_{10}/\text{ton of protein loaded out}) \times (1,200 \text{ tons/day}) \times (\text{day}/24 \text{ hr}) \\ &= 0.016 \text{ lb-PM}_{10}/\text{hr} \\ &= (0.00032 \text{ lb-PM}_{10}/\text{ton of protein loaded out}) \times (1,200 \text{ tons/day}) \\ &= 0.4 \text{ lb-PM}_{10}/\text{day} \\ &= (0.00032 \text{ lb-PM}_{10}/\text{ton of protein loaded out}) \times (1,200 \text{ tons/day}) \times (365 \text{ days/yr}) \\ &= 140 \text{ lb-PM}_{10}/\text{yr} \end{aligned}$$

Summary:

The total PM10 emissions from this permit unit are given below. Note that the applicant has proposed to load a total of 1,200 tons/day using both the existing loadout area and new loadout building. The existing equipment PE2 already accounts for new loadout operation; PE2 from new loadout operation is set to zero in the calculations below:

$$\begin{aligned} \text{PE2} &= 3.0 + 0.6 + 0.0 + 0.0 \\ &= 4.0 \text{ lb-PM}_{10}/\text{day} \end{aligned}$$

$$\begin{aligned} \text{PE2} &= 1,095 + 210 + 1 + 0 \\ &= 1,306 \text{ lb-PM}_{10}/\text{yr} \end{aligned}$$

N-2107-13-8: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

PE2 (lb/hr) = EF2 (lb/MMBtu) x 76.93 MMBtu/hr

PE2 (lb/day) = EF2 (lb/MMBtu) x 76.93 MMBtu/hr x 24 hr/day

PE2 (lb/yr) = EF2 (lb/MMBtu) x 76.93 MMBtu/hr x 8,760 hr/yr

Pollutant	EF2 (lb/MMBtu)	PE2 (lb/hr)	PE2 (lb/day)	PE2 (lb/yr)
NOx	0.008	0.615	14.8	5,391
SOx	0.00285	0.219	5.3	1,921
PM ₁₀	0.003	0.231	5.5	2,022
CO	0.073	5.616	134.8	49,195
VOC	0.0055	0.423	10.2	3,706
NH ₃	0.0045	0.346	8.3	3,033

N-2107-15-2: 48 MMBtu/hr boiler with SCR system

Darling has proposed to not use liquid fuel during curtailment of natural gas fuel. The potential emissions from this boiler would be:

NOx (startup and shutdown)

Startup: 2 hr/day, Shutdown: 2 hr/day, startup and shutdown (total): 730 hr/yr

PE2 (lb/hr) = EF2 lb/MMBtu x 48 MMBtu/hr

PE2 (lb/day) = EF2 lb/MMBtu x 48 MMBtu/hr x 4 hr/day

PE2 (lb/yr) = EF2 lb/MMBtu x 48 MMBtu/hr x 730 hr/yr

NOx (steady state)

PE2 (lb/hr) = EF2 lb/MMBtu x 48 MMBtu/hr

PE2 (lb/day) = EF2 lb/MMBtu x 48 MMBtu/hr x (24 – 4) hr/day

PE2 (lb/yr) = EF2 lb/MMBtu x 48 MMBtu/hr x (8,760 – 730) hr/yr

SOx, PM₁₀, CO and VOC

PE2 (lb/hr) = EF2 lb/MMBtu x 48 MMBtu/hr

PE2 (lb/day) = EF2 lb/MMBtu x 48 MMBtu/hr x 24 hr/day

PE2 (lb/yr) = EF2 lb/MMBtu x 48 MMBtu/hr x 8,760 hr/yr

Pollutant	EF2 (lb/MMBtu)	PE2 (lb/hr)	PE2 (lb/day)	PE2 (lb/yr)
NOx (startup and shutdown)	0.036	1.728	6.9	1,261
NOx (steady state)	0.0073	0.3504	7.0	2,814
Total:		1.728 (max)	13.9	4,075
SOx	0.00285	0.1368	3.3	1,198
PM ₁₀	0.003	0.144	3.5	1,261
CO	0.037	1.776	42.6	15,558
VOC	0.0055	0.264	6.3	2,313
NH ₃	0.0045	0.216	5.2	1,892

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

Note the facility-wide permit N-2107-0-4, condition 43, limits facility-wide PM10 emissions to 29,200 lb/yr.

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-2107-5-8	0	0	0	0	0
N-2107-9-18 & '-14-1	25,754	45,169	29,209	29,434	9,034
N-2107-12-5	0	0	1,095	0	0
N-2107-13-7	5,391	1,921	2,022	49,195	3,706
N-2107-15-1	4,539	1,233	1,282	16,262	2,314
ERC	0	0	0	0	0
SSPE1	35,684	48,323	29,200*	94,891	15,054

*Facility-wide PM₁₀ emission limit

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site. The applicant has proposed to retain the existing facility-wide PM10 emissions limit of 29,200 lb/yr.

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-2107-5-9	0	0	0	0	0
N-2107-9-19 & '-14-2	25,754	50,644	24,562	29,434	10,129
N-2107-12-6	0	0	1,306	0	0
N-2107-13-8	5,391	1,921	2,022	49,195	3,706
N-2107-15-2	4,075	1,198	1,261	15,558	2,313
ERC	0	0	0	0	0
SSPE2	35,220	53,763	29,200*	94,187	16,148

*Facility-wide PM₁₀ emission limit

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	*PM _{2.5}	CO	VOC
SSPE1	35,684	48,323	29,200	29,200	94,891	15,054
SSPE2	35,220	53,763	29,200	29,200	94,187	16,148
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	No	No	No

*PM_{2.5} assumed to be equal to PM₁₀

As seen in the table above, the facility is an existing Major Source for NO_x emissions and will remain a Major Source for NO_x emissions.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase	17.8	7.5	24.2	47.4	14.6	14.6
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

As seen in the table above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

a. BE NO_x

N-2107-5: Raw material receiving and grinding operation

This operation is not a source of NO_x emissions; therefore, it's BE is not determined.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

The exhaust stream from these operations is routed through air cooled condensers to knock out condensable vapors. The remaining non-condensable vapors are discharged into a venturi scrubber prior to being discharged into the 3 MMBtu/hr natural gas fired RTO system. The primary purpose of the RTO is to abate VOC and other odor causing compounds by maintaining the chamber temperature at or above 1400°F. RTO itself is not an emission unit. It just happens to generate collateral NO_x emissions due to the composition of the process exhaust stream vented to it. However, RTO is a part of the operation, total NO_x emissions at it's discharge stack, are being viewed as NO_x emissions from these operations.

The new continuous cooker will process more material than the existing batch cookers on an hourly basis, which means, the new cooker will likely generate more odorous compounds and other compounds including nitrogen bearing compounds (such as amines, ammonia, etc., as noted in meat cooking operations). To abate these compounds, Darling has proposed to install two additional venturi scrubbers (water scrubbers) and two packed bed scrubbers (95% water, 5% proprietary blend of chemicals). Venturi scrubbers are expected to abate particulate matter, sulfates or other large fat particles (as noted in the application) as well as some nitrogen bearing compounds prior to discharging stream into the packed bed scrubbers that selectively target odor causing compounds. Discharge from both packed bed scrubbers will be routed through an existing venturi scrubber and the RTO system. Due to the installation of these additional controls, Darling is not expecting any increase in process nitrogen compounds, and consequently, proposes to retain the existing NO_x emissions rate of 0.98 lb/MMBtu, which equates to 2.94 lb-NO_x/hour at the exhaust of the RTO.

A June 2005 source test conducted by Darling determined the NO_x emissions from these operations at the RTO outlet were 2.91 lb/hr. The permitted NO_x limit at that time was 2.94 lb/hr. The material processing rate was not recorded during the source testing; however, the facility was permitted to process up to 825 tons/day at that time. Note that in a past permitting action, the permitted limit of 2.94 lb-NO_x/hr was divided by 3 MMBtu/hr heat input rate of the RTO to derive emission factor of 0.98 lb-NO_x/MMBtu; this emission factor was listed in permit and appears in the latest Permit to Operate.

The hourly heat input rate to the RTO (3 MMBtu/hr), exhaust air flow rate (~10,000 cfm), chamber temperature (1,400°F), permitted process rate (825 tons/day), and composition of exhaust stream (rendering animal by-products) during years 2018 through 2020 is similar to when the RTO was installed in May 2005. Due to these process similarities, NO_x emissions are expected to be same in years 2018 through 2020, two years prior to the submittal of this application.

Since the NO_x emissions emitted from these operations are more than 80% of permitted NO_x emission rate², the emission units under permits N-2107-9 and N-2107-14 each qualify as a Highly-Utilized Emission Unit, per section 3.22 of Rule 2201. Consequently, the BE is set equal to PE1.

BE = PE1 = 25,754 lb-NO_x/yr

N-2107-12: Protein meal finishing and load out operation

This operation is not a source of NO_x emissions; therefore, it's BE is not determined.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

As stated in the proposal section, updating to a revised generally accepted emission factor is an administrative action and does not have Rule 2201 implications (BACT, offset, public notice, etc.). Thus, no further discussion is required.

b. BE SO_x

As shown in Section VII.C.5 above, the facility is not a major source for SO_x emissions. Therefore, BE=PE1.

N-2107-5: Raw material receiving and grinding operation

This operation is not a source of SO_x emissions; therefore, it's BE is not determined.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

BE = PE1 = 45,169 lb-SO_x/yr

²Per section VII.C.8 below, potential emissions are 25,754 lb-NO_x/yr and baseline actual emissions are 23,606 lb-NO_x/yr. Thus, utilization would be 92% (23,606 lb-NO_x/yr ÷ 25,754 lb-NO_x/yr).

N-2107-12: Protein meal finishing and load out operation

This operation is not a source of SOx emissions; therefore, it's BE is not determined.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

As stated in the proposal section, updating to a revised generally accepted emission factor is an administrative action and does not have Rule 2201 implications (BACT, offset, public notice, etc.). Thus, no further discussion is required.

c. BE PM₁₀

As shown in Section VII.C.5 above, the facility is not a major source for PM₁₀ emissions.

Therefore Baseline Emissions BE=PE1.

N-2107-5: Raw material receiving and grinding operation

This operation is not a source of PM10 emissions; therefore, it's BE is not determined.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

BE = PE1 = 29,200 lb-PM₁₀/yr³

N-2107-12: Protein meal finishing and load out operation

BE = PE1 = 1,095 lb-PM₁₀/yr

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

As stated in the proposal section, updating to a revised generally accepted emission factor is an administrative action and does not have Rule 2201 implications (BACT, offset, public notice, etc.). Thus, no further discussion is required.

d. BE CO

As shown in Section VII.C.5 above, the facility is not a major source for CO emissions.

Therefore BE=PE1.

N-2107-5: Raw material receiving and grinding operation

This operation is not a source of CO emissions; therefore, it's BE is not determined.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

BE = PE1 = 29,434 lb-CO/yr

³PE1 = 29,209 lb-PM10/yr; however, due to restrictive facility-wide PM10 emission limit, the maximum PM10 emissions from the permit unit could be up to 29,200 lb/yr.

N-2107-12: Protein meal finishing and load out operation

This operation is not a source of CO emissions; therefore, it's BE is not determined.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

As stated in the proposal section, updating to a revised generally accepted emission factor is an administrative action and does not have Rule 2201 implications (BACT, offset, public notice, etc.). Thus, no further discussion is required.

e. BE VOC

As shown in Section VII.C.5 above, the facility is not a major source for VOC emissions.

Therefore BE=PE1.

N-2107-5: Raw material receiving and grinding operation

This operation is not a source of quantifiable VOC emissions; therefore, it's BE is not determined.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

BE = PE1 = 9,034 lb-VOC/yr

N-2107-12: Protein meal finishing and load out operation

This operation is not a source of VOC emissions; therefore, it's BE is not determined.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

As stated in the proposal section, updating to a revised generally accepted emission factor is an administrative action and does not have Rule 2201 implications (BACT, offset, public notice, etc.). Thus, no further discussion is required.

7. SB 288 Major Modification

40 CFR Part 51.165 defines a SB 288 Major Modification as any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

Since this facility is a major source for NO_x, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if further SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	35,220	50,000	No

As seen in the table above, none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification and no further discussion is required.

8. Federal Major Modification / New Major Source

Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA.

As defined in 40 CFR 51.165, Section (a)(1)(v) and part D of Title I of the CAA, a Federal Major Modification is any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act. The significant net emission increase threshold for each criteria pollutant is included in Rule 2201.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. In step 1, emission decreases can not cancel out the increases. Step 2 allows consideration of the project’s net emissions increase as described in 40 CFR 51.165 and the Federal Clean Air Act Section 182 (e), as applicable.

Step 1: Project Emissions Increase

For modified existing emissions units, according to 40 CFR 51.165(a)(2)(ii)(C), the project’s emission increase for each pollutant is equal to the sum of the differences between the projected actual emissions (PAE) and the baseline actual emissions (BAE). Please note that in step 1, since the District is classified as extreme non-attainment for ozone, no NO_x and VOC emission decreases associated with the proposed project shall be accounted for.

$$\text{Project Emissions Increase} = \sum(\text{PAE} - \text{BAE})$$

As described in 40 CFR 51.165(a)(1)(xxviii)(B), when using historical data and the company’s expected business activity to determine PAE, the portion of the emissions after the project that the existing unit could have accommodated (Unused Baseline Capacity, UBC) before the project (during the same 24-month baseline period used to

determine BAE) and that are unrelated to the particular project (including emissions increases due to product demand growth) are to be excluded.

Otherwise, according to 40 CFR 51.165(a)(1)(xxvii)(B)(4), when determining PAE, in lieu of using the method described in 40 CFR 51.165 (a)(1)(xxviii)(B)(1)-(3), *Projected Actual Emissions*, the owner/operator may elect to use emissions unit's Potential to Emit. If appropriate projected actual emissions are not provided by the applicant, then the emissions unit's Potential to Emit is used to calculate the emissions increase.

Since the project proponent has not provided information required to calculate PAE, the District will use the PE2 to calculate the emissions increase:

$$\text{Project Emissions Increase} = \sum(\text{PE2} - \text{BAE})$$

As seen in section VII.C.5 above, this facility is a Major Source for NO_x emissions; thus, discussion in this section is limited to NO_x emitting units only.

Note that the boilers under permits N-2107-13 and '-15 are existing units. These units are not undergoing any physical changes. Further, pre and post project heat input rate and emission factors for NO_x will stay same. Therefore, these units are not included in the Federal Major Modification applicability determination, consistent with the guidance in District's policy APR-1150 (1/5/2021).

Post-project Potential to Emit (PE2)

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

PE2 = 25,754 lb-NO_x/yr

Baseline Actual Emissions (BAE)

For emission units (other than electric utility steam generating units), according to 40 CFR 51.165(a)(1)(xxxv)(B), the BAE are calculated as the average, in tons/year, at which the emissions unit actually emitted during any 24-month period selected by the operator within the previous 10-year period.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

A June 2005 source test conducted by Darling determined the NO_x emissions from these operations at the RTO outlet were 2.91 lb/hr. The permitted NO_x limit at that time was 2.94 lb/hr. The material processing rate was not recorded during the source testing; however, the facility was permitted to process up to 825 tons/day at that time.

The hourly heat input rate to the RTO (3 MMBtu/hr), exhaust air flow rate (~10,000 cfm), chamber temperature (1,400°F), permitted process rate (825 tons/day), and composition of exhaust stream (rendering animal by-products) during years 2018 through 2020 is similar to when the RTO was installed in May 2005. Due to these process similarities, NO_x emissions are expected to be same in years 2018 through 2020, two years prior to the submittal of this application.

Based on the historical records, the processes have operated 24 hours/day, 6.5 days/week and 52 weeks/yr. Using these records, the BAE emissions would be:

$$\begin{aligned} \text{BAE} &= 2.91 \text{ lb-NO}_x/\text{hr} \times 24 \text{ hr/day} \times 6.5 \text{ days/week} \times 52 \text{ weeks/yr} \\ &= 23,606 \text{ lb-NO}_x/\text{yr} \end{aligned}$$

Project Emissions Increase

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

$$\begin{aligned} \text{Emission Increase} &= \text{PE2} - \text{BAE} \\ &= 25,754 \text{ lb-NO}_x/\text{yr} - 23,606 \text{ lb-NO}_x/\text{yr} \\ &= 2,148 \text{ lb-NO}_x/\text{yr} \end{aligned}$$

In conclusion, the project’s combined total emission increase are summarized in the following table and are compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x	2,148	0	Yes

Since there is an increase in NO_x emissions, this project constitute a Federal Major Modification.

Separately, Federal Offset Quantity is calculated below.

Federal Offset Quantity Calculation

The Federal Offset Quantity (FOQ) is only calculated for the pollutants for which a project is a Federal Major Modification or a New Major Source as determined above.

Pursuant to 40 CFR 51.165(a)(3)(ii)(J), the federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) for each emission unit times the applicable federal offset ratio.

$$\text{FOQ} = \sum(\text{PE2} - \text{AE}) \times \text{Federal offset ratio}$$

Federal Offset Ratio

According the CAA 182(e), the federal offset ratio for VOC and NO_x is 1.5 to 1 (due to the District extreme non-attainment status for ozone).

Federal Offset Quantity (FOQ)

This project includes new and modified units:

$$FOQ = \sum(PE2 - AE)_{\text{All New and Modified Units}} \times \text{Federal offset ratio}$$

NOx		Federal Offset Ratio	1.5
Permit No.	Post-Project Potential to Emit (PE2) (lb/year)	Actual Emissions (lb/year)	Emissions Change (lb/yr)
N-2107-9 & '-14	25,754	23,606	2,148
$\sum(PE2 - AE)$ (lb/year):			2,148
Federal Offset Quantity (lb/year): $\sum(PE2 - AE) \times 1.5$			3,222
Federal Offset Quantity (tons/year): $\sum(PE2 - AE) \times 1.5 \div 2,000$			1.6

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

I. Project Emissions Increase - New Major Source Determination

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	17.6	8.1	26.9	47.1	14.6	14.6
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore, Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in **Appendix F**.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

N-2107-5: Raw material receiving and grinding operation

As discussed in section VII.C.2 above, the new grinder and pump are completely enclosed units and are not expected to generate any emissions. Thus, PE2 is not greater than 2 lb/day for any pollutant, and the units do not trigger BACT.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

The existing operations are being modified; thus, AIPE calculations (see below) are performed for these operations.

N-2107-12: Protein meal finishing and load out operation

New Hammermill:

Per section VII.C.2 above, PE2 from new hammermill is not greater than 2 lb/day for PM10 emissions. Thus, BACT is not triggered.

New Screen:

Per section VII.C.2 above, PE2 from new screening system is not greater than 2 lb/day for PM10 emissions. Thus, BACT is not triggered.

New Storage silo:

Per section VII.C.2 above, PE2 from new storage silo is not greater than 2 lb/day for PM10 emissions. Thus, BACT is not triggered.

New Loadout operation:

Per section VII.C.2 above, PE2 from new loadout operation is not greater than 2 lb/day for PM10 emissions. Thus, BACT is not triggered.

b. Relocation of emissions units – PE > 2 lb/day

None of the emissions units being relocated from one stationary source to another; therefore, BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE2} - (\text{PE1} * (\text{EF2} / \text{EF1}))$$

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

Pollutant	PE2 (lb/day)	EF2/EF1	PE1 (lb/day)	AIPE (lb/day)
NO _x	70.6	0.98/0.98	70.6	0.0
SO _x	138.8	0.15/0.15	123.8	15.0
PM ₁₀	67.3	0.07275/0.097	80.0	7.3
CO	80.6	1.12/1.12	80.6	0.0
VOC	27.8	0.03/0.03	24.8	3.0

Since AIPE exceeds over 2 lb/day for SO_x, PM₁₀, and VOC emissions, BACT is triggered for these pollutants.

N-2107-12: Protein meal finishing and load out operation

AIPE for the existing equipment is summarized in the following table:

Pollutant	PE2 (lb/day)	EF2/EF1	PE1 (lb/day)	AIPE (lb/day)
PM ₁₀	3.0	0.0025/0.0025	3.0	0.0

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

As stated in the proposal section, updating generally accepted emission factor is an administrative action and does not have Rule 2201 implications. Thus, AIPE calculations are not necessary.

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB 288 for any pollutant. Therefore BACT is not triggered for any pollutant under SB-288.

As discussed in Section VII.C.8 above, this project does constitute a Federal Major Modification for NO_x emissions. Therefore, BACT is triggered for NO_x for all emissions units in the project for which there is an emission increase (noted in section VII.C.8 above). This means, BACT is triggered for NO_x emissions from permit units N-2107-9 and '-14, in addition, to the SO_x, PM₁₀ and VOC emissions discussed under AIPE section above for units N-2107-9 and '-14.

2. BACT Guideline

BACT guideline 8.3.2 (refer to **Appendix C** of this document) is used to determine PM₁₀ and VOC BACT requirement for the proposed equipment under permits N-2107-9 and '-14. This guideline does not list NO_x and SO_x BACT requirements; therefore, a project specific BACT analysis is prepared under this project.

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (refer to **Appendix D** of this document), BACT has been satisfied with the following:

NO_x:

Since the RTO system (control equipment) generates collateral NO_x, the District practice is to review technologies that can be utilized upstream or downstream of the RTO.

BACT for the proposed operation is to reduce nitrogen compounds (measured in terms of ammonia) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum practically feasible extent and use natural gas fuel in the RTO.

Darling currently uses a venturi scrubber and a regenerative thermal oxidizer (RTO) to treat the exhaust stream from permit units N-2107-9 and '-14. Darling is proposing to upgrade the existing control system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emission controls. The proposed system is expected to reduce the process nitrogen compounds prior to combusting the stream in the RTO. The RTO is fueled on natural gas. Thus, BACT requirements are satisfied.

SO_x:

BACT for the proposed operation is to reduce sulfur compounds (measured in terms of hydrogen sulfide) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum practically feasible extent and use natural gas fuel in the RTO.

Darling currently uses a venturi scrubber and a regenerative thermal oxidizer (RTO) to treat the exhaust stream from permit units N-2107-9 and '-14. Darling is proposing to upgrade the existing control system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emission controls. The proposed system is expected to reduce the process nitrogen compounds prior to combusting the stream in the RTO. The RTO is fueled on natural gas. Thus, BACT requirements are satisfied.

PM₁₀:

BACT for the proposed operation is to use natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%.

Darling uses natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a particulate removal system of

venturi scrubbers and packed bed scrubber. Thus, the proposed project complies with the above BACT requirements.

VOC:

BACT for the proposed operation is to use natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a minimum overall control of at least 95% for VOC emissions.

Darling uses natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second. Thus, BACT requirements are satisfied.

B. Offsets

1. Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	35,220	53,763	29,200	94,187	16,148
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	Yes	No	Yes	No	No

2. Quantity of District Offsets Required

2.1 NO_x

As seen in the Offset Applicability section above, SSPE2 for NO_x exceeds the offset threshold of 20,000 lb/yr. Therefore offset calculations will be required.

The quantity of offsets in pounds per year for NO_x is calculated in the following manner for sources with an SSPE1 greater than the offset threshold levels prior to implementing the proposed project.

$$\text{Offsets Required (lb/year)} = (\Sigma[\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR, for all new or modified emissions units in the project,}$$

Where,

PE2 = Post-Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

There is no increases in cargo carrier emissions. Since the project triggered Federal Major Modification, DOR will be 1.5. BE for each emission unit is taken from section VII.C.6 of this document.

Permit unit	PE2 (lb/yr)	BE (lb/yr)	PE2 – BE (lb/yr)
N-2107-9 & '-14	25,754	25,754	0
Offsets Required (lb/yr): $(\sum[PE2 - BE]) \times 1.5$			0

As demonstrated in the calculation above, the amount of offsets required is zero.

District and Federal Offset Quantities

As discussed above, District offsets are triggered but are not required for NOx under Rule 2201. However, as seen above in section VII.C.8 above, this project does trigger Federal Major Modification requirements for NOx emissions and federal offset quantities (3,222 lb-NOx/year) are required for this project for NOx. Pursuant to Section 7.4.2.1 of District Rule 2201, emission reduction credits used to satisfy federal offset quantities for NOx must be creditable and surplus at the time of use (ATC issuance).

Surplus at the Time Of Use Emission Reduction Credits

The applicant has stated that the facility plans to use ERC certificates C-1298-2 and S-4346-2 to satisfy the federal offset quantities for NOx required for this project. Pursuant to the ERC surplus analyses in **Appendix I** of this document, the District has verified that the credits from the ERC certificates provided by the applicant are sufficient to satisfy the federal offset quantities for NOx required for this project.

Proposed Rule 2201 Offset Permit Conditions

The following permit conditions will be added to the Authority to Construct permits:

- Prior to operating equipment under this Authority to Construct permits N-2107-9-19 and '-14-2, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 805 lb, 2nd quarter - 805 lb, 3rd quarter - 806 lb, and fourth quarter - 806 lb. These amounts include the applicable offset ratio specified

in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. [District Rule 2201]

- ERC Certificate Numbers C-1298-2 and S-4346-2 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

2.2 SO_x

As seen in the Offset Applicability section above, the SSPE2 for SO_x does not equal or exceed the offset threshold of 54,750 lb/yr. Therefore District offsets are not triggered. In addition, as demonstrated above, this project does not trigger Federal Major Modification or New Major Source requirements. In conclusion, SO_x offsets will not be required for this project and no further discussion is required.

2.3 PM₁₀

As seen in the Offset Applicability section above, SSPE2 for PM₁₀ equals to the offset threshold of 29,200 lb/yr. Therefore offset calculations will be required.

The quantity of offsets in pounds per year for PM₁₀ is calculated in the following manner for sources with an SSPE1 equals to the offset threshold levels prior to implementing the proposed project.

Offsets Required (lb/year) = $(\Sigma[PE2 - BE] + ICCE) \times DOR$, for all new or modified emissions units in the project,

Where,

PE2 = Post-Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

There is no increases in cargo carrier emissions. DOR is conservatively assumed to be 1.5. BE for both units could be up to 29,200 lb/yr.

Permit unit	PE2 (lb/yr)	BE (lb/yr)	$\Sigma(\text{PE2} - \text{BE})$ (lb/yr)
N-2107-9 & '-14	24,562	29,200	-3,332
N-2107-12	1,306		
Offsets Required (lb/yr): $(\Sigma[\text{PE2} - \text{BE}]) \times 1.5$			0 (-3,332)

As demonstrated in the calculation above, the amount of offsets required is zero.

District Offset Quantities

As discussed above, District offsets are triggered but are not required for PM10 under Rule 2201. In addition, as demonstrated above, this project does not trigger Federal Major Modification or New Major Source requirements and no federal offset are required for this project. In conclusion, PM10 offsets will not be required for this project and no further discussion is required.

2.4 CO

As seen in the Offset Applicability section above, the SSPE2 for CO does not equal or exceed the offset threshold of 200,000 lb/yr. Therefore District offsets are not triggered. In addition, as demonstrated above, this project does not trigger Federal Major Modification or New Major Source requirements. In conclusion, CO offsets will not be required for this project and no further discussion is required.

2.5 VOC

As seen in the Offset Applicability section above, the SSPE2 for VOC does not equal or exceed the offset threshold of 20,000 lb/yr. Thus, District offsets are not triggered. In addition, as demonstrated above, this project does not trigger Federal Major Modification or New Major Source requirements. In conclusion, VOC offsets will not be required for this project and no further discussion is required.

3. ERC Withdrawal Calculations

The applicant must identify the ERC certificate(s) to offset the increase of 3,222 lb-NOx/year emissions for the project. As indicated in previous section, the applicant is proposing to use ERC certificates C-1298-2 and S-4346-2 to mitigate the increases of 3,222 lb-NOx/year emissions associated with this project. See Appendix J for detailed ERC Withdrawal Calculations.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,

- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed,
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

As demonstrated in Section VII.C.8 of this evaluation, this project is a Federal Major Modification. Therefore, public noticing is required for this project for Federal Major Modification purposes.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	35,684	35,220	20,000 lb/year	No
SO _x	48,323	53,763	54,750 lb/year	No
PM ₁₀	29,200	29,200	29,200 lb/year	No
CO	94,891	94,187	200,000 lb/year	No
VOC	15,054	16,148	20,000 lb/year	No

As demonstrated above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE

= SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table. Negative SSIPE values are equated to zero.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	35,220	35,684	0	20,000 lb/year	No
SO _x	53,763	48,323	5,440	20,000 lb/year	No
PM ₁₀	29,200	29,200	0	20,000 lb/year	No
CO	94,187	94,891	0	20,000 lb/year	No
VOC	16,148	15,054	1,094	20,000 lb/year	No

As seen in the table above, the SSIPE for each pollutant is less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

2. Public Notice Action

As discussed above, the proposed project is a Federal Major Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District’s website prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit’s maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions:

N-2107-5-9: Raw material receiving and grinding operation

The new grinder and pump are completely enclosed units and are not expected to generate any emissions. Therefore, no DELs are established for these units. The existing DELs (which are in the form of a number of conditions outlining best management practices to minimize raw material residence time and address housekeeping requirements) in existing permit will replicated in the ATC.

N-2107-9-19: Food processing by-product recycling operation

N-2107-14-2: Feather Recycling Operation

- The combined total raw material processed through the equipment under permits N-2107-9 and N-2107-14 shall not exceed any of the following limits: 1,850,000 lb/day (925 tons/day) and 675,250,000 lb/yr (337,625 tons/yr). [District Rule 2201]
- The combined total emissions from the process lines (N-2107-9 and N-2107-14), at the RTO exhaust, shall not exceed any of the following: 0.98 lb-NO_x/MMBtu and 2.94 lb-NO_x/hr, 0.15 lb-SO_x/ton of raw material processed, 0.07275 lb-PM₁₀/ton of raw material processed, 1.12 lb-CO/MMBtu and 3.36 lb-CO/hr, and 0.03 lb-VOC/ton of raw material processed. [District Rule 2201]

N-2107-12-6: Protein meal finishing and load out operation

- The combined total quantity of protein meal loaded into trucks/containers for shipping through both the old (existing) and new loadout areas shall not exceed 1,200 tons per day. [District Rule 2201]
- PM₁₀ emissions from the protein meal finishing and loadout operation shall not exceed 0.00333 pounds per ton of protein meal loaded out. [District Rule 2201]

N-2107-13-8: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

- Emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO_x @ 3% O₂ or 0.008 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 100 ppmvd CO @ 3% O₂ or 0.073 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
- The ammonia emission rate shall not exceed 10.0 ppmvd @ 3% O₂ over a 15 minute averaging period. [District Rule 4102]

N-2107-15-2: 48 MMBtu/hr boiler with SCR system

- Except during start-up and shutdown, emissions from natural gas combustion shall not exceed any of the following limits: 6 ppmv NO_x @ 3% O₂ or 0.0073 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 50 ppmv CO @ 3% O₂ or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
- During start-up and shutdown periods, emissions from natural gas combustion shall not exceed any of the following limits: 30 ppmv NO_x @ 3% O₂ or 0.036 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 50 ppmv CO @ 3% O₂ or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
- The ammonia emission rate shall not exceed 10.0 ppmvd @ 3% O₂ over a 15 minute averaging period. [District Rule 4102]
- The total duration of startup and shutdown time shall not exceed any of the following limits: 2.0 hours startup per day, 2.0 hours shutdown per day, or 730 hours total startup and shutdown time per year. [District Rules 2201, 4305, 4306, and 4320]

E. Compliance Assurance

1. Source Testing

N-2107-5-9: Raw material receiving and grinding operation

The testing requirements (if any) from the existing permit to operate (PTO) will be included in these permits. No new additional testing requirements are needed.

N-2107-9-19: Food processing by-product recycling operation

N-2107-14-2: Feather Recycling Operation

Darling is proposing to modify the existing equipment, installing new equipment and emission control devices. Therefore, they're required to conduct initial source test to measure NOx, SOx, PM10, CO and VOC emissions at the exhaust of an RTO within 60 days of initial startup under these permits. The testing will verify compliance with the proposed emission limits. Note that periodic testing for VOC emissions will be required at least once every 24 months as is required by the existing PTOs.

N-2107-12-6: Protein meal finishing and load out operation

The potential emissions from the proposed new units are estimated using generally accepted emission factors. Thus, no testing is required for these units.

N-2107-13-8: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15-8: 48 MMBtu/hr boiler with SCR system

Since the proposed changes are administrative, no initial source testing is required.

Currently, the units are required to be tested to measure NOx, CO and NH3 emissions at least once every 12 months. After demonstrating compliance on two consecutive annual tests, each unit is required to be tested once every 36 months. If the results of any 36-month source test demonstrates that the unit does not meet the applicable limits, the source testing frequency reverts to at least once every 12 months. This testing is consistent with the requirements in Rule 4305, 4306 and 4320. The periodic testing requirements will be included in the boiler permits.

2. Monitoring

N-2107-5-9: Raw material receiving and grinding operation

No monitoring is required to demonstrate compliance with Rule 2201.

N-2107-9-19: Food processing by-product recycling operation

N-2107-14-2: Feather Recycling Operation

These operations will be served by two venturi scrubbers, two packed bed scrubbers, a venturi scrubber and RTO system.

Darling will be required to establish minimum water circulation rate through each scrubber (packed bed scrubbers and venturi scrubbers) during initial source test while demonstrating successful compliance with all permit limits. The minimum water circulation rate will be administratively included in the permit. The owner or operator will be required to continuously monitor and record water circulation rate for each scrubber. The water

circulation rate will ensure that the solution is being delivered from the scrubber sump to the top of the scrubber.

Darling will be required to establish minimum solution conductivity (micro mhos/cm) for each packed bed scrubber during initial source test while demonstrating successful compliance with all permit limits. The minimum solution conductivity will be administratively included in the permit. The owner or operator will be required to continuously monitor and record solution conductivity for each packed bed scrubber. The solution conductivity will ensure solution chemistry stays at it's optimal level while abating the sulfur compounds. This metric will guide the operator to replace or replenish the chemicals in the scrubber solution in a timely manner.

Darling will also be required to establish differential pressure (inches of water column) across during initial source test while demonstrating successful compliance with all permit limits. The established differential pressure range will be administratively included in the permit. The owner or operator will be required to continuously monitor and record pressure drop across each scrubber. The differential pressure reading ensures that scrubber is maintained well and that the throat (venturi scrubber) and packing (packed bed scrubber) is not clogged to the point that would compromise the performance & integrity of the scrubbers.

Darling will be required to continuously monitor and records RTO combustion chamber temperature. This temperature records will ensure that the RTO is operating at the required minimum temperature at all times when the rendering processes operate.

N-2107-12-6: Protein meal finishing and load out operation

No monitoring is required.

N-2107-13-8: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15-2: 48 MMBtu/hr boiler with SCR system

Currently, each boiler is required to monitor NO_x, CO, O₂ and NH₃ concentrations on a monthly basis (except for the month in which source test is performed) using District approved monitoring equipment. This monitoring scheme will ensure on-going compliance with the NO_x, CO and NH₃ emission limits in these permits.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

N-2107-5-9: Raw material receiving and grinding operation

The owner or operator is required to daily and annual records of the amount of material received, and cumulative total material received up-to-date in a given year.

N-2107-9-19: Food processing by-product recycling operation

N-2107-14-2: Feather Recycling Operation

These operations will be served by two venturi scrubbers, two packed bed scrubbers, a venturi scrubber and RTO system.

Darling will be required maintain records of the following items on a daily basis: (a) Scrubber solution conductivity (micro mhos/cm) for packed bed scrubbers; (b) Scrubber solution flow rate (gpm) for each scrubber; and (c) Differential pressure (inches of water column) across the packing (packed bed scrubber) or throat (venturi scrubber) of the scrubber. These records will be used verify the proper operation of the scrubber systems.

In addition, Darling will be required to a record of the shared RTO combustion chamber temperature readings collected from the data recorder on a daily basis.

N-2107-12-6: Protein meal finishing and load out operation

No monitoring is required.

N-2107-13-8: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15-2: 48 MMBtu/hr boiler with SCR system

Darling is required to keep records of monthly monitoring of NO_x, CO, NH₃ and O₂ concentrations. Fuel usage records are required to estimate PM₁₀ emissions from the boilers to verify compliance with facility-wide PM₁₀ emission limits.

4. Reporting

N-2107-5-9: Raw material receiving and grinding operation

No reporting is required.

N-2107-9-19: Food processing by-product recycling operation

N-2107-14-2: Feather Recycling Operation

Darling will be required to submit source test report within 60 days after conducting the test.

N-2107-12-6: Protein meal finishing and load out operation

No reporting is required.

N-2107-13-8: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15-8: 48 MMBtu/hr boiler with SCR system

Darling will be required to submit source test report within 60 days after conducting the test.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to **Appendix E** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a New Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. Darling Ingredients Inc.'s compliance certification is included in **Appendix G** of this document.

H. Alternate Siting Analysis

The current project occurs at an existing facility. As explained in section I of this evaluation, the applicant proposes to modify the existing animal rendering operation.

Since the project provide animal rendering services at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 of Rule 2520 states a minor permit modifications are permit modifications that are not Title I modifications, modifications as defined in section 111 or 112 of the Federal Clean Air Act, or major modification under the prevention of significant deterioration (PSD) provisions of Title I of the CAA or under EPA PSD regulations. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

This subpart applies to steam generating units that are constructed, reconstructed, or modified after 6/9/89 and have a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.

As stated previously in section I, Darling Ingredients Inc. is not proposing any physical changes to the boilers under permit N-2107-13 or '-15. Further, the existing permits contain all applicable requirements from this subpart. These requirements will be replicated into the permits under this project. Thus, continued compliance is expected.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

40 CFR Part 63 Subpart DDDDD National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

This subpart is applicable to boilers and process heaters located at Major Sources of HAP emissions.

40 CFR 63.2 defines “major source” as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants (HAPs), unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

Per worksheets in **Appendix H** of this document, this facility is not a Major source of HAP emissions, as the HAPs from the facility operations are less than 10 tons/yr for single HAP and less than 25 tons/yr for combination of HAPs. Thus, the proposed unit is not subject to the requirements of this subpart.

40 CFR Part 63 Subpart JJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

Pursuant to Section 63.1195(e) a gas-fired boiler, as defined in Subpart JJJJJ, is not subject to any requirement of this Subpart. Pursuant to the definition in the subpart, a gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel.

The boilers under this project meet the definition of a “gas-fired boiler” as the units are required to use natural gas fuel. Therefore, Subpart JJJJJ requirements are not applicable.

Rule 4101 Visible Emissions

Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringlemann 1 or equivalent to 20% opacity. The following condition will be included in the permit:

- No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Compliance is expected with this Rule.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification of an existing source shall not result in an increase in cancer risk greater than the District’s significance level (20 in a million) and shall not result in acute and/or chronic risk indices greater than 1.

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project, the total facility prioritization score including this project was less than or equal to one.

The resulting prioritization score for this project is shown below.

Health Risk Assessment Summary	
	Worst Case Potential
Prioritization Score	<1

In accordance with District policy APR 1905, no further analysis is required to determine the impact from this project and compliance with the District’s Risk Management Policy is expected.

Compliance with District Rule 4102 requirements is expected.

See **Appendix E**: Health Risk Assessment Summary

Rule 4104 Reduction of Animal Matter

The requirements of this rule state that all gases and vapors released from the reduction of animal matter are vented to either: 1) an incinerator with a minimum operating temperature of 1200' F and a retention time of at least 0.3 seconds; 2) a control device with equivalent control as that of the incinerator.

The operations under permits N-2107-9 and '-14 reduce animal matter. Therefore, these operations are subject to District Rule 4104 requirements. The applicant has proposed to continually use a shared regenerative thermal oxidizer that meets the retention time and operating temperature requirements in the above paragraph. Therefore, continued compliance is expected.

Rule 4201 Particulate Matter Concentration

Section 3.0 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

N-2107-5: Raw material receiving and grinding operation

This rule applies to source operations with exhaust stacks. This operation does not include exhaust stacks. Therefore, District Rule 4201 requirements are not applicable to the loadout operation.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

The shared thermal oxidizer includes an exhaust stack. The following table demonstrates that the operations will comply with District Rule 4201 requirements. It is assumed that 50% of particulate matter emissions are PM10 (per District Rule 2201, Section 4.11.2).

Operation	Gas Flow Rate (cfm)	PM10 Emission Rate (lb/day)	PM Emission Rate (lb/day)	PM Emission Rate ⁴ (grains/minute)	Maximum PM Concentration ⁵ (gr/SCF)
Shared Regenerative Thermal Oxidizer	10,000	67.3	134.6	654.3	0.07

As seen in the table above, the maximum PM concentration is below the 0.1 gr/dscf; thus, compliance is expected with this rule.

N-2107-12: Protein meal finishing and load out operation

Existing equipment:

The applicant is not proposing any changes to the existing equipment; therefore, continued compliance is expected.

⁴ Grains/Minute = PM Emission rate (lb/day) x 7000 grains/lb ÷ 1440 min/day

⁵ PM Concentration = Grains/Minute ÷ CFM (SCF/min)

New Hammermill:

The hammermill does not have exhaust stack that can be sampled to determine the grain loading. Therefore, District Rule 4201 requirements are not applicable.

New Screen:

This screen will be vented to a cyclone with a bag filter and is discharged inside the building. The exhaust flow rate through the cyclone is presumed to be at least 100 scfm. It is assumed 50% of the PM is PM10.

$$PE2 = 0.0001 \text{ lb-PM10/hr} \div 0.5 \text{ lb-PM10/lb-PM} = 0.0002 \text{ lb-PM/hr}$$

$$PM \left(\frac{\text{gr}}{\text{dscf}} \right) = \frac{\left(0.0002 \frac{\text{lb-PM}}{\text{hr}} \right) \left(7,000 \frac{\text{gr-PM}}{\text{lb-PM}} \right) \left(\frac{\text{hr}}{60 \text{ min}} \right)}{\left(100 \frac{\text{ft}^3}{\text{min}} \right)} = 0.00023 \frac{\text{gr-PM}}{\text{dscf}} < 0.1 \frac{\text{gr-PM}}{\text{dscf}}$$

New Storage silo:

The silo will be equipped with bin vent filtration system. The exhaust flow rate through the filtration system is estimated to be 3 scfm⁶.

$$PE2 = 0.0001 \text{ lb-PM10/hr} \div 0.5 \text{ lb-PM10/lb-PM} = 0.0002 \text{ lb-PM/hr}$$

$$PM \left(\frac{\text{gr}}{\text{dscf}} \right) = \frac{\left(0.0002 \frac{\text{lb-PM}}{\text{hr}} \right) \left(7,000 \frac{\text{gr-PM}}{\text{lb-PM}} \right) \left(\frac{\text{hr}}{60 \text{ min}} \right)}{\left(3 \frac{\text{ft}^3}{\text{min}} \right)} = 0.0078 \frac{\text{gr-PM}}{\text{dscf}} < 0.1 \frac{\text{gr-PM}}{\text{dscf}}$$

New Loadout operation:

This operation does not include exhaust stacks. Therefore, District Rule 4201 requirements are not applicable to the loadout operation.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

Darling Ingredients Inc. is not proposing any physical changes to the boilers that would adversely increase the amount of particulate matter from the boilers. Therefore, continued compliance is expected with this rule.

Rule 4202 Particulate Matter – Emission Rate

Section 4.0 of this rule, a person shall not discharge into the atmosphere PM emissions in excess of the maximum allowable limit (E_{Max}), in lb/hr, determined by the following equations:

$$E_{Max} = 3.59 P^{0.62}, \text{ for Process weight (P) less than or equal to 30 tons/hr}$$

$$E_{Max} = 17.31 P^{0.16}, \text{ for Process weight (P) greater than 30 tons/hr}$$

⁶ (400-tons x 2,000 lb/ton) ÷ (60 lb/ft³) = 13,333 ft³; At processing rate of 5 tons/hr, it will take 80 hours to fill the silo. Thus, exhaust flow rate would be: 13,333 ft³ ÷ (80 hour x 60 min/hr) = 3 cfm

N-2107-5: Raw material receiving and grinding operation

This operation is not expected to generate PM emissions; therefore, no further discussion is required.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

Processing Rate: 38.5 tons/hr (925 tons/day ÷ 24 hr/day)

Assumption: 0.5 lb-PM₁₀/lb-PM

$$E_{\text{Max}} = 17.31 (38.5 \text{ tons/hr})^{0.16} \\ = 31.0 \text{ lb-PM/hr}$$

$$E_{\text{Proposed}} = (67.3 \text{ lb-PM}_{10}/\text{day}) \div (0.5 \text{ lb-PM}_{10}/\text{lb-PM} \times 24 \text{ hr/day}) \\ = 5.6 \text{ lb-PM/hr}$$

N-2107-12: Protein meal finishing and load out operation

Existing equipment:

The applicant is not proposing any changes to the existing equipment; therefore, continued compliance is expected with this rule.

New Hammermill:

Processing Rate: 5 tons/hr

Assumption: 0.5 lb-PM₁₀/lb-PM

$$E_{\text{Max}} = 3.59 (5 \text{ tons/hr})^{0.62} \\ = 9.7 \text{ lb-PM/hr}$$

$$E_{\text{Proposed}} = (0.024 \text{ lb-PM}_{10}/\text{hr}) \div (0.5 \text{ lb-PM}_{10}/\text{lb-PM} \times 24 \text{ hr/day}) \\ = 0.048 \text{ lb-PM/hr}$$

New Screen:

Processing Rate: 5 tons/hr

Assumption: 0.5 lb-PM₁₀/lb-PM

$$E_{\text{Max}} = 3.59 (5 \text{ tons/hr})^{0.62} \\ = 9.7 \text{ lb-PM/hr}$$

$$E_{\text{Proposed}} = 0.0 \text{ lb-PM/hr}$$

New Storage silo:

Processing Rate: 5 tons/hr

Assumption: 0.5 lb-PM₁₀/lb-PM

$$E_{\text{Max}} = 3.59 (5 \text{ tons/hr})^{0.62} \\ = 9.7 \text{ lb-PM/hr}$$

$$E_{\text{Proposed}} = 0.0 \text{ lb-PM/hr}$$

New Loadout operation:

Processing Rate: 50 tons/hr (1,200 tons/day ÷ 24 hr/day)
Assumption: 0.5 lb-PM₁₀/lb-PM

$$E_{\text{Max}} = 17.31 (50 \text{ tons/hr})^{0.16} \\ = 32.4 \text{ lb-PM/hr}$$

$$E_{\text{Proposed}} = (0.016 \text{ lb-PM}_{10}/\text{day}) \div (0.5 \text{ lb-PM}_{10}/\text{lb-PM}) \\ = 0.0 \text{ lb-PM/hr}$$

For each operation above, the proposed emission rate (E_{Proposed}) is less than the maximum allowable emission rate (E_{Max}); therefore, compliance is expected with this rule.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

Gas and liquid fuels are excluded from the definition of process weight. Therefore, this rule does not apply to these boilers.

Rule 4301 Fuel Burning Equipment

Per section 2.0, the provisions of this rule shall apply to any fuel burning equipment except air pollution control equipment which is exempted according to Section 4.0.

N-2107-5: Raw material receiving and grinding operation

This operation does not involve any fuel burning equipment; therefore, this operation is not subject to the requirements of this rule.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

The exhaust stream from these operation is routed through the regenerative thermal oxidizer (RTO) that uses natural gas to heat up the chambers. Since RTO primarily serves as air pollution control equipment, it is exempt from the requirements of this rule.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

This rule is applicable to these units. The applicant is not proposing any changes that would result in an increase in emissions from the boilers. Thus, continued compliance is expected with this rule.

Rule 4304 Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters

Pursuant to District Rules 4305 and 4306, Section 6.3.1, boilers are required to be tested at least once every 12-months. Gaseous fuel fired units demonstrating compliance on two consecutive 12-month source tests may defer the following source test for up to 36 months. During 36-month source testing interval, the operator shall tune the boiler according to section 5.2.1 (tune up at least once each calendar year by qualified technician in accordance with Rule 4304). Tune-ups required by Sections 5.2.1 and 6.3.1 do not need to be performed for units that operate and

maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored.

NO_x, CO and O₂ concentrations from the boilers under permit N-2107-13 and '-15 will be measured using a portable analyzer monitor on a monthly basis. This monitoring scheme is approved under District Policy SSP-1105; therefore, boiler tune-ups are not required.

Rule 4305 Boilers, Steam Generators, and Process Heaters – Phase 2

Since the emission limits of District Rule 4306 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4306 requirements will satisfy requirements of District Rule 4305.

Rule 4306 Boilers, Steam Generators, and Process Heaters – Phase 3

Section 2.0 - Applicability

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour.

The heat input rate to each boiler under N-2107-13 and '-15 is greater than 5 MMBtu/hr. Therefore, these units are subject to the requirements of this rule.

Section 5.0 - Requirements

Tier -1 limits: Until December 30, 2023, the limits are 9 ppmvd NO_x @ 3% O₂ and 400 ppmvd CO @ 3% O₂.

Tier – 2 Limits: On and after December 31, 2023, the limits are 7 ppmvd NO_x @ 3% O₂ and 400 ppmvd CO @ 3% O₂ for fire-tube boilers, and 9 ppmvd NO_x @ 3% O₂ and 400 ppmvd @ 3% O₂ for all other units.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

This boiler is a water tube boiler. The existing PTO limits the emissions to 7 ppmvd NO_x @ 3% O₂ and 100 ppmvd CO @ 3% O₂.

N-2107-15: 48 MMBtu/hr boiler with SCR system

This boiler is a water tube boiler. The existing PTO limits the emissions to 6 ppmvd NO_x @ 3% O₂ and 50 ppmvd CO @ 3% O₂ during steady state operation.

Since the permitted NO_x and CO emission limits are at or below the applicable Tier 1 & Tier 2 limit of 9 ppmvd NO_x @ 3% O₂ and 400 ppmvd CO @ 3% O₂, each boiler is expected to operate in compliance with the requirements of this section.

Section 5.2 lists the requirements for boilers limited to a heat input rate of less than 9 billion Btu per calendar year. The boilers under permit N-2107-13 or '-15 are not limited to a heat input rate of less than 9 billion Btu per calendar year. Therefore, this section is not applicable.

Section 5.3 states that the NO_x and CO emission limits shall not apply to this unit during start-up and shutdown period provided that the duration of each start-up or each shutdown is not

greater than 2.0 hours, and the emission control system is utilized during these periods. An operator may submit a request to allow more than two hours for each startup or each shutdown provided the operator meets all of the conditions specified in sections 5.3.3.1 to 5.3.3.3.

The applicant is not requesting any changes to the existing startup/shutdown provisions. Thus, no further discussion is necessary.

Section 5.4.1 requires the operator to install and maintain a non-resettable, totalizing mass or volumetric flow meter for the units, which simultaneously uses gaseous and liquid fuels and is subject to the requirements of Section 5.1. The applicant is proposing to use gaseous fuel only. Therefore, they are not required to install and maintain a fuel flow meter under this section.

Section 5.4.2 requires that the units subject to District Rule 4306, Section 5.1 emissions limits, shall either install and maintain Continuous Emission Monitoring (CEM) equipment for NO_x, CO and O₂, or install and maintain APCO-approved alternate monitoring. In order to satisfy the requirements of District Rule 4306, the applicant has proposed to use pre-approved alternate monitoring scheme "H" of District Policy SSP-1105, which requires periodic monitoring of NO_x, CO, NH₃ and O₂ exhaust emissions concentrations. The following condition(s) will be included in the boiler permits:

- The permittee shall monitor and record the stack concentration of NO_x, CO, NH₃ and O₂ at least once during each month in which source testing is not performed. NO_x, CO and O₂ monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH₃ monitoring shall be conducted utilizing gas detection tubes (Draeger brand or District approved equivalent). Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 4305, 4306 and 4320]
- If either the NO_x, CO or NH₃ concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320]
- All NO_x, CO, O₂ and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the

Permit to Operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306 and 4320]

- Ammonia emissions readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rules 4305 and 4306]
- The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃ and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH₃ emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4305, 4306 and 4320]

Section 5.5.1 states the operator of any unit have the option of complying with either the applicable heat input (lb/MMBtu) emission limits or the concentration (ppmv) emission limit. The following condition(s) will be included in the boiler permits:

- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320]

Section 5.5.2 requires all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. The following condition(s) will be included in the boiler permits:

- All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320]

Section 5.5.3 requires that all CEMS data shall be averaged over a period of 15-consecutive minutes to demonstrate compliance with the applicable emission limits in this rule. The proposed boiler emissions will not be measured using CEMS system; therefore, this section is not applicable.

Section 5.5.4 requires emissions monitoring pursuant to Sections 5.4.2, 5.4.2.1, and 6.3.1 using a portable NO_x analyzer as part of an APCO approved Alternate Emissions Monitoring

System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five readings evenly spaced out over the 15-consecutive-minute period. The following condition(s) will be included in the boiler permits:

- All NO_x, CO, O₂ and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306 and 4320]

Section 5.5.5 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. The following condition(s) will be included in the boiler permits:

- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320]

Section 6.0 – Administrative Requirements

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.3 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule. The following condition(s) will be included in the boiler permits:

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320, and 40 CFR 60.48c(i)]

Section 6.2 identifies the test methods for determining higher heating value of fuel, NO_x, CO, O₂, stack gas velocities, and stack gas moisture content. The following condition(s) will be included in the boiler permits:

- NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]
- CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320]

- Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320]

In addition, the ammonia slip is required to be measured using BAAQMD Method ST-1B. The following condition(s) will be included in the boiler permits:

- Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081]

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.1 and 5.2.3 not less than once every 12 months. Units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.2.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Sections 5.1 or 5.2.3. Tune-ups required by Sections 5.2.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored.

NO_x, CO and O₂ concentrations will be measured on monthly basis using portable analyzer. Therefore, no periodic tune-ups are required. The following conditions will be included in the permit:

- Source testing to measure NO_x, CO and NH₃ emissions during steady state operation shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320]

Section 6.3.2 lists compliance testing procedure for units that represent a group of units. No group testing is being established.

Section 6.4 discusses emission control plan (ECP). The permit application for the proposed boiler satisfies the requirements of the Emission Control Plan, as listed in Section 6.4 of District Rule 4306. No further discussion is necessary.

Section 7.0 – Compliance Schedule

The proposed boiler is expected to be operating in compliance with this rule. Therefore, no further discussion is required.

Compliance is expected with this Rule.

Rule 4309 Dryers, Dehydrators, and Ovens

This rule is applicable to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input is 5.0 million British thermal units per hour or greater. All of the drying units in this project are steam-heated and do not combust any fuel; therefore, District Rule 4309 requirements are not applicable

Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr

Section 2.0 - Applicability

Section 2.0 states that this rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour.

The heat input rate to each boiler (N-2107-13, '-15) is greater than 5 MMBtu/hr. Therefore, these units are subject to the requirements of this rule.

Section 5.0 – Requirements

Section 5.1 states that an operator of a unit(s) subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

- Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or
- Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or
- Comply with the applicable Low-use Unit requirements of Section 5.5.

The facility had chosen to comply with the emission limits specified in Section 5.2 and 5.4.

Section 5.2, the proposed boiler shall not exceed the following applicable limits:

Tier -1 limits - Until December 30, 2023

NOx: 7 ppmvd @ 3% O₂

CO: 400 ppmvd @ 3% O₂

Tier-2 limits - On and after December 31, 2023

NOx: 2.5 ppmvd @ 3% O₂

CO: 400 ppmvd @ 3% O₂

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

This boiler is a water tube boiler. The existing PTO limits the emissions to 7 ppmvd NOx @ 3% O₂ and 100 ppmvd CO @ 3% O₂. This boiler is expected to operate in compliance Tier -1 NOx and CO emission limits at this time. The applicant has not disclosed as to how they would comply with this rule in the future (i.e., whether they're going to complying with Tier-2 NOx and CO limit, or pay an annual emissions fees, or designate the boiler as low-use unit).

N-2107-15: 48 MMBtu/hr boiler with SCR system

This water tube boiler is limited to emit up to 6 ppmvd NO_x @ 3% O₂ and 50 ppmvd CO @ 3% O₂ during steady-state period. This boiler is expected to operate in compliance Tier -1 NO_x and CO emission limits at this time. The applicant has not disclosed as to how they would comply with this rule in the future (i.e., whether they're going to complying with Tier-2 NO_x and CO limit, or pay an annual emissions fees, or designate the boiler as low-use unit).

Section 5.2.2 requires that no unit fired on liquid fuel shall be operated in a manner to exceed emissions of 40 ppmv NO_x and 400 ppmv CO.

The boilers under permits N-2107-13 7 '-15 will not be fired on liquid fuel. As such, this section does not apply.

Section 5.4.1 requires to comply with one of particulate matter control requirement listed in below.

- Operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;
- Operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or
- Operators shall install and properly operate an emission control system that reduces SO₂ emissions by at least 95% by weight; or limit exhaust SO₂ to less than or equal to 9ppmv corrected to 3.0% O₂

Darling is using PUC quality natural gas fuel with 1.0 gr-S/100 scf. Thus, compliance is expected with this section. The following conditions will be included in the permit:

- This unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320]

Section 5.6 states that the NO_x and CO emission limits shall not apply to this unit during start-up and shutdown period provided that the duration of each start-up or each shutdown is not greater than 2.0 hours, and the emission control system is utilized during these periods. The requirements from the existing permits will be replicated into the permits under this project.

Section 5.7 discusses monitoring provisions to comply with NO_x and CO limits. These provisions are similar to the provisions in Rule 4306 (discussed previously).

Section 5.7.6 requires the operator to provide annual fuel sulfur content analysis. The following conditions will satisfy the requirements of this section:

- Fuel sulfur content shall be determined using EPA Method 11 or EPA Method 15 or District, CARB and EPA approved alternative methods. [District Rule 4320]

Section 5.8 discusses compliance determination. The requirements in this section are similar to the requirements in Rule 4306 (discussed previously).

Section 6.0 – Administrative Requirements

Recordkeeping requirements of this Rule are similar to that of the Rule 4306. Please refer to section 6.0 of Rule 4306.

Section 6.4 Emission Control Plan (ECP)

The following condition will be included in each boiler permit:

- No later than May 1, 2022, the operator shall submit an emission control plan (ECP) that contains the following information: Permit to Operate number, fuel type and higher heating value (HHV) of the fuel, annual fuel consumption (expressed in Btu/yr), current emission level, including method used to determine emission level, NOx limit to be satisfied pursuant to section 5.2 Table 2 or emission fee payment to be made pursuant to section 5.3 and plan of actions, including a schedule of increments of progress, which will be taken to satisfy the requirements of Section 5.0 and the compliance schedule in Section 7.0 of District Rule 4320 (12/17/2020). [District Rule 4320]

Section 7.0 – Compliance Schedule

This section refers to “Authority to Construct” and “Compliance Deadline” dates for existing units. The facility is expected to comply with their deadlines.

Compliance is expected with this Rule.

Rule 4351 Boilers, Steam Generators, and Process Heaters – Phase 1

Since the emission limits of District Rule 4306 and 4320 and all other requirements are equivalent or more stringent than this Rule, compliance with District Rule 4306 and 4320 requirements will satisfy requirements of District Rule 4351.

Rule 4801 Sulfur Compounds

Section 3.1 states that a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding a concentration of two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO₂) at the point of discharge on a dry basis averaged over 15 consecutive minutes.

N-2107-13: 76.93 MMBtu/hr natural gas-fired boiler with SCR system

N-2107-15: 48 MMBtu/hr boiler with SCR system

For the proposed gaseous fuel combustion at a reference state of 60 °F, the Rule 4801 limit of 2,000 ppmvd is equivalent to:

$$\frac{(2000 \text{ ppmvd}) \left(8,578 \frac{\text{dscf}}{\text{MMBtu}}\right) \left(64 \frac{\text{lb} - \text{SO}_2}{\text{lb} - \text{mol}}\right)}{\left(379.5 \frac{\text{dscf}}{\text{lb} - \text{mol}}\right) (10^6)} \cong 2.9 \frac{\text{lb} - \text{SO}_2}{\text{MMBtu}}$$

SO_x emissions from each boiler are based on 1.0 gr-S/100 scf, equivalent to 0.00285 lb/MMBtu. Since the SO_x emissions from each boiler are less than 2.9 lb/MMBtu, continued compliance is expected with this Rule.

N-2107-9: Food processing by-product recycling operation

N-2107-14: Feather Recycling Operation

For the RTO exhaust rate of 10,000 dscf/min, the Rule 4801 limit of 2,000 ppmvd is equivalent to:

$$\frac{(2000 \text{ ppmvd}) \left(10,000 \frac{\text{dscf}}{\text{min}}\right) \left(60 \frac{\text{min}}{\text{hr}}\right) \left(64 \frac{\text{lb} - \text{SO}_2}{\text{lb} - \text{mol}}\right)}{\left(379.5 \frac{\text{dscf}}{\text{lb} - \text{mol}}\right) (10^6)} \cong 202.4 \frac{\text{lb} - \text{SO}_2}{\text{hr}}$$

Per section VII.C.2 above, SO_x emissions from the proposed operations are 5.783 lb/hr, which are well below the 202.4 lb-SO_x/hr allowed by the rule. Therefore, compliance is expected with this rule.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

District CEQA Findings

The County of Stanislaus (County) is the public agency having principal responsibility for approving the project. As such, the County served as the Lead Agency (CCR §15367) and prepared and adopted a Negative Declaration concluding that the project would not have a significant effect on the environment.

Pursuant to CEQA Guidelines §15250, the District is a Responsible Agency for the Project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency the District complies with CEQA by considering the environmental document prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project (CCR §15096).

The District has considered the Lead Agency’s environmental document. Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be below the District’s thresholds of significance for criteria pollutants. Thus, the District finds that through a combination of project design elements, compliance with applicable District rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have a less than significant impact on air quality. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs N-2107-5-9, ‘-9-19, ‘-12-6, ‘-13-8, ‘-14-2 and ‘-15-2 ‘subject to the permit conditions on the attached draft ATC in **Appendix A**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-2107-5-9	3020-01 D	125 hp	\$379
N-2107-9-19 or ‘-14-2 (each)	3020-02 E	1.5 MMBtu/hr	\$495
N-2107-12-6	3020-05 E	359,718 gal	\$296
N-2107-13-8	3020-02 H	76.93 MMBtu/hr	\$1,238
N-2107-15-2	3020-02 H	48 MMBtu/hr	\$1,238

*259,978 gal (existing bins) + 99,740 gal (new 400-tons silo)

Appendixes

- A: Draft ATCs
- B: Current PTOs
- C: BACT Guideline
- D: BACT Analysis
- E: HRA Summary
- F: Quarterly Net Emissions Change
- G: Compliance Certification
- H: HAP Calculations
- I: ERC Surplus Analyses
- J: ERC Withdrawal Calculations

Appendix A
Draft ATCs

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-2107-5-9

LEGAL OWNER OR OPERATOR: DARLING INGREDIENTS INC

MAILING ADDRESS: P O BOX 1608
TURLOCK, CA 95381

LOCATION: 11946 CARPENTER RD
CROWS LANDING, CA 95313

EQUIPMENT DESCRIPTION:

MODIFICATION OF A RAW MATERIAL RECEIVING OPERATION EQUIPPED WITH OUTDOOR RAW MATERIAL RECEIVING CONCRETE SLABS, GRINDING SYSTEM, AND PRIMARY AND SECONDARY WASTEWATER TREATMENT SYSTEM WITH DAF UNIT AND AN OUTDOOR WASTEWATER LAGOON SYSTEM (PERMIT EXEMPT LOW EMITTING UNIT): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY (825 TONS/DAY) TO 1,850,000 LB/DAY (925 TONS/DAY) AND 602,250,000 LB/YEAR (301,125 TONS/YR) TO 675,250,000 LB/YR (337,625 TONS/YR) AND INSTALL A NEW SEPARATE RAW MATERIAL GRINDER AND PUMPS

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The Air Pollution Control District shall be immediately notified of any breakdown or malfunction that reduces or disrupts the normal processing of odors required by this permit. [District Rules 1100 and 4102] Federally Enforceable Through Title V Permit
5. The District shall have authority to investigate possible odors alleged to originate from the facility and to make a determination of whether or not a nuisance exists, either in response to a complaint or on its own initiative. [District Rules 1070 and 4102] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

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6. The APCO or any authorized representative shall have access to inspect any equipment, operation, records, method required in this permit, to sample emissions from the source or require samples to be taken, or perform any other actions to assure compliance with the requirements of this permit and all District rules and regulations. [District Rule 1070] Federally Enforceable Through Title V Permit
7. The premises of the plant except for raw material receiving and storage areas and their associated pits and bins shall be kept clean and free from spillage of raw or finished materials, refuse, and standing pools of water which may present a nuisance condition. All raw material spills shall be cleaned up immediately. [District Rule 4102]
8. The delivery truck holding time shall not exceed 48 hours and the animal mortality holding time shall not exceed 96 hours from the time the raw materials enter the property. [District Rule 4102]
9. No storage of raw materials outside of the pits, bins, or open slab areas is permitted. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
10. Raw material receiving areas (pits/bins and open slabs) not currently holding raw material for processing shall be cleaned daily. [District Rule 4102]
11. Trucks waiting their turn to unload within the 48 or 96 hour unload time limitation are not considered storage outside of the pit/slab area. [District Rule 4102]
12. All trucks and truck tires delivering raw material shall be washed clean of raw material and raw material residue prior to exiting the facility premises in order to minimize trackout of raw material and raw material residue. [District Rule 4102]
13. All raw material trucks shall be maintained in condition to prevent leakage of any solid or liquid material. [District Rule 4102]
14. The rendering plant shall not be operated unless the odor control system is operating and in full use. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total facility raw material process rate shall not exceed 1,850,000 pounds (925 tons) per day or 675,250,000 pounds (337,625 tons) per year. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Except during periods of equipment breakdown as determined by the District under Rule 1100, all raw material received shall be processed within 24 hours of entering the receiving pits and in compliance with other conditions in this permit. Raw material shall be monitored to ensure that processing is performed within this time limit using plant processing records. [District Rules 1100 and 4102]
17. If raw material cannot be processed within the time constraints of this permit, raw material shall be diverted to other facilities. No further deliveries shall be received until a 48 (or 96) hour turnaround for raw material is achievable. [District Rule 4102]
18. The owner and/or operator shall comply with all the provisions of District Rule 4102, Nuisance. [District Rule 4102]
19. Permittee shall keep daily and annual records of the amount of raw material received. [District Rule 2201] Federally Enforceable Through Title V Permit
20. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

DRAFT

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

DRAFT

ISSUANCE DATE: DRAFT

PERMIT NO: N-2107-9-19

LEGAL OWNER OR OPERATOR: DARLING INGREDIENTS INC

MAILING ADDRESS: P O BOX 1608
TURLOCK, CA 95381

LOCATION: 11946 CARPENTER RD
CROWS LANDING, CA 95313

EQUIPMENT DESCRIPTION:

MODIFICATION OF FOOD PROCESSING BYPRODUCT RECYCLING OPERATION INCLUDING THREE DUPPS PRE-HEAT COOKERS, A HAARSLEV 2564 COOKER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-14-0): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY (825 TONS/DAY) TO 1,850,000 LB/DAY (925 TONS/DAY) AND 602,250,000 LB/YEAR (301,125 TONS/YR) TO 675,250,000 LB/YR (337,625 TONS/YR); REPLACE 3 DUPPS BATCH COOKERS WITH DUPPS MODEL 200U CONTINUOUS COOKER, A NEW AIR-COOLED CONDENSER, AND SUPPORTING EQUIPMENT INCLUDING 2 PRESSES, A CLOSED ENTRAINMENT TRAP AND FAT SCREEN, AND A NEW CENTRIFUGE; UPGRADE THE EXISTING ODOR CONTROL SYSTEM BY INSTALLING TWO SETS OF A VENTURI SCRUBBER AND A PACKED-BED WET SCRUBBER PRIOR TO THE EXISTING RTO AND VENTURI SCRUBBER CONFIGURATION; INSTALL TWO 15,000-GALLON DAY TANKS FOR FAT STORAGE (PERMIT-EXEMPT UNITS); AND TO REFURBISH THE RTO TO UPGRADE ITS VALVE SYSTEM FOR EXCHANGING AIR BETWEEN THE RTO CHAMBERS (NO CHANGE TO RTO EXHAUST AIRFLOW RATE OR HEAT INPUT RATE)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

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3. The operator shall install, maintain, and operate each scrubber in accordance with the scrubber manufacturer recommendations. The manufacturer recommendations shall be kept as record in the permit file. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rules 2520, 9.3.2, 4801 and Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
6. Tallow and yellow grease storage tanks shall be kept in good operating condition. These tanks shall not contribute to a nuisance condition. [District Rule 4102]
7. The shared RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The combined total raw material processed through the equipment under permits N-2107-9 and N-2107-14 shall not exceed any of the following limits: 1,850,000 lb/day (925 tons/day) and 675,250,000 lb/yr (337,625 tons/yr). [District Rule 2201] Federally Enforceable Through Title V Permit
9. The combined total emissions from the process lines (N-2107-9 and N-2107-14), at the RTO exhaust, shall not exceed any of the following: 0.98 lb-NO_x/MMBtu and 2.94 lb-NO_x/hr, 0.15 lb-SO_x/ton of raw material processed, 0.07275 lb-PM₁₀/ton of raw material processed, 1.12 lb-CO/MMBtu and 3.36 lb-CO/hr, and 0.03 lb-VOC/ton of raw material processed. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Source testing to measure NO_x, SO_x, PM₁₀, CO and VOC emissions, at the exhaust stack of the RTO, shall be conducted within 60 days of initial startup under this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
12. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 1081] Federally Enforceable Through Title V Permit
13. During source testing, the equipment under permit N-2107-9 and N-2107-14 shall either be operated at or above 90% of its maximum hourly processing capability, or at or above 90% of its maximum hourly production in the previous year. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Source testing to measure NO_x emissions shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
15. Source testing to measure CO emissions shall be determined using EPA Method 10 or ARB Method 100. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
16. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
17. Source testing to measure SO_x emissions shall be conducted using either CARB Methods 100 or EPA Method 6. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
18. Source testing to measure PM₁₀ shall be conducted using EPA methods 201 and 202, or EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

19. Source testing to measure the VOC emissions shall be conducted using EPA Methods 18, 25, 25A, or 25B or CARB Method 100. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
20. Source testing to measure the VOC emissions from the shared RTO exhaust shall be conducted at least once every 24 months. [District Rule 2201] Federally Enforceable Through Title V Permit
21. During the initial source testing, the permittee shall establish minimum solution circulation rate (gallons per minute (gpm)) for each scrubber, minimum solution conductivity (micro mhos/cm) for the packed-bed wet scrubbers, and differential pressure range (inches of water column) across each scrubber. The established parameters shall be administratively included in the Permit to Operate. The permittee must maintain each scrubber at or above the established minimum solution circulation rate (gpm) and solution conductivity (micro mhos/cm), and operate the scrubbers within established differential pressure (inches of water column), at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Each packed-bed wet scrubber shall be equipped with an operational solution conductivity analyzer that monitors and records the conductivity of scrubber solution. The instruments shall be maintained in good working condition at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Each scrubber shall be equipped with an operational differential pressure gauge to indicate the pressure difference across the scrubber in inches of water column. The gauge shall be maintained in good working condition at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Each scrubber shall be equipped with an operational flow meter to measure solution circulation rate (gpm). The instruments shall be maintained in good working condition at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. The shared RTO shall be operated with a combustion chamber temperature of no less than 1400 degrees F and the retention time shall be no less than one second. A continuous temperature monitoring and recording device shall be used and kept in good working order. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
27. The shared RTO shall be heated to proper operating temperature prior to any contaminated process air entering the oxidizer. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
28. The shared RTO shall continue to operate after the shut-down of the rendering processes until all contaminated process air is incinerated. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
29. The owner or operator shall keep a record of the shared RTO combustion chamber temperature readings collected from the data recorder on a daily basis. [District Rule 2201] Federally Enforceable Through Title V Permit
30. The owner or operator shall keep a daily record of the combined quantity of raw material processed by units N-2107-9 and N-2107-14. [District Rule 2201] Federally Enforceable Through Title V Permit
31. The owner or operator shall maintain records of the following items on a daily basis: (a) Scrubber solution conductivity (micro mhos/cm) for each packed-bed wet scrubber; (b) Scrubber solution flow rate (gpm) for each scrubber; and (c) Differential pressure (inches of water column) across the packing (packed bed scrubber) or throat (venturi scrubber) of the scrubber. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Facility-wide PM10 emissions shall not exceed 29,200 lbs per year. Operator shall maintain copies of all natural gas fuel invoices, and records of hours of operation of the shared RTO in order to show compliance with this emissions limit. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. All records shall be retained for a minimum of five years, and shall be made readily available for District inspection upon request. [District Rules 1070, 2201, and 2520, 9.4.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

34. Prior to operating equipment under this Authority to Construct permits N-2107-9-19 and '-14-2, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 805 lb, 2nd quarter - 805 lb, 3rd quarter - 806 lb, and fourth quarter - 806 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
35. ERC Certificate Numbers C-1298-2 and S-4346-2 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

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*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

DRAFT

ISSUANCE DATE: DRAFT

PERMIT NO: N-2107-12-6

LEGAL OWNER OR OPERATOR: DARLING INGREDIENTS INC

MAILING ADDRESS: P O BOX 1608
TURLOCK, CA 95381

LOCATION: 11946 CARPENTER RD
CROWS LANDING, CA 95313

EQUIPMENT DESCRIPTION:

MODIFICATION OF PROTEIN MEAL FINISHING AND LOADOUT OPERATION WITH ONE DRAG LINE CONVEYOR, ONE 104 TON STORAGE/LOADOUT BIN, THREE 84 TON STORAGE/LOADOUT BINS, ONE 450 TON STORAGE/LOADOUT BIN, CRAX RECEIVING, THREE HAMMERMILLS, THREE SCREENS, AND A LOADOUT BUILDING WITH VERTILOK STORAGE/LOADOUT BINS: TO INSTALL A SPECIES SEGREGATION ENCLOSED MECHANICAL CONVEYANCE FOR DELIVERY OF PROTEIN TO A SPECIES SEGREGATION THE FOLLOWING NEW EQUIPMENT - CURING BIN, A HAMMERMILL, A SCREEN, BUCKET ELEVATOR, 400-TON STORAGE/LOADOUT BIN WITH BIN VENT FILTRATION SYSTEM, AND A NEW LOADOUT BUILDING. THE NEW HAMMERMILL AND SCREEN SYSTEM WILL BE SERVED BY AN ASPIRATOR CONNECTED TO A CYCLONE DISCHARGE ROUTED THROUGH A BAG FILTER INSIDE THE BUILDING.

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All loadout material trucks shall be maintained in condition to prevent leakage of solid or liquid material. [District Rule 4102]
4. Equipment shall be operated in such a manner as to not constitute a nuisance or annoyance to a considerable number of people. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

N-2107-12-6 : Sep 22 2022 10:43AM -- KAHLOJ : Joint Inspection NOT Required

5. The District shall have authority to investigate possible odors alleged to originate from the facility and to make a determination of whether or not a nuisance exists, either in response to a complaint or on its own initiative. [District Rule 4102]
6. The District shall have access to the facility at any time to inspect operations, review records or perform other actions to assure compliance. [District Rule 1070] Federally Enforceable Through Title V Permit
7. The combined total quantity of protein meal loaded into trucks/containers for shipping through both the old (existing) and new loadout areas shall not exceed 1,200 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. PM10 emissions from the protein meal finishing and loadout operation shall not exceed 0.00333 pounds per ton of protein meal loaded out. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Permittee shall keep a daily record of the combined quantity of protein meal loaded out. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be maintained and retained on-site for a period of at least five years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

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*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-2107-13-8

LEGAL OWNER OR OPERATOR: DARLING INGREDIENTS INC

MAILING ADDRESS: P O BOX 1608
TURLOCK, CA 95381

LOCATION: 11946 CARPENTER RD
CROWS LANDING, CA 95313

EQUIPMENT DESCRIPTION:

MODIFICATION OF 76.93 MMBTU/HR NEBRASKA MODEL NS-E-57 NATURAL GAS-FIRED BOILER EQUIPPED WITH A FLUE GAS RECIRCULATION (FGR) SYSTEM AND AMMONIA SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM: RE-ESTABLISH PM10 EMISSION FACTOR FROM 0.0076 LB/MMBTU TO 0.003 LB/MMBTU

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The unit shall only be fired on PUC-regulated natural gas. [District Rules 2201 and 4320, and 40 CFR 60.48c(d)] Federally Enforceable Through Title V Permit
6. The boiler shall be equipped with a non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit. [40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

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7. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO_x @ 3% O₂ or 0.008 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 100 ppmvd CO @ 3% O₂ or 0.073 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. The ammonia emission rate shall not exceed 10.0 ppmvd @ 3% O₂ over a 15 minute averaging period. [District Rule 4102]
9. Source testing to measure natural gas combustion NO_x, CO, and NH₃ emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests when unit is fired on natural gas, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
13. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit
17. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rule 4320] Federally Enforceable Through Title V Permit
18. Fuel sulfur content shall be determined using EPA Method 11 or EPA Method 15 or District, CARB and EPA approved alternative methods. [District Rule 4320] Federally Enforceable Through Title V Permit
19. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
20. The permittee shall monitor and record the stack concentration of NO_x, CO, NH₃ and O₂ at least once during each month in which source testing is not performed. NO_x, CO and O₂ monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH₃ monitoring shall be conducted utilizing gas detection tubes (Dräger brand or District approved equivalent). Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
21. The ammonia (NH₃) flow rate range shall be established during required source tests. [40 CFR Part 64] Federally Enforceable Through Title V Permit
22. The permittee shall monitor and record the ammonia (NH₃) flow rate at least once during each day. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

23. If either the NO_x, CO or NH₃ concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
24. All NO_x, CO, O₂ and NH₃ emission readings and NH₃ flow rate readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
25. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. Ammonia emission readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃ and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH₃ emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
28. The permittee shall record and maintain records of the amount of fuel combusted during each calendar month. The record shall be updated on at least a monthly basis. [40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320, 40 CFR Part 64, and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit
30. No later than May 1, 2022, the operator shall submit an emission control plan (ECP) that contains the following information: Permit to Operate number, fuel type and higher heating value (HHV) of the fuel, annual fuel consumption (expressed in Btu/yr), current emission level, including method used to determine emission level, NO_x limit to be satisfied pursuant to section 5.2 Table 2 or emission fee payment to be made pursuant to section 5.3 and plan of actions, including a schedule of increments of progress, which will be taken to satisfy the requirements of Section 5.0 and the compliance schedule in Section 7.0 of District Rule 4320 (12/17/2020). [District Rule 4320]

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*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

DRAFT

ISSUANCE DATE: DRAFT

PERMIT NO: N-2107-14-2

LEGAL OWNER OR OPERATOR: DARLING INGREDIENTS INC
MAILING ADDRESS: P O BOX 1608
TURLOCK, CA 95381

LOCATION: 11946 CARPENTER RD
CROWS LANDING, CA 95313

EQUIPMENT DESCRIPTION:

MODIFICATION OF FEATHER RECYCLING OPERATION CONSISTING OF AN INDOOR FEATHER RECEIVING HOPPER, A STEAM-FIRED CONTINUOUS FEATHER HYDROLYZER, A FEATHER PRESS, A STEAM-FIRED FEATHER DRYER, A BLOOD STAGING TANK, BLOOD CENTRIFUGE, SPRAY CHAMBER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-9-17): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY (825 TONS/DAY) TO 1,850,000 LB/DAY (925 TONS/DAY) AND 602,250,000 LB/YEAR (301,125 TONS/YR) TO 675,250,000 LB/YR (337,625 TONS/YR); UPGRADE THE EXISTING ODOR CONTROL SYSTEM BY INSTALLING TWO SETS OF A VENTURI SCRUBBER AND A PACKED-BED WET SCRUBBER PRIOR TO THE EXISTING RTO AND VENTURI SCRUBBER CONFIGURATION; AND TO REFURBISH THE RTO TO UPGRADE ITS VALVE SYSTEM FOR EXCHANGING AIR BETWEEN THE RTO CHAMBERS (NO CHANGE TO RTO EXHAUST AIRFLOW RATE OR HEAT INPUT RATE)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The operator shall install, maintain, and operate each scrubber in accordance with the scrubber manufacturer recommendations. The manufacturer recommendations shall be kept as record in the permit file. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

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Brian Clements, Director of Permit Services

N-2107-14-2 : Sep 22 2022 10:43AM -- KAHLOJ : Joint Inspection NOT Required

4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rules 2520, 9.3.2, 4801 and Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
6. The shared RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The combined total raw material processed through the equipment under permits N-2107-9 and N-2107-14 shall not exceed any of the following limits: 1,850,000 lb/day (925 tons/day) and 675,250,000 lb/yr (337,625 tons/yr). [District Rule 2201] Federally Enforceable Through Title V Permit
8. The combined total emissions from the process lines (N-2107-9 and N-2107-14), at the RTO exhaust, shall not exceed any of the following: 0.98 lb-NO_x/MMBtu and 2.94 lb-NO_x/hr, 0.15 lb-SO_x/ton of raw material processed, 0.07275 lb-PM₁₀/ton of raw material processed, 1.12 lb-CO/MMBtu and 3.36 lb-CO/hr, and 0.03 lb-VOC/ton of raw material processed. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Source testing to measure NO_x, SO_x, PM₁₀, CO and VOC emissions, at the exhaust stack of the RTO, shall be conducted within 60 days of initial startup under this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
11. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 1081] Federally Enforceable Through Title V Permit
12. During source testing, the equipment under permit N-2107-9 and N-2107-14 shall either be operated at or above 90% of its maximum hourly processing capability, or at or above 90% of its maximum hourly production in the previous year. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Source testing to measure NO_x emissions shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
14. Source testing to measure CO emissions shall be determined using EPA Method 10 or ARB Method 100. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
15. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
16. Source testing to measure SO_x emissions shall be conducted using either CARB Methods 100 or EPA Method 6. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
17. Source testing to measure PM₁₀ shall be conducted using EPA methods 201 and 202, or EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
18. Source testing to measure the VOC emissions shall be conducted using EPA Methods 18, 25, 25A, or 25B or CARB Method 100. Should it be determined that another set of test methods is more appropriate, such test methods shall be approved by the District prior to initial source testing. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

19. Source testing to measure the VOC emissions from the shared RTO exhaust shall be conducted at least once every 24 months. [District Rule 2201] Federally Enforceable Through Title V Permit
20. During the initial source testing, the permittee shall establish minimum solution circulation rate (gallons per minute (gpm)) for each scrubber, minimum solution conductivity (micro mhos/cm) for the packed-bed wet scrubbers, and differential pressure range (inches of water column) across each scrubber. The established parameters shall be administratively included in the Permit to Operate. The permittee must maintain each scrubber at or above the established minimum solution circulation rate (gpm) and solution conductivity (micro mhos/cm), and operate the scrubbers within established differential pressure (inches of water column), at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Each packed-bed wet scrubber shall be equipped with an operational solution conductivity analyzer that monitors and records the conductivity of scrubber solution. The instruments shall be maintained in good working condition at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Each scrubber shall be equipped with an operational differential pressure gauge to indicate the pressure difference across the scrubber in inches of water column. The gauge shall be maintained in good working condition at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Each scrubber shall be equipped with an operational flow meter to measure solution circulation rate (gpm). The instruments shall be maintained in good working condition at all times when equipment under permit N-2107-9 and/or N-2107-14 operates. [District Rule 2201] Federally Enforceable Through Title V Permit
24. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
25. The shared RTO shall be operated with a combustion chamber temperature of no less than 1400 degrees F and the retention time shall be no less than one second. A continuous temperature monitoring and recording device shall be used and kept in good working order. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
26. The shared RTO shall be heated to proper operating temperature prior to any contaminated process air entering the oxidizer. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
27. The shared RTO shall continue to operate after the shut-down of the rendering processes until all contaminated process air is incinerated. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
28. The owner or operator shall keep a record of the shared RTO combustion chamber temperature readings collected from the data recorder on a daily basis. [District Rule 2201] Federally Enforceable Through Title V Permit
29. The owner or operator shall keep a daily record of the combined quantity of raw material processed by units N-2107-9 and N-2107-14. [District Rule 2201] Federally Enforceable Through Title V Permit
30. The owner or operator shall maintain records of the following items on a daily basis: (a) Scrubber solution conductivity (micro mhos/cm) for each packed-bed wet scrubber; (b) Scrubber solution flow rate (gpm) for each scrubber; and (c) Differential pressure (inches of water column) across the packing (packed bed scrubber) or throat (venturi scrubber) of the scrubber. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Facility-wide PM10 emissions shall not exceed 29,200 lbs per year. Operator shall maintain copies of all natural gas fuel invoices, and records of hours of operation of the shared RTO in order to show compliance with this emissions limit. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
32. All records shall be retained for a minimum of five years, and shall be made readily available for District inspection upon request. [District Rules 1070, 2201, and 2520, 9.4.2] Federally Enforceable Through Title V Permit
33. Prior to operating equipment under this Authority to Construct permits N-2107-9-19 and '-14-2, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 805 lb, 2nd quarter - 805 lb, 3rd quarter - 806 lb, and fourth quarter - 806 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

34. ERC Certificate Numbers C-1298-2 and S-4346-2 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

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*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

DRAFT

ISSUANCE DATE: DRAFT

PERMIT NO: N-2107-15-2

LEGAL OWNER OR OPERATOR: DARLING INGREDIENTS INC

MAILING ADDRESS: P O BOX 1608
TURLOCK, CA 95381

LOCATION: 11946 CARPENTER RD
CROWS LANDING, CA 95313

EQUIPMENT DESCRIPTION:

MODIFICATION OF 48 MMBTU/HR BABCOCK & WILCOX MODEL FMO-40 NATURAL GAS, DENATURED YELLOW GREASE, OR YELLOW GREASE-FIRED BOILER WITH A TODD MODEL V4851GO LOW-NOX BURNER, A FLUE GAS RECIRCULATION SYSTEM (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM: RE-ESTABLISH PM10 EMISSION FACTOR FROM 0.0076 LB/MMBTU TO 0.0029 LB/MMBTU, AND TO ELIMINATE THE USE OF LIQUID FUEL DURING NATURAL GAS FUEL CURTAILMENT

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320; and 40 CFR 60.42c(d)] Federally Enforceable Through Title V Permit
5. The boiler shall be equipped with a non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit. [District Rule 2201 and 40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

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Brian Clements, Director of Permit Services

N-2107-15-2 : Sep 22 2022 10:43AM -- KAHLONJ : Joint Inspection NOT Required

6. Except during start-up and shutdown, emissions from natural gas combustion shall not exceed any of the following limits: 6 ppmvd NO_x @ 3% O₂ or 0.0073 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 50 ppmvd CO @ 3% O₂ or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. During start-up and shutdown periods, emissions from natural gas combustion shall not exceed any of the following limits: 30 ppmvd NO_x @ 3% O₂ or 0.036 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 50 ppmvd CO @ 3% O₂ or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. The total duration of startup and shutdown time shall not exceed any of the following limits: 2.0 hours startup per day, 2.0 hours shutdown per day, or 730 hours total startup and shutdown time per year. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. The ammonia (NH₃) emission rate shall not exceed 10.0 ppmvd @ 3% O₂ over a 15 minute averaging period. [District Rule 4102]
10. Source testing to measure natural gas combustion NO_x, CO, and NH₃ emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests when unit is fired on natural gas, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
14. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit
18. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rule 4320] Federally Enforceable Through Title V Permit
19. Fuel sulfur content shall be determined using EPA Method 11 or EPA Method 15 or District, CARB and EPA approved alternative methods. [District Rule 4320] Federally Enforceable Through Title V Permit
20. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

21. The permittee shall monitor and record the stack concentration of NO_x, CO, NH₃ and O₂ at least once during each month in which source testing is not performed. NO_x, CO and O₂ monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH₃ monitoring shall be conducted utilizing gas detection tubes (Draeger brand or District approved equivalent). Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
22. If either the NO_x, CO or NH₃ concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. All NO_x, CO, O₂ and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. Ammonia emissions readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rule 4102]
26. Daily and annual records of start-up and shutdown durations and number of occurrences of each shall be kept. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃ and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH₃ emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. The permittee shall record and maintain records of the amount of fuel combusted during each calendar month. The record shall be updated on at least a monthly basis. [40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320; and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit
30. No later than May 1, 2022, the operator shall submit an emission control plan (ECP) that contains the following information: Permit to Operate number, fuel type and higher heating value (HHV) of the fuel, annual fuel consumption (expressed in Btu/yr), current emission level, including method used to determine emission level, NO_x limit to be satisfied pursuant to section 5.2 Table 2 or emission fee payment to be made pursuant to section 5.3 and plan of actions, including a schedule of increments of progress, which will be taken to satisfy the requirements of Section 5.0 and the compliance schedule in Section 7.0 of District Rule 4320 (12/17/2020). [District Rule 4320]

Appendix B
Current PTOs

San Joaquin Valley

Air Pollution Control District

PERMIT UNIT: N-2107-5-10

EXPIRATION DATE: 08/31/2026

EQUIPMENT DESCRIPTION:

A RAW MATERIAL RECEIVING OPERATION EQUIPPED WITH OUTDOOR RAW MATERIAL RECEIVING CONCRETE SLABS, GRINDING SYSTEM, AND PRIMARY AND SECONDARY WASTEWATER TREATMENT SYSTEM WITH DAF UNIT AND AN OUTDOOR WASTEWATER LAGOON SYSTEM (PERMIT EXEMPT LOW EMITTING UNIT)

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District NSR Rule] Federally Enforceable Through Title V Permit
2. The Air Pollution Control District shall be immediately notified of any breakdown or malfunction that reduces or disrupts the normal processing of odors required by this permit. [District Rules 1100 and 4102] Federally Enforceable Through Title V Permit
3. The District shall have authority to investigate possible odors alleged to originate from the facility and to make a determination of whether or not a nuisance exists, either in response to a complaint or on its own initiative. [District Rules 1070 and 4102] Federally Enforceable Through Title V Permit
4. The APCO or any authorized representative shall have access to inspect any equipment, operation, records, method required in this permit, to sample emissions from the source or require samples to be taken, or perform any other actions to assure compliance with the requirements of this permit and all District rules and regulations. [District Rule 1070] Federally Enforceable Through Title V Permit
5. The premises of the plant except for raw material receiving and storage areas and their associated pits and bins shall be kept clean and free from spillage of raw or finished materials, refuse, and standing pools of water which may present a nuisance condition. All raw material spills shall be cleaned up immediately. [District Rule 4102]
6. The delivery truck holding time shall not exceed 48 hours and the animal mortality holding time shall not exceed 96 hours from the time the raw materials enter the property. [District Rule 4102]
7. No storage of raw materials outside of the pits, bins, or open slab areas is permitted. [District NSR Rule and Rule 4102] Federally Enforceable Through Title V Permit
8. Raw material receiving areas (pits/bins and open slabs) not currently holding raw material for processing shall be cleaned daily. [District Rule 4102]
9. Trucks waiting their turn to unload within the 48 or 96 hour unload time limitation are not considered storage outside of the pit/slab area. [District Rule 4102]
10. All trucks and truck tires delivering raw material shall be washed clean of raw material and raw material residue prior to exiting the facility premises in order to minimize trackout of raw material and raw material residue. [District Rule 4102]
11. All raw material trucks shall be maintained in condition to prevent leakage of any solid or liquid material. [District Rule 4102]
12. The rendering plant shall not be operated unless the odor control system is operating and in full use. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

13. Total facility raw material process rate shall not exceed 1,650,000 pounds (825 tons) per day or 602,250,000 pounds (301,125 tons) per year. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
14. Except during periods of equipment breakdown as determined by the District under Rule 1100, all raw material received shall be processed within 24 hours of entering the receiving pits and in compliance with other conditions in this permit. Raw material shall be monitored to ensure that processing is performed within this time limit using plant processing records. [District Rules 1100 and 4102]
15. If raw material cannot be processed within the time constraints of this permit, raw material shall be diverted to other facilities. No further deliveries shall be received until a 48 (or 96) hour turnaround for raw material is achievable. [District Rule 4102]
16. The owner and/or operator shall comply with all the provisions of District Rule 4102, Nuisance. [District Rule 4102]
17. Permittee shall keep daily and annual records of the amount of raw material received. [District Rule 2201] Federally Enforceable Through Title V Permit
18. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley *Air Pollution Control District*

PERMIT UNIT: N-2107-9-20

EXPIRATION DATE: 08/31/2026

EQUIPMENT DESCRIPTION:

FOOD PROCESSING BYPRODUCT RECYCLING OPERATION INCLUDING THREE DUPPS PRE-HEAT COOKERS, A HAARSLEV 2564 COOKER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-14)

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rules 2520, 9.3.2, 4801 and Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
3. Tallow and yellow grease storage tanks shall be kept in good operating condition. These tanks shall not contribute to a nuisance condition. [District Rule 4102]
4. The shared RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The total facility raw material process rate shall not exceed 1,650,000 pounds (825 tons) per day or 602,250,000 pounds (301,125 tons) per year from the combined units N-2107-9 and N-2107-14. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Combined emissions from the process lines (N-2107-9 and N-2107-14) served by the RTO shall not exceed any of the following: 0.98 lb-NO_x/MMBtu, 0.15 lb-SO_x/ton of raw material processed, 0.097 lb-PM₁₀/ton of raw material processed, 1.12 lb-CO/MMBtu, and 0.03 lb-VOC/ton of raw material processed. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Source testing to measure the VOC emissions from the shared RTO exhaust shall be conducted at least once every 24 months. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Source testing shall be performed while processing raw material under normal operating conditions or another load previously approved by the District in writing. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Source testing to measure the VOC emissions shall be conducted using EPA Methods 18, 25, 25A, or 25B or CARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
11. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. The shared RTO shall be operated with a combustion chamber temperature of no less than 1400 degrees F and the retention time shall be no less than one second. A continuous temperature monitoring and recording device shall be used and kept in good working order. [District Rules 2201 and 4104, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
13. The shared RTO shall be heated to proper operating temperature prior to any contaminated process air entering the oxidizer. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
14. The shared RTO shall continue to operate after the shut-down of the rendering processes until all contaminated process air is incinerated. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
15. Permittee shall keep a record of the shared RTO combustion chamber temperature readings. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
16. Permittee shall keep a daily record of the combined quantity of raw material processed by units N-2107-9 and N-2107-14. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Facility-wide PM10 emissions shall not exceed 29,200 lbs per year. Operator shall maintain copies of all natural gas fuel invoices, and records of hours of operation of the shared RTO in order to show compliance with this emissions limit. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
18. All records shall be retained for a minimum of five years, and shall be made readily available for District inspection upon request. [District Rules 1070, 2201, and 2520, 9.4.2] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

*San Joaquin Valley
Air Pollution Control District*

PERMIT UNIT: N-2107-12-7

EXPIRATION DATE: 08/31/2026

EQUIPMENT DESCRIPTION:

PROTEIN MEAL FINISHING AND LOADOUT OPERATION WITH ONE DRAG LINE CONVEYOR, ONE 104 TON STORAGE/LOADOUT BIN, THREE 84 TON STORAGE/LOADOUT BINS, ONE 450 TON STORAGE/LOADOUT BIN, CRAX RECEIVING, THREE HAMMERMILLS, THREE SCREENS, AND A LOADOUT BUILDING WITH VERTILOK STORAGE/LOADOUT BINS

PERMIT UNIT REQUIREMENTS

1. All loadout material trucks shall be maintained in condition to prevent leakage of solid or liquid material. [District Rule 4102]
2. Equipment shall be operated in such a manner as to not constitute a nuisance or annoyance to a considerable number of people. [District Rule 4102]
3. The District shall have authority to investigate possible odors alleged to originate from the facility and to make a determination of whether or not a nuisance exists, either in response to a complaint or on its own initiative. [District Rule 4102]
4. The District shall have access to the facility at any time to inspect operations, review records or perform other actions to assure compliance. [District Rule 1070] Federally Enforceable Through Title V Permit
5. The total quantity of protein meals loaded into trucks/containers for shipping shall not exceed 1,200 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Emissions from the protein meal finishing and loadout operation shall not exceed 0.0025 lb-PM10/ton of protein meal loaded out. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Permittee shall keep a daily record of the combined quantity of protein meal loaded out. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All records shall be maintained and retained on-site for a period of at least five years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley

Air Pollution Control District

PERMIT UNIT: N-2107-13-9

EXPIRATION DATE: 08/31/2026

EQUIPMENT DESCRIPTION:

76.93 MMBTU/HR NEBRASKA MODEL NS-E-57 NATURAL GAS-FIRED BOILER EQUIPPED WITH A FLUE GAS RECIRCULATION (FGR) SYSTEM AND AMMONIA SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. The unit shall only be fired on PUC-regulated natural gas. [District Rules 2201 & 4320, and 40 CFR 60.48c(d)] Federally Enforceable Through Title V Permit
4. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO_x @ 3% O₂ or 0.008 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 100 ppmvd CO @ 3% O₂ or 0.073 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
5. The ammonia emission rate shall not exceed 10 ppmvd @ 3% O₂ over a 15 minute averaging period. [District Rule 4102]
6. Source testing to measure NO_x, CO, and ammonia (NH₃) emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests when unit is fired on natural gas, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
9. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

13. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
15. The permittee shall monitor and record the stack concentration of NO_x, CO, NH₃ and O₂ at least once during each month in which source testing is not performed. NO_x, CO and O₂ monitoring shall be conducted utilizing a portable analyzer that meets District specifications or District-approved monitoring equipment. NH₃ monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
16. The ammonia (NH₃) flow rate range shall be established during required source tests. [40 CFR Part 64] Federally Enforceable Through Title V Permit
17. The permittee shall monitor and record the ammonia (NH₃) flow rate at least once during each day. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit. [40 CFR Part 64] Federally Enforceable Through Title V Permit
18. If the NO_x, CO or ammonia (NH₃) concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continues to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
19. All NO_x, CO, O₂ and ammonia (NH₃) emission readings and ammonia (NH₃) flow rate readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
20. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. Ammonia (NH₃) emission readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

22. The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃ and O₂ measurements and NH₃ flow rate, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH₃ emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
23. The permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit
24. Section 60.46c lists monitoring requirements for sulfur dioxide. However, since the boilers at this facility are not subject to the sulfur dioxide standards of this rule, no standard exists to demonstrate compliance with. Thus, sulfur dioxide monitoring is not required for the boilers at this facility to demonstrate compliance with this subpart. [40 CFR 60.48c(g)(2)]
25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320, 40 CFR Part 64, and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit
26. Pursuant to Rule 4320, beginning January 1, 2025 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in the December 17, 2020 version of Rule 4320. [District Rule 4320]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley

Air Pollution Control District

PERMIT UNIT: N-2107-14-3

EXPIRATION DATE: 08/31/2026

EQUIPMENT DESCRIPTION:

FEATHER RECYCLING OPERATION CONSISTING OF AN INDOOR FEATHER RECEIVING HOPPER, A STEAM-FIRED CONTINUOUS FEATHER HYDROLYZER, A FEATHER PRESS, A STEAM-FIRED FEATHER DRYER, A BLOOD STAGING TANK, BLOOD CENTRIFUGE, SPRAY CHAMBER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-9)

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rules 2520, 9.3.2, 4801 and Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
3. The shared RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The total facility raw material process rate shall not exceed 1,650,000 pounds (825 tons) per day or 602,250,000 pounds (301,125 tons) per year from the combined units N-2107-9 and N-2107-14. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Combined emissions from the process lines (N-2107-9 and N-2107-14) served by the RTO shall not exceed any of the following: 0.98 lb-NO_x/MMBtu, 0.15 lb-SO_x/ton of raw material processed, 0.097 lb-PM₁₀/ton of raw material processed, 1.12 lb-CO/MMBtu, and 0.03 lb-VOC/ton of raw material processed. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Source testing to measure the VOC emissions from the shared RTO shall be conducted at least once every 24 months. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Source testing shall be performed while processing raw material under normal operating conditions or another load previously approved by the District in writing. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Source testing to measure the VOC emissions shall be conducted using EPA Methods 18, 25, 25A, or 25B or CARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
10. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
11. The shared RTO shall be operated with a combustion chamber temperature of no less than 1400 degrees F and the retention time shall be no less than one second. A continuous temperature monitoring and recording device shall be used and kept in good working order. [District Rules 2201 and 4104, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. The shared RTO shall be heated to proper operating temperature prior to any contaminated process air entering the oxidizer. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
13. The shared RTO shall continue to operate after the shut-down of the rendering processes until all contaminated process air is incinerated. [District Rules 2201 and 4104] Federally Enforceable Through Title V Permit
14. Permittee shall keep a record of the shared RTO combustion chamber temperature readings. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
15. Permittee shall keep a daily record of the combined quantity of material processed by units N-2107-9 and N-2107-14. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Facility-wide PM10 emissions shall not exceed 29,200 lbs per year. Operator shall maintain copies of all natural gas fuel invoices, and records of hours of operation of the shared regenerative thermal oxidizer in order to show compliance with this emissions limit. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. All records shall be retained for a minimum of five years, and shall be made readily available for District inspection upon request. [District Rules 1070, 2201, and 2520, 9.4.2] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley

Air Pollution Control District

PERMIT UNIT: N-2107-15-3

EXPIRATION DATE: 08/31/2026

EQUIPMENT DESCRIPTION:

48 MMBTU/HR BABCOCK & WILCOX MODEL FMO-40 NATURAL GAS, DENATURED YELLOW GREASE, OR YELLOW GREASE-FIRED BOILER WITH A TODD MODEL V4851GO LOW-NOX BURNER, A FLUE GAS RECIRCULATION SYSTEM (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. The unit shall only be fired on PUC-quality natural gas as the primary fuel and "liquid fuel" as a curtailment fuel. [District Rules 2201 and 4320; and 40 CFR 60.42c(d)] Federally Enforceable Through Title V Permit
3. For the purposes of this permit, "liquid fuel" means either yellow grease or yellow grease blended with no more than 1.0% No. 2 fuel oil, by volume. The sulfur content of No. 2 fuel oil blended with yellow grease shall not exceed 15 ppm. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
4. The unit shall be fired on "liquid fuel" only during natural gas curtailment for no more than 168 cumulative hours in a calendar year plus 48 hours per calendar year for equipment testing. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
5. The maximum amount of "liquid fuel" burned shall not exceed 6,409 gallons in any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The boiler shall be equipped with a non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The boiler shall be equipped with a non-resettable, totalizing liquid fuel flow meter to measure the amount of "liquid fuel" burned, in gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The NO_x emissions from this unit shall not exceed 43.5 pounds during any one day. The NO_x emissions shall be determined utilizing the following equation: [(cubic feet of natural gas burned during non-start-up and non-shutdown periods) x (7.3E-06) + (cubic feet of natural gas burned during start-up and shutdown periods) x (3.6E-05) + (gallons of "liquid fuel" burned) x (6.79E-03)]. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Except during start-up and shutdown, emissions from natural gas combustion shall not exceed any of the following limits: 6 ppmv NO_x @ 3% O₂ or 0.0073 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 50 ppmv CO @ 3% O₂ or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. During start-up and shutdown periods, emissions from natural gas combustion shall not exceed any of the following limits: 30 ppmv NO_x @ 3% O₂ or 0.036 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 50 ppmv CO @ 3% O₂ or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. When fired on "liquid fuel" during curtailment episodes, emissions from this boiler shall not exceed any of the following limits: 40 ppmv NO_x @ 3% O₂ or 0.052 lb-NO_x/MMBtu, 0.0062 lb-SO_x/MMBtu, 0.005 lb-PM₁₀/MMBtu, 142 ppmv CO @ 3% O₂ or 0.1049 lb-CO/MMBtu, or 0.0056 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. The total duration of startup and shutdown time shall not exceed any of the following limits: 2.0 hours startup per day, 2.0 hours shutdown per day, or 730 hours total startup and shutdown time per year. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. The ammonia emission rate shall not exceed 10.0 ppmvd @ 3% O₂ over a 15 minute averaging period. [District Rule 4102]
14. Source testing to measure natural gas combustion NO_x, CO, and NH₃ emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests when unit is fired on natural gas, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
18. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. Source testing for ammonia slip shall be conducted utilizing BAAQMD method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. The permittee shall monitor and record the stack concentration of NO_x, CO, NH₃ and O₂ at least once during each month in which source testing is not performed. NO_x, CO and O₂ monitoring shall be conducted utilizing a portable analyzer that meets District specifications or District-approved monitoring equipment. NH₃ monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
24. The ammonia (NH₃) flow rate range shall be established during required source tests. [40 CFR Part 64] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the ammonia (NH₃) flow rate at least once during each day. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit. [40 CFR Part 64] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

26. If the NO_x, CO or ammonia (NH₃) concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continues to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
27. All NO_x, CO, O₂ and ammonia (NH₃) emission readings and ammonia (NH₃) flow rate readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
28. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. The NO_x emission concentration, expressed in ppmv or lb/MMBtu during periods of natural gas curtailment shall be recorded. [District Rule 4320] Federally Enforceable Through Title V Permit
30. If the unit is fired on "liquid fuel" for a period exceeding 48 cumulative hours in a calendar year, the permittee shall monitor and record the stack concentration of NO_x at least once during that year using an APCO approved portable NO_x analyzer. Monitoring for "liquid fuel" NO_x emissions shall not be required when the unit is operating on primary fuel, i.e. the unit need not be fired on "liquid fuel" solely to perform monitoring. [District Rule 4320] Federally Enforceable Through Title V Permit
31. The "liquid fuel" NO_x emission readings shall be taken with the unit operating either at conditions representative of normal operations. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4320] Federally Enforceable Through Title V Permit
32. Daily and annual records of "liquid fuel" consumption consisting of the date, the amount of fuel combusted (in gallons), and the reason of combusting "liquid fuel" shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
33. Records of the daily NO_x emissions from this unit shall be kept for any day that the "liquid fuel" is burned. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
34. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
35. Copies of all natural gas fuel invoices and test results to determine compliance with the conditions of this permit shall be maintained. [District Rule 2520] Federally Enforceable Through Title V Permit
36. Daily and annual records of start-up and shutdown durations and number of occurrences of each shall be kept. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

37. Ammonia (NH₃) emission readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
38. The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃ and O₂ measurements and NH₃ flow rate, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH₃ emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4305, 4306, and 4320 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
39. The permittee shall monitor and record the cumulative annual hours of operation on "liquid fuel" during periods of natural gas curtailment and equipment testing. [District Rule 4320] Federally Enforceable Through Title V Permit
40. The permittee shall record and maintain records of the amount of each fuel combusted during each calendar month. The record shall be updated on at least a monthly basis. [40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
41. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320, 40 CFR Pat 64 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit
42. Pursuant to Rule 4320, beginning January 1, 2025 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in the December 17, 2020 version of Rule 4320. [District Rule 4320]

These terms and conditions are part of the Facility-wide Permit to Operate.

Appendix C
BACT Guideline

**San Joaquin Valley
Unified Air Pollution Control District
Best Available Control Technology (BACT) Guideline 8.3.2***

Emissions Unit: Animal Rendering Operations
Equipment Rating: All

Industry Type: Animal Rendering
Last Update: September 13, 2022

Pollutant	Achieved-in-Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NO _x	Use of an aqueous scrubber system (or equivalent controls) to reduce educe nitrogen compounds (measured in terms of ammonia) upstream of the thermal oxidizer to the maximum practically feasible extent; and use natural gas fuel in the regenerative thermal oxidizer (RTO)	None	None
SO _x	Use of an aqueous scrubber system (or equivalent controls) to reduce sulfur compounds (measured in terms of H ₂ S) upstream of the thermal oxidizer using to the maximum practically feasible extent; and use natural gas fuel in the RTO	1. 98% control using wet scrubber (or equivalent control)	None
PM ₁₀	95% control using one or more of the following control technologies: <ul style="list-style-type: none"> • Odor scrubber with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof, or • Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 seconds with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof. 	None	None
VOC	95% control using one or more of the following control technologies: <ul style="list-style-type: none"> • Odor scrubbing system utilizing a scrubbing medium of chlorine dioxide in water, or • Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second. 	None	None

*BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

Appendix D
BACT Analysis

Top-Down BACT Analysis

As discussed in section VIII under Rule 2201 – BACT discussion, operations under permits N-2107-9 and '-14 triggers BACT for NOx, SOx, PM10 and VOC emissions.

BACT guideline 8.3.2 (refer to Appendix C of this document) and project specific BACT discussion under similar project C-1172884 are reviewed to determine BACT requirement for the proposed equipment under permits N-2107-9 and '-14.

NOx:

BACT guideline 8.3.2 does not include techniques that would reduce NOx emissions from animal rendering operations. Therefore, a project specific BACT analysis is prepared for this project.

Step 1: Identify All Possible Control Technologies

BACT Clearinghouse Survey:

The following BACT clearinghouses were consulted:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD BACT clearinghouse
- Bay Area AQMD BACT clearinghouse
- Sacramento Metro AQMD BACT clearinghouse
- Santa Barbara AQMD BACT clearinghouse
- San Joaquin Valley APCD BACT clearinghouse

EPA RACT/BACT/LAER clearinghouse

The database (<https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en>) was searched using the following criteria:

Permit Date: 1/1/2011 to 9/13/2021
Process Type - "All Process Types"
Process Name Contains – rendering
Pollutant Name – All Pollutants

RBLC Search Results

List of Reports

Help

No matching RBLC facilities found.

Criteria used for search

Permit Date Between 01/01/2011 And 09/13/2021
And Process Contains 'rendering'
For USA only.

No relevant facilities were found.

CARB BACT clearinghouse

The database (<https://ww2.arb.ca.gov/our-work/programs/technology-clearinghouse/clearinghouse-tools/bact-guidelines-tool>) was searched using “rendering” keyword. The following results were found:

The screenshot shows the 'BACT Guideline List' interface. At the top right, it says 'Data Last Updated 1/21/2021'. Below the title, there are filters for 'Agency' (set to '(All)') and 'Date Filter' (set to '6/27/1991' to '12/22/2020'). A search bar contains the text 'rendering'. Below the search bar is a table with columns: Agency, District ID, Date, Title, and a selection column. Two results are shown: 'San Jo...' with District ID 8.3.2 and Date 2/21/1998, titled 'Animal Matter Rendering Plant'; and 'South Coast' with District ID n/a and Date 10/20/2000, titled 'Fish Reduction, Cooker, Digestor Evaporator And Acidulation Tank, Dryer, Metal Handling, Rendering Rendering, Meal Grinding/Handling System, Processing Equipment, Tanks/Miscellaneous Equipment'. The second result is selected with a blue dot.

South Coast AQMD BACT guidelines for “rendering” and “fish reduction” were located. The most up-to-date guideline were obtained from SCAQMD website (<http://www.aqmd.gov/docs/default-source/bact/bact-guidelines/bact-guidelines-2021-test/part-d---bact-guidelines-for-non-major-polluting-facilities.pdf>)

Rendering BACT guideline (10-20-2000):

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities***

Equipment or Process: Rendering 10-20-2000 Rev. 0

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
Processing Equipment ¹⁾					Vent to Afterburner or Boiler Fire Box (≥ 0.3 sec. Retention Time at ≥ 1200 °F) (1988)	
Meal Grinding and Handling System					Enclosed Grinding and Screening Operation with Mechanical Conveyors Transporting Meal (1988)	
Tanks and Miscellaneous Equipment					Maintain Internal Temperature Below 140 °F (1988)	

1) Processing equipment includes crax pressing, filtering, centrifuging, evaporators, cookers, dryers, and grease and blood processing.

Fish Reduction BACT guideline (2-5-2021):

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities***

10-20-2000 Rev. 0
2-1-2019 Rev. 1
2-5-2021 Rev. 2

Equipment or Process: Fish Reduction

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Cooker	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1988)					
Digester, Evaporator and Acidulation Tank	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)				Natural Gas with Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)	
Dryer	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)				Natural Gas and Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)	
Meal Handling ¹						
Rendering – Presses, Centrifuges, Separators, Tanks, Etc.	Water Condenser and Vent to Dryer Firebox (1988)					

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic South Coast AQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

South Coast AQMD BACT clearinghouse

Section I – SCAMD LAER/BACT determinations, available at <http://www.aqmd.gov/home/permits/bact/guidelines/i---scaqmd-laer-bact> were reviewed. No relevant BACT guideline was found.

Section II- Other LAER/BACT determinations, available at <http://www.aqmd.gov/home/permits/bact/guidelines/ii---other-laer-bact> were reviewed. No relevant BACT guideline was found.

Section III- Other technologies BACT determinations, available at <http://www.aqmd.gov/home/permits/bact/guidelines/iii---other-technologies> were reviewed. No relevant BACT guideline was found.

Part D guideline available at <http://www.aqmd.gov/docs/default-source/bact/bact-guidelines/bact-guidelines-2021-test/part-d---bact-guidelines-for-non-major-polluting-facilities.pdf> were reviewed. Two BACT guidelines, one for rendering and other for fish reduction were located. These guidelines are shown under CARB database search.

Bay Area AQMD BACT clearinghouse

BAAQMD BACT guidelines at <https://www.baaqmd.gov/permits/permitting-manuals/bact-tbact-workbook> were reviewed. No relevant guideline was found.

Sacramento Metro AQMD BACT clearinghouse

Sac Metro AQMD BACT guidelines available in clearinghouse document (<http://www.airquality.org/StationarySources/Documents/BACT%20Clearinghouse.pdf>) were reviewed. No relevant guideline was found.

Santa Barbara County AQMD BACT clearinghouse

SBCAPCD BACT clearinghouse available at <https://www.ourair.org/bact/> was reviewed. No relevant BACT guideline was found.

San Joaquin Valley APCD BACT clearinghouse

BACT guideline 8.3.2 does not include NOx emissions.

SIP Approved Rule Survey:

The following air District rules and regulations were reviewed:

- South Coast AQMD Rules
- Bay Area AQMD Rules
- Sacramento Metro AQMD Rules
- Santa Barbara County APCD Rules
- San Joaquin Valley APCD Rules

South Coast AQMD

Rule 415 – Odors from Rendering Facilities (November 3, 2017) was identified. This rule is not on the list of EPA’s SIP approved rules. No further discussion is required.

Rule 1147 – NOx Reductions from Miscellaneous Sources (July 7, 2017) was identified. This rule is on the list of EPA’s SIP approved rules.

Section (g)(3)(D) of this rule provides exemptions for afterburner or vapor incinerator with a District permit operating before December 5, 2008 that has an integrated thermal fluid heat exchanger that captures heat from the afterburner or vapor incinerator and an oven or furnace exhaust in order to reduce fuel consumption by an oven or the afterburner or vapor incinerator.

The RTO at Darling has an integrated thermal fluid heat exchanger that captures heat from the afterburner to reduce the fuel combustion. The RTO at the site has been operating before December 5, 2008. Further, Darling is not proposing any changes to the RTO burner system. Therefore, this unit is not subject to the NOx requirements in Rule 1147.

Bay Area AQMD

Regulation 7 – Odorous Substances (March 17, 1982) was identified. This rule is not on the list of EPA’s SIP approved rules. No further discussion is required.

Regulation 12 – Miscellaneous Standards of Performance Rule 2 Rendering Plants. This rule is on the list of EPA’s SIP approved rules. The rule does not contain any NOx standards. Therefore, no further discussion is required.

Sacramento Metro AQMD

Rule 410 – Reduction of Animal Matter was reviewed. This rule does not contain any NOx standards. Therefore, no further discussion is required.

Santa Barbara County APCD

Rule 314 – Reduction of Animal Matter (10/23/78) was identified. This rule does not contain any NOx standards. Therefore, no further discussion is required.

San Joaquin Valley APCD

Rule 4104 Reduction of Animal Matter (12/17/92) was identified. This rule does not contain any NOx standards. Therefore, no further discussion is required.

Industry Survey

Since the RTO system (control equipment) generates collateral NOx, the District practice is to review technologies that can be utilized upstream or downstream of the RTO.

Generally, for rendering operations, aqueous scrubbers are preferred to remove amines, ammonia, and other nitrogen bearing compounds upstream of the RTO. This will help in reducing process NOx that will likely form in the RTO. Use of natural gas in the RTO will also help to reduce NOx emissions.

Use of SCR downstream of the RTO is theoretically feasible; however, due to presence of sulfur compounds, the set-up would require additional sulfur removal equipment, which would be extremely challenging to design due to variety of material rendered at this facility. Presuming the design challenges overcome, there will still be some sulfur that will bind to the SCR catalyst, reduces its efficiency, useful life, require frequent cleaning and catalyst changeout. Therefore, use of SCR is not a preferred to treat exhaust from rendering operations.

List of Control Options:

Based on the search of *BACT Clearinghouse Survey* , *SIP Approved Rule Survey* and *Industry Survey* the following emission control options were developed:

Pollutant	NOx (Achieved-in-Practice)	Source
NOx	<ol style="list-style-type: none"> 1. Reduce nitrogen compounds (measured in terms of ammonia) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum*practically feasible extent 2. Use natural gas fuel in the RTO 	Industry survey

*Due to variability in rendering feed stocks, it is not practically feasible to establish a single control efficiency standard for this category.

Step 2 - Eliminate Technologically Infeasible Options

There is no technologically infeasible option listed in Step 1. Therefore, no further discussion is required.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Pollutant	Achieved in Practice	Technologically feasible	Alternate Basic Equipment
NOx	1. Reduce nitrogen compounds (measured in terms of ammonia) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum practically feasible extent 2. Use natural gas fuel in the RTO	None	None

Step 4 - Cost Effectiveness Analysis

The control techniques listed in Step 3 are the minimum level of controls that will be required for the proposed operation. There are no other technologically feasible options listed in Step 3 that requires a cost-effectiveness analysis.

Step 5 - Select BACT

BACT for the proposed operation is to reduce nitrogen compounds (measured in terms of ammonia) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum practically feasible extent and use natural gas fuel in the RTO.

Darling currently uses a venturi scrubber and a regenerative thermal oxidizer (RTO) to treat the exhaust stream from permit units N-2107-9 and '-14. Darling is proposing to upgrade the existing control system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emission controls. The proposed system is expected to reduce the process nitrogen compounds prior to combusting the stream in the RTO. The RTO is fueled on natural gas. Thus, BACT requirements are satisfied.

SOx:

BACT guideline 8.3.2 does not include technology that would help to reduce SOx emissions from the rendering operations. Therefore, a project specific BACT analysis is prepared for this project.

Step 1: Identify All Possible Control Technologies

BACT Clearinghouse Survey:

The following BACT clearinghouses were consulted:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD BACT clearinghouse
- Bay Area AQMD BACT clearinghouse
- Sacramento Metro AQMD BACT clearinghouse
- Santa Barbara AQMD BACT clearinghouse
- San Joaquin Valley APCD BACT clearinghouse

EPA RACT/BACT/LAER clearinghouse

The database (<https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en>) was searched using the following criteria:

Permit Date: 1/1/2011 to 9/13/2021
Process Type - "All Process Types"
Process Name Contains – rendering
Pollutant Name – All Pollutants

RBLC Search Results

List of Reports

Help

No matching RBLC facilities found.

Criteria used for search

Permit Date Between 01/01/2011 And 09/13/2021
And Process Contains 'rendering'
For USA only.

No relevant facilities were found.

CARB BACT clearinghouse

The database (<https://ww2.arb.ca.gov/our-work/programs/technology-clearinghouse/clearinghouse-tools/bact-guidelines-tool>) was searched using "rendering" keyword. The following results were found:

BACT Guideline List

Data Last Updated 1/21/2021

Agency: (All) Date Filter: 6/27/1991 to 12/22/2020

Search (Exact match to title, ID, or agency): rendering

Agency	District ID	Date	Title
San Jo..	8.3.2	2/21/1998	Animal Matter Rendering Plant
South Coast	n/a	10/20/2000	Fish Reduction, Cooker, Digester Evaporator And Acidulation Tank, Dryer, Metal Handling, Rendering Rendering, Meal Grinding/Handling System, Processing Equipment, Tanks/Miscellaneous Equipment

South Coast AQMD BACT guidelines for “rendering” and “fish reduction” were located. The most up-to-date guideline were obtained from SCAQMD website (<http://www.aqmd.gov/docs/default-source/bact/bact-guidelines/bact-guidelines-2021-test/part-d---bact-guidelines-for-non-major-polluting-facilities.pdf>)

Rendering BACT guideline (10-20-2000):

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0

Equipment or Process: Rendering

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
Processing Equipment ¹⁾					Vent to Afterburner or Boiler Fire Box (≥ 0.3 sec. Retention Time at ≥ 1200 °F) (1988)	
Meal Grinding and Handling System					Enclosed Grinding and Screening Operation with Mechanical Conveyors Transporting Meal (1988)	
Tanks and Miscellaneous Equipment					Maintain Internal Temperature Below 140 °F (1988)	

1) Processing equipment includes crax pressing, filtering, centrifuging, evaporators, cookers, dryers, and grease and blood processing.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions
BACT Guidelines - Part D

Fish Reduction BACT guideline (2-5-2021):

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0
2-1-2019 Rev. 1
2-3-2021 Rev. 2

Equipment or Process: Fish Reduction

Rating/Size	YOC	Criteria Pollutants			PM ₁₀	Inorganic
		NO _x	SO _x	CO		
Cooker	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1988)					
Digester, Evaporator and Acidulation Tank	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)				Natural Gas with Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)	
Dryer	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)				Natural Gas and Scrubber with Chlorinated Solution (≤ 20 ppmv Cl Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)	
Meal Handling ¹						
Wet Paving – Presses, Centrifuges, Separators, Tanks, Etc.	Water Condenser and Vent to Dryer Firebox (1988)					

1) At the date of the last revision for this category, there was no Achieved in Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic South Coast AQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

BACT Guidelines - Part D

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Fish Reduction

South Coast AQMD BACT clearinghouse

Section I – SCAMD LAER/BACT determinations, available at

<http://www.aqmd.gov/home/permits/bact/guidelines/i---scaqmd-laer-bact> were reviewed. No relevant BACT guideline was found.

Section II- Other LAER/BACT determinations, available at

<http://www.aqmd.gov/home/permits/bact/guidelines/ii---other-laer-bact> were reviewed. No relevant BACT guideline was found.

Section III- Other technologies BACT determinations, available at

<http://www.aqmd.gov/home/permits/bact/guidelines/iii---other-technologies> were reviewed. No relevant BACT guideline was found.

Part D guideline available at <http://www.aqmd.gov/docs/default-source/bact/bact-guidelines/bact-guidelines-2021-test/part-d---bact-guidelines-for-non-major-polluting-facilities.pdf> were reviewed. Two BACT guidelines, one for rendering and other for fish reduction were located. These guidelines are shown under CARB database search.

Bay Area AQMD BACT clearinghouse

BAAQMD BACT guidelines at <https://www.baaqmd.gov/permits/permitting-manuals/bact-tbact-workbook> were reviewed. No relevant guideline was found.

Sacramento Metro AQMD BACT clearinghouse

Sac Metro AQMD BACT guidelines available in clearinghouse document (<http://www.airquality.org/StationarySources/Documents/BACT%20Clearinghouse.pdf>) were reviewed. No relevant guideline was found.

Santa Barbara County AQMD BACT clearinghouse

SBCAPCD BACT clearinghouse available at <https://www.ourair.org/bact/> was reviewed. No relevant BACT guideline was found.

San Joaquin Valley APCD BACT clearinghouse
BACT guideline 8.3.2 does not include NOx emissions.

SIP Approved Rule Survey:

The following air District rules and regulations were reviewed:

- South Coast AQMD Rules
- Bay Area AQMD Rules
- Sacramento Metro AQMD Rules
- Santa Barbara County APCD Rules
- San Joaquin Valley APCD Rules

South Coast AQMD

Rule 415 – Odors from Rendering Facilities (November 3, 2017) was identified. This rule is not on the list of EPA’s SIP approved rules. No further discussion is required.

Rule 1147 – NOx Reductions from Miscellaneous Sources (July 7, 2017) was identified. This rule is on the list of EPA’s SIP approved rules. The rule does not have any standards on the SOx emissions.

Bay Area AQMD

Regulation 7 – Odorous Substances (March 17, 1982) was identified. This rule is not on the list of EPA’s SIP approved rules. No further discussion is required.

Regulation 12 – Miscellaneous Standards of Performance Rule 2 Rendering Plants. This rule is on the list of EPA’s SIP approved rules. The rule does not contain any SOx standards. Therefore, no further discussion is required.

Sacramento Metro AQMD

Rule 410 – Reduction of Animal Matter was reviewed. This rule does not contain any SOx standards. Therefore, no further discussion is required.

Santa Barbara County APCD

Rule 314 – Reduction of Animal Matter (10/23/78) was identified. This rule does not contain any SOx standards. Therefore, no further discussion is required.

San Joaquin Valley APCD

Rule 4104 Reduction of Animal Matter (12/17/92) was identified. This rule does not contain any SOx standards. Therefore, no further discussion is required.

Industry Survey

Since the RTO system (control equipment) generates collateral SOx, the District practice is to review technologies that can be utilized upstream or downstream of the RTO.

Generally, for rendering operations, aqueous scrubbers are preferred to remove sulfur compounds upstream of the RTO, such that less SOx forms in the RTO. It is technically feasible to install a wet scrubber downstream of the RTO to further reduce the SOx emissions. The exhaust temperature at the RTO stack is around 100°F.

List of Control Options:

Based on the search of *BACT Clearinghouse Survey, SIP Approved Rule Survey and Industry Survey* the following emission control options were developed:

Pollutant	Achieved in Practice	Technologically feasible	Alternate Basic Equipment
SOx	1. Reduce sulfur compounds (measured in terms of H ₂ S) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum* practically feasible extent; and 2. Use natural gas fuel in thermal oxidizer	1. 98% control using wet scrubber (or equivalent control)	None

*Due to variability in rendering feedstock, it is not practically feasible to establish a single control efficiency standard for this category.

Step 2 - Eliminate Technologically Infeasible Options

There is no technologically infeasible option listed in Step 1. Therefore, no further discussion is required.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. 98% control using wet scrubber (or equivalent control);
2. Reduce sulfur compounds (measured in terms of H₂S) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum practically feasible extent; and use natural gas fuel in thermal oxidizer

Step 4 - Cost Effectiveness Analysis

Option 1: 98% control using wet scrubber (or equivalent control)

During a rule development project, a technology vendor quoted an installed cost of wet SOx scrubber at about 6 million dollar to treat 30,000 scfm of air flow. The exhaust flow rate at the RTO discharge is 10,000 scfm. Thus, using 6/10th of rule adjustment, the cost of a wet SOx scrubber would be around 3,103,691 dollars [6 x 10⁶ ÷ (30,000/10,000)^{0.6}].

This project was deemed complete prior to June 1, 2021. Therefore, annualized capital investment is determined using 10% interest over 10 year period, and the cost effectiveness threshold of \$18,300/ton will be used.

The annualized cost would be:

$$= (3,103,691) \left[\frac{0.10 \times (1 + 0.10)^{10}}{(1 + 0.10)^{10} - 1} \right] = \$505,111/\text{yr}$$

SOx reductions would be:

$$= 50,644 \text{ lb/yr} \times 0.98 \times \text{ton}/2,000 \text{ lb} = 24.8 \text{ tons/yr}$$

Cost of reduction (\$/ton) would be:

$$= \$505,111/\text{yr} \div 24.8 \text{ tons/yr} = \$20,367/\text{yr}$$

Since the cost of reduction is more than the cost effectiveness threshold of \$18,300/ton of SOx reduced, the use of wet SOx scrubber is not required for this project.

Option 2: Reduce sulfur compounds (measured in terms of H2S) by at least 70% upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls); and use natural gas fuel in thermal oxidizer

This option is the minimum level of achieved-in-practice control required for rendering operations. Thus, cost effectiveness analysis is not conducted for this option.

Step 5 - Select BACT

BACT for the proposed operation is to reduce sulfur compounds (measured in terms of hydrogen sulfide) upstream of the thermal oxidizer using aqueous scrubber system (or equivalent controls) to the maximum practically feasible extent and use natural gas fuel in the RTO.

Darling currently uses a venturi scrubber and a regenerative thermal oxidizer (RTO) to treat the exhaust stream from permit units N-2107-9 and '-14. Darling is proposing to upgrade the existing control system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emission controls. The proposed system is expected to reduce the process nitrogen compounds prior to combusting the stream in the RTO. The RTO is fueled on natural gas. Thus, BACT requirements are satisfied.

PM10:

Step 1: Identify All Possible Control Technologies

BACT guideline 8.3.2 identifies the following technologically feasible controls:

1. Use of an odor scrubber with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%, or
2. Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%.

Step 2 - Eliminate Technologically Infeasible Options

There is no technologically infeasible option listed in Step 1. Therefore, no further discussion is required.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 seconds with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%.
2. Use of an odor scrubber with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%

Step 4 - Cost Effectiveness Analysis

Darling currently uses a venturi scrubber and a regenerative thermal oxidizer (RTO) to treat the exhaust stream from permit units N-2107-9 and '-14. As part of this project, Darling is proposing to upgrade this system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional PM emissions. The proposed pollution control system is expected to at least 95% control for the PM emissions. Therefore, cost effectiveness analysis of the options listed in Step 3 is not required.

Step 5 - Select BACT

BACT for the proposed operation is to use natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%.

Darling uses natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a particulate removal system of venturi scrubbers and packed bed scrubbers. Thus, the proposed project complies with the above BACT requirements..

VOC:

Step 1: Identify All Possible Control Technologies

BACT guideline 8.3.2 identifies the following technologically feasible controls:

1. Use of an odor scrubbing system utilizing a scrubbing medium of chlorine dioxide in water with a minimum overall control of 95% or better; or

2. Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a minimum overall control of 95%.

Step 2 - Eliminate Technologically Infeasible Options

There is no technologically infeasible option listed in Step 1. Therefore, no further discussion is required.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a minimum overall control of 95%.
2. Use of an odor scrubbing system utilizing a scrubbing medium of chlorine dioxide in water with a minimum overall control of 95% or better

Step 4 - Cost Effectiveness Analysis

Darling currently uses a venturi scrubber and a regenerative thermal oxidizer (RTO) to treat the exhaust stream from permit units N-2107-9 and '-14. As part of this project, Darling is proposing to upgrade this system by installing two new venturi scrubbers and two new packed bed scrubbers for pre-treatment ahead of the existing venturi scrubber and the RTO to achieve additional emissions control. The proposed pollution control system is expected to at least 95% control for the VOC emissions. Therefore, cost effectiveness analysis of the options listed in Step 3 is not required.

Step 5 - Select BACT

BACT for the proposed operation is to use natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second with a minimum overall control of at least 95% for VOC emissions.

Darling uses natural gas-fired thermal oxidizer with a minimum chamber temperature of 1400°F and minimum retention time of 1.0 second. Thus, BACT requirements are satisfied.

Appendix E
HRA Summary

San Joaquin Valley Air Pollution Control District

Risk Management Review and Ambient Air Quality Analysis

To: Jag Kahlon – Permit Services
 From: Will Worthley – Technical Services
 Date: June 7, 2021
 Facility Name: DARLING INGREDIENTS INC
 Location: 11946 CARPENTER RD, CROWS LANDING
 Application #(s): N-2107-5-9, -9-19, -12-6, -13-8, -14-2, -15-2
 Project #: N-1201629

1. Summary

1.1 RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
5-9	0.00	NA ¹	NA ¹	NA ¹	No	No
9-19	0.01	NA ¹	NA ¹	NA ¹	No	No
12-6	0.00	NA ¹	NA ¹	NA ¹	No	No
13-8	0.00	NA ¹	NA ¹	NA ¹	No	No
14-2	0.00	NA ¹	NA ¹	NA ¹	No	No
15-2	0.00	NA ¹	NA ¹	NA ¹	No	No
Project Totals	0.01	0.00	0.00	0.00E+00		
Facility Totals	<1	0.00	0.00	0.00E+00		

Notes:

- The project passed with a prioritization score less than 1; therefore, no further analysis was required.

1.2 AAQA

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass		Pass		
NO_x	Pass				Pass
SO_x	Pass	Pass		Pass	Pass
PM10				Pass ³	Pass ³
PM2.5				Pass ⁴	Pass ⁴

Notes:

- Results were taken from the attached AAQA Report.
- The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted below.
- Modeled PM10 concentrations were below the District SIL for non-fugitive sources of 5 µg/m³ for the 24-hour average concentration and 1 µg/m³ for the annual concentration.
- Modeled PM2.5 concentrations were below the District SIL for non-fugitive sources of 1.2 µg/m³ for the 24-hour average concentration and 0.2 µg/m³ for the annual concentration.

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 5-9, 9-19, 12-6, 13-8, 14-2, & 15-2

1. No special requirements.

2. Project Description

Technical Services received a request on January 07, 2021 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -5-9: MODIFICATION OF A RAW MATERIAL RECEIVING OPERATION EQUIPPED WITH OUTDOOR RAW MATERIAL RECEIVING CONCRETE SLABS, GRINDING SYSTEM, AND PRIMARY AND SECONDARY WASTEWATER TREATMENT SYSTEM WITH DAF UNIT AND AN OUTDOOR WASTEWATER LAGOON SYSTEM (PERMIT EXEMPT LOW EMITTING UNIT): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY TO 1,850,000 LB/DAY AND 602,250,000 LB/YR TO 675,250,000 LB/YR AND INSTALL A NEW SEPARATE RAW MATERIAL GRINDER AND PUMPS
- Unit -9-19: MODIFICATION OF FOOD PROCESSING BYPRODUCT RECYCLING OPERATION INCLUDING THREE DUPPS PRE-HEAT COOKERS, A HAARSLEV 2564 COOKER AND AIR COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-14-0): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY TO 1,850,000 LB/DAY AND 602,250,000 LB/YR TO 675,250,000 LB/YR, REPLACE 3 DUPPS BATCH COOKERS WITH DUPPS MODEL 200U CONTINUOUS COOKER, CONDENSER AND SUPPORT EQUIPMENT, UPGRADE THE EXISTING ODOR CONTROL SYSTEM BY INSTALLING A VENTURI SCRUBBER AND PACKED TOWER SCRUBBER PRIOR TO THE RTO, INSTALL TWO 15,000-GALLON DAY TANKS FOR FAT STORAGE, AND REFURBISH THE RTO
- Unit -12-6: MODIFICATION OF PROTEIN MEAL FINISHING AND LOADOUT OPERATION WITH ONE DRAG LINE CONVEYOR, ONE 104 TON STORAGE/LOADOUT BIN, THREE 84 TON STORAGE/LOADOUT BINS, ONE 450 TON STORAGE/LOADOUT BIN, CRAX RECEIVING, THREE HAMMERMILLS, THREE SCREENS, AND A LOADOUT BUILDING WITH VERTILOK STORAGE/LOADOUT BINS: TO INSTALL A SPECIES SEGREGATION ENCLOSED DRAG FOR DELIVERY OF PROTEIN TO A SPECIES SEGREGATION CURING BIN, A HAMMERMILL, SCREEN, BUCKET ELEVATOR, 400-TON STORAGE/LOADOUT BIN, AND A LOADOUT BUILDING. THE NEW SCREEN WILL BE SERVED BY AN ASPIRATOR (CYCLONE WITH BAG FILTER)
- Unit -13-8: MODIFICATION OF 76.93 MMBTU/HR NEBRASKA MODEL NS-E-57 NATURAL GAS-FIRED BOILER EQUIPPED WITH A FLUE GAS RECIRCULATION (FGR) SYSTEM AND AMMONIA SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM: RE-ESTABLISH PM10 EMISSION FACTOR FROM 0.0076 LB/MMBTU TO 0.0029 LB/MMBTU
- Unit -14-2: MODIFICATION OF FEATHER RECYCLING OPERATION CONSISTING OF AN INDOOR FEATHER RECEIVING HOPPER, A STEAM-FIRED CONTINUOUS FEATHER HYDROLYZER, A FEATHER PRESS, A STEAM-FIRED FEATHER DRYER, A BLOOD STAGING TANK, BLOOD CENTRIFUGE, SPRAY CHAMBER AND AIR

COOLED CONDENSER SERVED BY A SHARED 3.0 MMBTU/HR NATURAL GAS-FIRED GULF COAST ENVIRONMENTAL REGENERATIVE THERMAL OXIDIZER (RTO) WITH A VENTURI SCRUBBER PRIOR TO THE RTO (CONTROLS SHARED WITH N-2107-9-17): INCREASE PROCESSING RATES FROM 1,650,000 LB/DAY TO 1,850,000 LB/DAY AND 602,250,000 LB/YR TO 675,250,000 LB/YR, UPGRADE THE EXISTING ODOR CONTROL SYSTEM BY INSTALLING A VENTURI SCRUBBER AND PACKED TOWER SCRUBBER PRIOR TO THE RTO

- Unit -15-2: MODIFICATION OF 48 MMBTU/HR BABCOCK & WILCOX MODEL FMO-40 NATURAL GAS, DENATURED YELLOW GREASE, OR YELLOW GREASE-FIRED BOILER WITH A TODD MODEL V4851GO LOW-NOX BURNER, A FLUE GAS RECIRCULATION SYSTEM (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM: RE-ESTABLISH PM10 EMISSION FACTOR FROM 0.0076 LB/MMBTU TO 0.0029 LB/MMBTU, AND TO ELIMINATE THE LIQUID FUEL OPTION FOR FUEL CURTAILMENT

3. RMR Report

3.1 Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the unit's or the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required

If a refined assessment is greater than one in a million but less than 20 in one million for carcinogenic impacts (Cancer Risk) and less than 1.0 for the Acute and Chronic hazard indices(Non-Carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- Toxic emissions are derived from a 2017 source test of Sacramento Rendering Company by Best Environmental. Worst case of scrubber runs used.

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed unit was less than 1.0 (see RMR Summary Table).Therefore, no further analysis was necessary.

The following parameters were used for the review:

Source Process Rates						
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate	Receptor Distance (m)
4 & 9	1	VOC	LBS	0.125	1095	457

4. AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO₂ standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

Monitoring Stations				
Pollutant	Station Name	County	City	Measurement Year
CO	Modesto-14th Street	Stanislaus	Modesto	2018
NOx	Turlock	Stanislaus	Turlock	2018
PM10	Turlock	Stanislaus	Turlock	2018
PM2.5	Turlock	Stanislaus	Turlock	2018
SOx	Fresno - Garland	Fresno	Fresno	2018

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
9	1	0.00	0.63	0.00	0.00	0.00
12	1 (Hammer mill)	0.00	0.00	0.00	0.024	0.004
12	2 (Storage Silo)	0.00	0.00	0.00	0.0001	0.00002
12	3 (Loadout)	0.00	0.00	0.00	0.016	0.0028

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
9	1	000	5,475	000	000	000
12	1 (Hammer mill)	000	000	000	210	37
12	2 (Storage Silo)	000	000	000	1	0.17
12	3 (Loadout)	000	000	000	140	24

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined below and meteorological data for 2013-2017 from Modesto (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
9	Storage Silo	18.288	Ambient	0.291	0.031	Vertical

Area Source Parameters					
Unit ID	Unit Description	Release Height (m)	X-Length (m)	Y -Length (m)	Area (m²)
12	Hammermill	4.267	5.00	5.00	25.00

Volume Source Parameters					
Unit ID	Unit Description	Release Height (m)	Side Length (m)	Initial Lateral Dimension (m)	Initial Vertical Dimension (m)
12	Loadout	2.438	2.67	0.62	3.97

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/ Horizontal/ Capped
9	RTO	12.19	311	12.32	0.70	Vertical

5. Conclusion

5.1 RMR

The cumulative prioritization score for the facility, including this project, is less than 1.0. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit requirements listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

5.2 AAQA

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

6. Attachments

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary
- E. AAQA results

Appendix F
Quarterly Net Emissions Change

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{quarterly} = PE2_{annual} \div 4 \text{ quarters/year}$

$PE1_{quarterly} = PE1_{annual} \div 4 \text{ quarters/year}$

N-2107-5-9:

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	0	0	0

N-2107-9-19, '-14-2:

Note that QNEC are shown under permit N-2107-9-19 only.

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	6,438.5	6438.5	0
SO _x	12,661	11,292.25	1,368.75
PM ₁₀	6,140.5	7,300	-1,159.5
CO	7,358.5	7,358.5	0
VOC	2,532.25	2,258.5	273.75

N-2107-12-6:

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	326.5	273.75	52.75
CO	0	0	0
VOC	0	0	0

N-2107-13-8:

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	1,347.75	1,347.75	0
SO _x	480.25	480.25	0
PM ₁₀	505.5	505.5	0
CO	12,298.75	12,298.75	0
VOC	926.5	926.5	0

N-2107-15-2:

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	1,018.75	1,134.75	-116
SO _x	299.5	308.25	-8.75
PM ₁₀	315.25	320.5	-5.25
CO	3,889.5	4,065.5	-176
VOC	578.25	578.5	-0.25

Appendix G
Compliance Certification

Mr. Nick Peirce
San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto CA 95356-8718

Subject: Compliance Statement for Darling Ingredients Inc.

Dear Mr. Peirce:

In accordance with Rule 2201, Section 4.15, "Additional Requirements for New Major Sources and Federal Major Modifications," Darling Ingredients Inc. (Darling) is pleased to provide this compliance statement regarding the proposed modifications planned for its food processing byproduct conversion facility in Crows Landing, CA project N-1201629.

All major stationary sources in California owned or operated by Darling, or by any entity controlling, controlled by, or under common control with Darling, and which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards. These sources include the following facilities:

- Facility #1: Darling Ingredients Inc. – Fresno
795 W Belgravia Ave, Fresno, CA 93706
- Facility #2: Darling Ingredients Inc. – Los Angeles
2626 E 25th St, Los Angeles, CA 90058
- Facility #3: Darling Ingredients Inc. – San Francisco
429 Amador St, San Francisco, CA 94124

Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Please contact me if you have any questions regarding this certification.

Sincerely,


William R. McMurtry
VP of Environmental Affairs, North America



San Joaquin Valley Air Pollution Control District



TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

*WRM
9/14/22*

ADMINISTRATIVE AMENDMENT MINOR MODIFICATION SIGNIFICANT MODIFICATION

COMPANY NAME: <i>DARLING INGREDIENTS INC.</i>	FACILITY ID: <i>N-2107</i>
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: <i>DARLING INGREDIENTS INC.</i>	
3. Agent to the Owner:	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial applicable circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true, accurate, and complete.
- For minor modifications, this application meets the criteria for use of minor permit modification procedures pursuant to District Rule 2520.

I declare, under penalty of perjury under the laws of the state of California, that the foregoing is correct and true:

[Signature]

Signature of Responsible Official

9/14/22

Date

WILLIAM R. MCMURTRY

Name of Responsible Official (please print)

UP OF ENVIR. AFFAIRS

Title of Responsible Official (please print)

Appendix H HAP Calculations

**Summary of Hazardous Air Pollutants
Darling Ingredients., Inc.
(N-2107)**

Substances	N-2107-5 (Material Receiving)	N-2107-9 & 14 (Processing Operations)	N-2107-12 (Material Loadout)	N-2107-13 (Boiler)	N-2107-15 (Boiler)	Total, all permit units (lb/yr)	HAP?	HAP, Total of all permit units (lb/yr)	
Acenaphthene	--	189.1	--	--	--	189.1	Y	189	
Acenaphthylene	--	3302	--	--	--	3302	Y	3,302	
Acetaldehyde	--	--	--	2.1	1.3	3.4	Y	3	
Acrolein	--	--	--	1.8	1.1	2.9	Y	3	
Anthracene	--	614.5	--	--	--	614.5	Y	615	
Benz[a]Anthracene	--	148.6	--	--	--	148.6	Y	149	
Benzene	--	--	--	3.9	2.4	6.3	Y	6	
Benzo[a]Pyrene	--	114.8	--	--	--	114.8	Y	115	
Benzo[g,h,i]Perylene	--	108	--	--	--	108	Y	108	
Biphenyl	--	1640.9	--	--	--	1640.9	Y	1,641	
Cadmium	--	--	0	--	--	0	Y	0	
Chromium	--	--	0	--	--	0	Y	0	
Copper	--	--	0	--	--	0			
Ethyl Benzene	--	--	--	4.6	2.9	7.5	Y	8	
Fluoranthene	--	594.2	--	--	--	594.2	Y	594	
Fluorene	--	736	--	--	--	736			
Formaldehyde	--	--	--	8.3	5.2	13.5	Y	14	
Hexane	--	--	--	3.1	1.9	5	Y	5	
Hexavalent Chromium**	--	--	0	--	--	0	Y	0	
Indeno[1,2,3-c,d]Pyrene	--	67.5	--	--	--	67.5	Y	68	
Lead	--	--	0	--	--	0	Y	0	
Manganese	--	--	0.1	--	--	0.1	Y	0	
Naphthalene	--	15530.8	--	0.2	0.1	15531.1	Y	15,531	
Nickel	--	--	0	--	--	0	Y	0	
PAHs	--	244.4	--	0.1	0	244.5			
Phenanthrene	--	3295.2	--	--	--	3295.2	Y	3,295	
Propylene	--	--	--	357.2	222.9	580.1			
Pyrene	--	776.5	--	--	--	776.5	Y	777	
Toluene	--	--	--	17.9	11.1	29	Y	29	
Xylenes	--	--	--	13.3	8.3	21.6	Y	22	
Zinc	--	--	0.1	--	--	0.1			
							Total:	26,472	lb/yr
								13.2	tons/yr

N-2107-5 (Material Receiving)

HAP data is not available for this operation at this time.

N-2107-9 &'-14 (Process Oper)

Substances	CAS#	EF (lb/ton of material)*	**Emissions PE (lb/yr)
Acenaphthene	83329	5.60E-04	189
Acenaphthylene	208968	9.78E-03	3,302
Anthracene	120127	1.82E-03	614
Benz[a]Anthracene	56553	4.40E-04	149
Benzo[a]Pyrene	50328	3.40E-04	115
Benzo[g,h,i,]Perylene	191242	3.20E-04	108
Biphenyl	92524	4.86E-03	1,641
Fluoranthene	206440	1.76E-03	594
Fluorene	86737	2.18E-03	736
Indeno[1,2,3-c,d]Pyrene	193395	2.00E-04	68
Naphthalene	91203	4.60E-02	15,531
Phenanthrene	85018	9.76E-03	3,295
Pyrene	129000	2.30E-03	777
PAHs	1150	7.24E-04	244
References:			
*Emission factors are derived from District adjustments of Charbroiler emission factors in EPA's 2002 NEI database (Appendix C1).			
**Emissions (lb/yr) = EF (lb/ton of material) x 337,625 tons/yr			

Substances	CAS#	EF (lb/ton of PM dust)*	***Emissions PE (lb/yr)
Cadmium	7440439	2.57E-04	0.0
Chromium	7440473	2.42E-03	0.0
Copper	7440508	2.59E-02	0.0
Hexavalent Chromium**	18540299	1.21E-04	0.0
Lead	7439921	1.63E-03	0.0
Manganese	7439965	8.79E-02	0.1
Nickel	7440020	1.28E-02	0.0
Zinc	7440666	9.55E-02	0.1
References:			
* Emission factors are from a 1990 ARB approved California Grain & Feed Association pooled source tests.			
*Feed values are an average of the Dairy and Poultry results ** 5% of Chromium is considered Hexavalent Chromium according to District policy			
***Emissions PE (lb/yr) = EF (lb/ton of PM dust) x 1,306 lb-PM10/yr x PM/0.5 lb-PM10 x ton/2,000 lb			

N-2107-13-8 (Boiler)

Substances	CAS#	EF (lb/MMscf)*	**Emissions PE (lb/yr)
Acetaldehyde	75070	3.10E-03	2.1
Acrolein	107028	2.70E-03	1.8
Benzene	71432	5.80E-03	3.9
Ethyl Benzene	100414	6.90E-03	4.6
Formaldehyde	50000	1.23E-02	8.3
Hexane	110543	4.60E-03	3.1
Naphthalene	91203	3.00E-04	0.2
PAHs	1151	1.00E-04	0.1
Propylene	115071	5.30E-01	357.2
Toluene	108883	2.65E-02	17.9
Xylenes	1330207	1.97E-02	13.3
References:			
Equipment" in the May 2001 update of VCAPCD AB 2588 Combustion Emission Factors. PAHs emission factor adjusted from table values to subtract Naphthalene portion.			
**Emissions PE (lb/yr) = EF (lb/MMscf) x 48,753 MMBtu/yr x scf/1,000 Btu; Heat input rate to the boiler is limited to 48,753 MMBtu/yr; higher heating value of natural gas is assumed to be 1,000 Btu/scf (District practice).			

N-2107-15-2 (Boiler)

Substances	CAS#	EF (lb/MMscf)*	**Emissions PE (lb/yr)
Acetaldehyde	75070	3.10E-03	1.3
Acrolein	107028	2.70E-03	1.1
Benzene	71432	5.80E-03	2.4
Ethyl Benzene	100414	6.90E-03	2.9
Formaldehyde	50000	1.23E-02	5.2
Hexane	110543	4.60E-03	1.9
Naphthalene	91203	3.00E-04	0.1
PAHs	1151	1.00E-04	0.0
Propylene	115071	5.30E-01	222.9
Toluene	108883	2.65E-02	11.1
Xylenes	1330207	1.97E-02	8.3
References:			
<p>*The emission factors are from the table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of VCAPCD AB 2588 Combustion Emission Factors. PAHs emission factor adjusted from table values to subtract Naphthalene portion.</p>			
<p>**Emissions PE (lb/yr) = EF (lb/MMscf) x 48,753 MMBtu/yr x scf/1,000 Btu; Heat input rate to the boiler is limited to 48,753 MMBtu/yr; higher heating value of natural gas is assumed to be 1,000 Btu/scf (District practice).</p>			

Appendix I
ERC Surplus Analyses

San Joaquin Valley Air Pollution Control District

Surplus ERC Analysis

Facility Name: Darling Ingredients, Inc.
Mailing Address: 5601 N. MacArthur Blvd.
Irving, TX 75038

Date: April 13, 2022
Engineer: Jag Kahlon
Lead Engineer: James Harader

Contact Person: Bill McMurtry
Telephone: (972) 281-4409

ERC Certificate(s) #: C-1298-2

Project #: C-1220299

I. Proposal

Darling Ingredients, Inc. is proposing the use of the following Emission Reduction Credit (ERC) certificate(s) to meet the federal offset requirements of District project N-1201629.

Proposed ERC Certificate(s)	
Certificate #	Criteria Pollutant
C-1298-2	NOx

The purpose of this analysis is to ensure that the emission reductions on this ERC certificate are surplus of all applicable Federal requirements; therefore, this analysis establishes the surplus value of the ERC certificate as of the date of this analysis. The current face value and surplus value of the ERC certificate evaluated in this analysis is summarized in the following table

Criteria Pollutant Summary: NOx

ERC Certificate C-1298-2				
Pollutant	1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
Current Value	0	0	0	270
Surplus Value	0	0	0	270

II. Individual ERC Certificate Analysis

ERC Certificate C-1298-2

A. ERC Background

Criteria Pollutant: NOx

ERC certificate C-1298-2 is a certificate that was split out from parent ERC Certificate C-698-2. The original ERC Certificate, C-698-2, was issued to Westfield Ginning Company on April 27, 2006 under project C-1053057. The ERCs were generated from the shutdown of the entire Westfield Ginning Company’s cotton gin in Five Points, California facility ID C-1379. This facility had a cotton gin with 5 Murray Model 50 Saw gin stands, 4 hot air cleaners, 4 lint cleaners and condensers with two 4 MMBtu/hr and one 3 MMBtu/hr propane-fired dryers, mote system, battery condenser, trash system and seed separator. Only the propane fuel combustion in the dryers contributed to the NOx emissions from this facility. NOx emissions were banked using generally accepted emission factor for fuel combustion and actual fuel usage during the baseline period.

The following table summarizes the values of the original parent certificate and the current value of the subject certificate proposed to be utilized as a part of the current District analysis:

ERC Certificate C-1298-2				
Pollutant	1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
Original Value of Parent Certificate C-698-2	0	0	0	270
Current Value of ERC Certificate C-1298-2	0	0	0	270

B. Applicable Rules and Regulations at Time of Original Banking Project

Based on the application review for the original ERC banking project, the following rules and regulations were evaluated to determine the surplus value of actual emission reductions of NOx generated by the reduction project.

1. District Rules

Rule 2301 - Emission Reduction Credit Banking (12/17/92)

The application review for the original ERC banking project demonstrated that the ERC credits complied with the requirements of this rule.

Rule 4301 Fuel Burning Equipment (12/17/92)

Section 3.1 defines 'fuel burning equipment' as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.

In dryers at a cotton gin, warm air is directly transferred to seed cotton. There is no intermediate medium (e.g., water in boiler tubes, or oil in process heaters) being used to indirectly transfer heat in these processes. Therefore, these dryers did not qualify as fuel burning equipment based on the definition in Rule 4301. As such, these dryers were not subject to the requirements of this rule.

Rule 4309 Dryers, Dehydrators, and Ovens (12/15/05)

This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater.

As explained in the section II.A above, heat input rate of each dryer is less than 5 MMBtu/hr. Therefore, these dryers were not subject to the requirements of this rule.

2. Federal Rules and Regulations

There were no applicable federal rules or regulations identified that applied at the time of this original ERC banking action; therefore, no further discussion is required.

C. New or Modified Rule and Regulations Applicable to the Original Banking Project

All District and federal rules and regulations that have been adopted or amended since the date the original banking project was finalized will be evaluated below:

1. District Rules:

There are no new or modified District rules that would be applicable to the cotton gin dryers. Therefore, the original NO_x emission reductions are surplus of District Rule requirements.

2. Federal Rules and Regulations:

40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

This subpart applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).

Each dryer at the cotton gin was rated at less 10 MMBtu/hr; therefore, this subpart does not apply.

40 CFR Part 63 Subpart DDDDD National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

This subpart is applicable to boilers and process heaters located at Major Sources of hazardous air pollutant (HAP) emissions.

40 CFR 63.2 defines “major source” as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of HAPs, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence. Section 63.10885 has management practices for metallic scrap and mercury switches.

This facility only included cotton ginning equipment and small propane-fired dryers. These types of operations emit small quantities of HAPs that are far below the thresholds listed above; therefore, this source was not a Major HAP Source and is not subject to Subpart DDDDD.

D. Surplus at Time of Use Adjustments to ERC Quantities

As demonstrated in the section above, the emissions reductions from permit units in the original banking project continue to be surplus of all applicable District and Federal Rules and Regulations. Therefore, no discounting to the ERC values are necessary for surplus at time of use considerations.

E. Surplus Value of ERC Certificate

The emissions continue to be Surplus of all District and Federal Rules and Regulations; therefore, no adjustments to the ERC values are necessary.

ERC Certificate C-1298-2 – Criteria Pollutant NOx					
		1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
(A)	Current ERC Quantity	0	0	0	270
(B)	Percent Discount	0.0%	0.0%	0.0%	0.0%
(C) = (A) x [1 – (B)]	Surplus Value	0	0	0	270

San Joaquin Valley Air Pollution Control District

Surplus ERC Analysis

Facility Name: Darling Ingredients, Inc.
Mailing Address: 5601 N. MacArthur Blvd.
Irving, TX 75038

Date: April 13, 2022
Engineer: Jag Kahlon
Lead Engineer: James Harader

Contact Person: Bill McMurtry
Telephone: (972) 281-4409

ERC Certificate(s) #: S-4346-2

Project #: S-1220248

I. Proposal

Darling Ingredients, Inc. is proposing the use of the following Emission Reduction Credit (ERC) certificate(s) to meet the federal offset requirements of District project N-1201629.

Proposed ERC Certificate(s)	
Certificate #	Criteria Pollutant
S-4346-2	NOx

The purpose of this analysis is to ensure that the emission reductions on this ERC certificate are surplus of all applicable Federal requirements; therefore, this analysis establishes the surplus value of the ERC certificate as of the date of this analysis. The current face value and surplus value of the ERC certificate evaluated in this analysis is summarized in the following table

Criteria Pollutant Summary: NOx

ERC Certificate S-4346-2				
Pollutant	1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
Current Value	911	860	804	641
Surplus Value	911	860	804	641

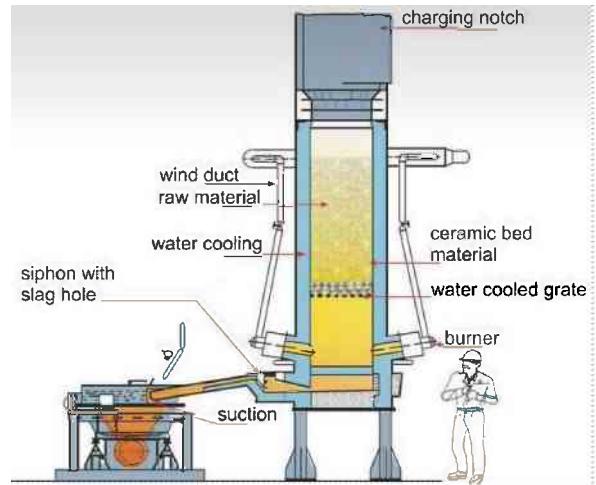
II. Individual ERC Certificate Analysis

ERC Certificate S-4346-2

A. ERC Background

Criteria Pollutant: NOx

ERC certificate S-4346-2 is a certificate that was split out from parent ERC Certificate S-2003-2. Original ERC Certificate S-2003-2 was issued to Waterman Industries, Inc. on November 24, 2003 under project S-1031236. The ERCs were generated from the shutdown of the entire Waterman Industries, Inc.’s foundry operation in Exeter, California facility ID S-417. This facility had two 2.84 MMBtu/hr (each) gas-fired cupola furnaces each served by it’s own set of three 0.945 MMBtu/hr (each) gas-fired afterburner system (S-417-2), the southwestern automatic mold shakeout system (S-417-3), the northeastern automatic mold shakeout system (S-417-4), a sand reclamation system served by a baghouse (S-417-6), a sand/shot blasting operation (S-417-7), a coreless induction furnace with five 0.3 MMBtu/hr (each) pre-heat cylinder pots vented to a baghouse (S-417-8), and a grinding and finishing operation with dust collector (S-417-9). Only permits S-417-2 and ‘-8 contributed to the NOx emissions from this facility. NOx emissions banked from cupola furnaces (S-417-2) were based on source test data and furnace charge rates. The actual NOx emissions from five pre-heat cylinder pots were near zero, so no NOx reductions were banked from these cylinder pots. The literature search on gas-fired cupola furnaces revealed that these furnaces are direct-fired cylindrical vessels, where hot flue gases comes in direct contact with the material (charge) being melted. The material (charge) is loaded through the top of the furnace onto the grate. The molten charge is siphoned out through the bottom, and is used in various processes conducted at a foundry.



The following table summarizes the values of the original parent certificate and the current value of the subject certificate proposed to be utilized as a part of the current District analysis:

ERC Certificate S-4346-2				
Pollutant	1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
Original Value of Parent Certificate S-2003-2	1,347	1,294	804	875
Current Value of ERC Certificate S-4346-2	911	860	804	641

B. Applicable Rules and Regulations at Time of Original Banking Project

Based on the application review for the original ERC banking project, the following rules and regulations were evaluated to determine the surplus value of actual emission reductions of NOx generated by the reduction project.

1. District Rules

Rule 2301 - Emission Reduction Credit Banking (12/17/92)

The application review for the original ERC banking project demonstrated that the ERC credit complied with the requirements of this rule.

Rule 4301 Fuel Burning Equipment (12/17/92)

Section 3.1 defines 'fuel burning equipment' as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.

In cupola furnaces, heat is directly transferred to the metal being melted inside the furnace. There is no intermediate medium (e.g., water in boiler tubes, or oil in process heaters) is being used to indirectly transfer heat to the processes. Therefore, these furnaces did not meet the definition of fuel burning equipment in Rule 4301. As such, these furnaces are not subject to the requirements of this rule.

Rule 4305 Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)

Rule 4306 Boilers, Steam Generators, and Process Heaters – Phase 3 (12/17/20)

Rule 4307 Boilers, Steam Generators, and Process Heaters – 2.0 MMBtu/hr to 5.0 MMBtu/hr (4/21/16)

Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters (12/17/20)

Rule 4351 Boilers, Steam Generators, and Process Heaters – Phase 1 (8/21/03)

These rules defines 'process heater' as any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from combustion gases to water or process streams. This definition excludes: kilns or ovens used for drying, baking, cooking, calcining, or vitrifying; and unfired waste heat recovery heaters used to recover sensible heat from the exhaust of combustion equipment.

As explained in the section II.A above, cupola furnaces are direct-fired furnaces, where the products of combustion directly comes in contact with the material being heated. These furnaces operate similar to a kiln which are excluded from the process heater definition.

Further, for the purposes of Rules 4305, 4306, 4307, 4320, and 4351, process heaters are units that combust fuel for the purpose of transferring heat indirectly to water flowing through the convection tubes (such as in boilers units) or other process streams where the combustion gasses do not come into direct contact with the material that is being heated. The process streams, that is, water or other media, never comes in direct contact with the heat generated from fuel combustion.

Since cupola furnaces are direct fired and do not meet 'process heater' definition, these furnaces are not subject to the limits in these rules.

Rule 4309 Dryers, Dehydrators, and Ovens (12/15/05)

This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater.

As explained in the section II.A above, heat input rate to each cupola furnace is below 5.0 MMBtu/hr; therefore, these units are not subject to the requirements of this rule.

2. Federal Rules and Regulations

There were no applicable federal rules or regulations identified that applied at the time of this original ERC banking action; therefore, no further discussion is required.

C. New or Modified Rule and Regulations Applicable to the Original Banking Project

All District and federal rules and regulations that have been adopted or amended since the date the original banking project was finalized will be evaluated below:

1. District Rules:

The District rules that were adopted or amended since the original ERC banking are not applicable to the cupola furnaces. Consequently, these rules do not alter the amount of original NOx emission reductions. Therefore, the original NOx emission reductions are surplus of District Rule requirements.

2. Federal Rules and Regulations:

40 CFR Part 63 Subpart EEEEE - National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries

This subpart is applicable to an iron and steel foundry that is (or is part of) a major source of hazardous air pollutant (HAP) emissions. Iron and steel foundry is a major source of HAP for purposes of this subpart if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year or if it is located at a facility that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year as defined in §63.2.

This subpart does not have any NOx emissions standards; therefore, original NOx emissions reductions are surplus of the requirements of this subpart.

40 CFR Part 63 Subpart ZZZZZ—National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources

Section 63.10885 has management practices for metallic scrap and mercury switches.

Section 63.10886 list management practices for binder formulations.

Based on the process rate records in the original ERC banking application, Waterman Industries, Inc is classified as a large foundry (i.e., processes more than 10,000 tons of metal per year in each furnace). Therefore, the requirements in section 63.10895 through 63.10900 may be applicable to the original facility. A review of the requirements of this Subpart revealed that there are no NOx emission standards listed in the subpart.

Since this subpart does not have any requirements for NOx emissions, the NOx emission reductions are surplus of this subpart.

D. Surplus at Time of Use Adjustments to ERC Quantities

As demonstrated in the section above, the emissions reductions from permit units in the original banking project continue to be surplus of all applicable District and Federal Rules and Regulations. Therefore, no discounting to the ERC values are necessary for surplus at time of use considerations.

E. Surplus Value of ERC Certificate

The emissions continue to be Surplus of all District and Federal Rules and Regulations; therefore, no adjustments to the ERC values are necessary.

ERC Certificate S-4346-2 – Criteria Pollutant NOx					
		1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
(A)	Current ERC Quantity	911	860	804	641
(B)	Percent Discount	0.0%	0.0%	0.0%	0.0%
(C) = (A) x [1 – (B)]	Surplus Value	911	860	804	641

Appendix J
ERC Withdrawal Calculations

ERC Withdrawal Calculations

NO _x	Calc. Method	1 st Quarter (lb)	2 nd Quarter (lb)	3 rd Quarter (lb)	4 th Quarter (lb)
ERC S-4346-2	A	911	860	804	641
Re-adjusting credits in S-4346-2 per section 4.13.8 of Rule 2201*	B	0	-2	+2	0
Credits in ERC S-4346-2 after adjustment	C = A + B	911	858	806	641
ERC C-1298-2	D	0	0	0	270
Total Credits	E = C+D	911	858	806	911
Offsets Required (Includes distance offset ratio)	F	805	805	806	806
Amount Remaining	G = E – F	106	53	0	105
Credits reissued under ERC S-YYYY-2		106	53	0	105

*Per section 4.13.8 of Rule 2201 - Actual Emission Reductions (AER) for NO_x and VOC that occurred from April through November may be used to offset increases in NO_x and VOC during any period of the year.