

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION**

July 17, 2024

PERMIT TO INSTALL
397-98B

ISSUED TO
Darling Ingredients Inc.

LOCATED AT
3350 Greenfield Road
Melvindale, Michigan 48122

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
A6902

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

May 6, 2024

DATE PERMIT TO INSTALL APPROVED:

July 17, 2024

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO _{2e}	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H ₂ S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO _x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM ₁₀	Particulate Matter equal to or less than 10 microns in diameter
PM _{2.5}	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUOILHOPPER	Storage and primary separation of used restaurant oils and solids.	1989	FGOILS
EUEVAP	Evaporation tanks where moisture is removed from the oils by cooking.	1992	FGOILS
EUOILSTORE	Storage tanks for the processed oils. Also included are the truck loading operations.	1989	FGOILS
EUTALLOW	Centrifugal cleaning process of the liquid and subsequent storage tanks and loading process.	1992	FGOILS

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGOILS	Restaurant and food grease recycling process producing fat and protein supplements for animal feed customers. Emissions and odors from the process are controlled by two (2) packed tower scrubbers. Odors from the process are controlled via elevated pH control chemistry and oxidation chemistry.	EUOILHOPPER EUEVAP EUOILSTORE EUTALLOW

FGOILS FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Restaurant and food grease recycling process producing fat and protein supplements for animal feed customers. Emissions and odors from the process are controlled by two (2) packed tower scrubbers. Odors from the process are controlled via elevated pH control chemistry and oxidation chemistry.

Emission Units: EUOILHOPPER, EUEVAP, EUOILSTORE, EUTALLOW

POLLUTION CONTROL EQUIPMENT

100,000 cfm packed tower scrubber
15,000 cfm packed tower scrubber

I. EMISSION LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Odor	50 odor units per standard cubic foot ¹	Hourly	FGOILS	SC V.1	R 336.1901

II. MATERIAL LIMIT(S)

1. The permittee shall not accept any material that cannot be processed within 24 hours. All material shall be processed in a structure with odor control equipment. The permittee shall follow the table below for unloading the material based on ambient air temperature.¹ **(R 336.1901)**

Material	Unloading Time In Hours		
	* AAT > 80°F	50°F < AAT < 80°F	AAT < 50°F
Incoming restaurant grease vehicles	12	16	24
*Ambient Air Temperature			

2. The process weight rate shall not exceed 8.4 million pounds of raw material per week consisting of restaurant grease and trap grease.¹ **(R 336.1224, R 336.1225, R 336.1901)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only use the following odor control chemistries in the packed towers:
 - a) Oxidation Control Chemistry.
 - b) Elevated pH Control Chemistry.¹**(R 336.1224, R 336.1225, R 336.1901)**
2. The permittee shall maintain a recirculating rate of 1,000 gallons per minute of scrubber solution in the 100,000-cfm packed tower.¹ **(R 336.1224, R 336.1225, R 336.1901)**
3. The permittee shall maintain a recirculating rate of 125 gallons per minute of scrubber solution in the 15,000-cfm packed tower.¹ **(R 336.1224, R 336.1225, R 336.1901)**
4. When using elevated pH chemistry, the permittee shall maintain a pH level of greater than 9.0 standard units (s.u.) in the recirculation scrubber solution for each of the packed tower scrubbers. When using chlorine dioxide, the permittee shall maintain a pH level in the range of 3-10 s.u. in the recirculation scrubber solution for each of the packed tower scrubbers.¹ **(R 336.1224, R 336.1225, R 336.1901)**
5. The temperature of the recirculating scrubber solution in each of the packed tower scrubbers shall not exceed 110° F.¹ **(R 336.1224, R 336.1225, R 336.1901)**
6. When using chlorine dioxide chemistry, the permittee shall maintain a chlorine dioxide residual in the scrubber solution at a concentration greater than or equal to 0.1 parts per million (ppm).¹ **(R 336.1224, R 336.1225, R 336.1901)**
7. No vehicles containing material to be processed shall leave the facility unless all residual solid and liquid material has previously been removed by cleaning.¹ **(R 336.1901)**
8. The permittee shall clean the plant floor area and outside the building of animal byproducts, restaurant grease and trap grease spillage on a daily basis or more often if required, such that odors from these sources are minimized.¹ **(R 336.1901)**
9. The cleaning of delivery vehicles and containers shall be conducted in an area and in a manner, which will prevent any residue from collecting in stagnant condition capable of decomposition and generation of odorous emissions. The permittee shall adhere to the procedures listed in the MAP for cleaning trucks, yard and adjacent roadways e.g. water, steam, detergent, etc.¹ **(R 336.1901)**
10. In the event of a process malfunction where processing or odor abatement equipment will not operate, the permittee shall notify the District Supervisor within four hours of such use indicating the maximum time required for repairs. Incoming material to be processed shall not be accepted after four hours of downtime if repairs are anticipated to exceed eight hours. **(R 336.1901, R 336.1912)**
11. Upon verbal notification of receipt of an odor complaint from the Department, the permittee shall implement an odor investigation pursuant to the Nuisance Minimization Plan for Odor Control. The permittee shall provide a written summary of the odor investigation results to the District Supervisor within 30 days of the date of the complaint. This summary shall include, but is not limited to, an explanation of the complaint, the investigation procedures, results of the investigation, and steps that will be taken to resolve the complaint.¹ **(R 336.1901)**
12. The permittee shall not operate FGOILS unless a malfunction abatement plan (MAP) as described in Rule 911(2), for the packed tower scrubbers, which includes operating parameters for all of the permitted scrubber chemistries, has been submitted within 45 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
 - a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a

description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.

- b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
- c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

- 1. The permittee shall not operate FGOILS unless the packed tower scrubbers are installed, maintained, and operated in a satisfactory manner as specified in the MAP. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
- 2. The permittee shall equip and maintain each scrubber with a device to measure the recirculation rate, of the scrubber solution on a continuous basis. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
- 3. The permittee shall equip and maintain each scrubber with a device to measure the pH of the scrubber solution on a continuous basis. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
- 4. The permittee shall equip and maintain each scrubber with a device to measure the temperature of the scrubber solution on a continuous basis. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
- 5. The permittee shall equip and maintain each scrubber with a device to measure the oxidation reduction potential of the scrubber solution on a continuous basis. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
- 6. The permittee shall equip and maintain each scrubber with a device to measure the chlorine dioxide residual of the scrubber solution on a continuous basis. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
- 7. All building openings, above ground, other than access doors and make up air supply louvers, shall be sealed to prevent exfiltration of odorous emissions.¹ **(R 336.1901)**
- 8. All man doors, except maintenance doors, shall be equipped with automatic closure devices and maintained in a satisfactory manner.¹ **(R 336.1901)**
- 9. All bay doors shall be kept closed except during loading and unloading.¹ **(R 336.1901)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request of the AQD District Supervisor, the permittee shall verify and quantify the odor units per standard cubic foot from FGOILS by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.¹ **(R 336.1901)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
2. The permittee shall keep, in a satisfactory manner, records of the chlorine dioxide residual, oxidation reduction potential, pH, temperature, and recirculation rate of the scrubber solution on an hourly basis when using the oxidation control chemistry. The permittee shall keep all records, in a format acceptable to the AQD District Supervisor, on file at the facility and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
3. The permittee shall keep, in a satisfactory manner, records of the pH, temperature, and recirculation rate of the scrubber solution on an hourly basis when using the elevated pH control chemistry. The permittee shall keep all records, in a format acceptable to the AQD District Supervisor, on file at the facility and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, a log shall be kept indicating the weight of deliveries, ambient air temperature, and duration of unloading. The permittee shall keep all records, in a format acceptable to the AQD District Supervisor, on file at the facility and make them available to the Department upon request.¹ **(R 336.1901)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV100KSCRUBBER	80	75	R 336.1225, 40 CFR 52.21(c) and (d)
2. SV15KSCRUBBER	60	63	R 336.1225, 40 CFR 52.21(c) and (d)

IX. OTHER REQUIREMENT(S)

1. No later than 180 days after issuance of this permit, the permittee shall submit to the AQD District Supervisor, for review and approval, a Nuisance Minimization Plan for Odor Control for in FGOILS. The permittee shall not operate FGOILS after the date of submittal unless the plan is implemented and maintained.¹ **(R 336.1901)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).