

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

March 30, 2004

**NEW SOURCE REVIEW PERMIT TO INSTALL
No. 397-98A**



ISSUED TO
Darling International, 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 Environmental Quality. This permit is hereby issued in accordance with and subject to Part 5505(1) of Article II, Chapter I, Part 55 (Air Pollution Control) of P.A. 451 of 1994. 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: 3/29/2004	
DATE PERMIT TO INSTALL APPROVED: 3/30/2004	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	Btu	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	NO _x	Oxides of Nitrogen
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MDEQ	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns diameter
MIOSHA	Michigan Occupational Safety & Health Administration	pph	Pound per hour
MSDS	Material Safety Data Sheet	ppm	Parts per million
NESHAP	National Emission Standard for Hazardous Air Pollutants	ppmv	Parts per million by volume
NSPS	New Source Performance Standards	ppmw	Parts per million by weight
NSR	New Source Review	psia	Pounds per square inch absolute
PS	Performance Specification	psig	Pounds per square inch gauge
PSD	Prevention of Significant Deterioration	scf	Standard cubic feet
PTE	Permanent Total Enclosure	sec	Seconds
PTI	Permit to Install	SO ₂	Sulfur Dioxide
RACT	Reasonable Available Control Technology	THC	Total Hydrocarbons
ROP	Renewable Operating Permit	tpy	Tons per year
SC	Special Condition Number	µg	Microgram
SCR	Selective Catalytic Reduction	VOC	Volatile Organic Compounds
SRN	State Registration Number	yr	Year
TAC	Toxic Air Contaminant		
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

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. **[R336.1201(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 Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **[R336.1201(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 R336.1210, 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. **[R336.1201(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. **[R336.1201(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 R336.1219 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 R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**
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. **[R336.1901]**
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). **[R336.1912]**
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 R336.1301, 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 R336.1303. **[R336.1301]**
 - 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 R336.1370(2). **[R336.1370]**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EURAWHOPPER	Receiving pits where the raw materials are unloaded from trucks and blended for further processing	
EUSIZING	Grinding and hogging operations where raw materials are cleared of foreign objects and reduced to the appropriate size.	
EUCOOKER	Dupp's 320 cooking unit where moisture is driven out of the material. The cooker exhaust is controlled by the Thermal Oxidizer.	SVOXIDIZER
EUSEPERATION	Post cooking pressing units where liquid is separated from the solids.	
EUTALLOW	Centrifugal cleaning process of the liquid (tallow) and the subsequent storage tanks and loading process.	
EUCRAX	The solids (crax) processing equipment which include grinders, sizing screens, product storage and truck loading process.	
EUOILHOPPER	Storage and primary separation of used restaurant oils and solids.	
EUEVAP	Evaporation tanks where moisture is removed from the oils by cooking.	
EUOILSTORE	Storage tanks for the processed oils. Also included is the truck loading operations.	
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.		

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FGRENDERING	EURAWHOPPER, EUSIZING, EUCOOKER, EUSEPERATION, EUTALLOW, EUCRAX: The EUCOOKER portion is controlled by the thermal oxidizer.	SVOXIDIZER, SV15KSCRUBBER, SV60KSCRUBBER, SV100KSCRUBBER
FGOILS	EUOILHOPPER, EUEVAP, EUOILSTORE	SVOXIDIZER, SV15KSCRUBBER, SV60KSCRUBBER, SV100KSCRUBBER
FGFACILITY	FGRENDERING, FGOILS: This equipment is commonly controlled by three (3) packed tower scrubbers and a thermal oxidizer. The EUCOOKER portion is controlled by the thermal oxidizer.	SVOXIDIZER, SV15KSCRUBBER, SV60KSCRUBBER, SV100KSCRUBBER

The following conditions apply to: FGFACILITY

Emission Limits

1.1 Emissions from FGFACILITY, shall not exceed (50) odor units per standard cubic foot as determined utilizing methods acceptable to the District Supervisor. **[R336.1901]**

Material Usage Limits

1.2 The process weight rate shall not exceed 8.4 million pounds of raw material per week consisting of animal by-products, dead stock, restaurant grease and trap grease. The maximum hourly input rate EU-COOKER shall not exceed 60,000 pounds per hour. **[R336.1901]**

1.3 The permittee shall not accept any material that can not be processed within 24 hours. All material shall be processed in a structure with odor control equipment. A log (weight sheets) shall be kept indicating the time of deliveries and shall be made available for inspection upon request by District Supervisor. The permittee shall follow the table below for unloading the material based on Ambient Air Temperature. **[R336.1901]**

Material	Unloading Time In Hours		
	* AAT > 80 ⁰ F	50 ⁰ F < AAT < 80 ⁰ F	AAT < 50 ⁰ F
Incoming offal rendering vehicles	8	12	24
Incoming fat/bone rendering vehicles and restaurant grease vehicles.	12	16	24

* AAT = Ambient Air Temperature.

Process/Operational Limits

1.4 Chlorine dioxide shall be used as an oxidant in each of FGFACILITY's three packed tower scrubbers. A recirculating rate of the 100,000 cfm packed tower scrubber solution of 1000 gallons per minute shall be maintained. A recirculation rate of the 60,000 cfm packed tower scrubber solution of 600 gallons per minute shall be maintained. A recirculation rate of the 15,000 cfm packed tower scrubber solution of 125 gallons per minute shall be maintained. **[R336.1901]**

1.5 The permittee shall maintain a pH level in the range of 3-10 in the recirculation scrubber solution for each of the three packed tower scrubbers. **[R336.1901]**

1.6 The temperature of the recirculating scrubber solution in each of the three packed tower scrubbers shall not exceed 110⁰ F unless the permittee can demonstrate to the satisfaction of the District Supervisor, that other levels will insure acceptable odor control. **[R336.1901, R336.910]**

1.7 The temperature of the gasses exiting the incinerator shall be maintained at a minimum of 1400⁰ F unless the permittee can demonstrate to the satisfaction of the District Supervisor, that other levels will insure acceptable odor control. **[R336.1901]**

1.8 No vehicles containing material to be processed shall be parked off site of the location unless all residual solid and liquid material has previously been removed by cleaning. **[R336.1901]**

1.9 All offal vehicles shall be tarped while in transit. **[R336.1901]**

- 1.10 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. **[R336.1901]**
- 1.11 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 adhere to the procedures listed in Appendix A for cleaning trucks, yard and adjacent roadways e.g. water, steam, detergent, etc. **[R336.1901]**
- 1.12 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. **[R336.1901, R336.1912]**
- 1.13 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). The residual shall be continuously monitored and recorded for each scrubber in a manner and with instrumentation acceptable to the Air Quality Division. All the residual chlorine dioxide records shall be kept on a file for a period of at least five years and made available to the Department upon request. **[R336.1901]**
- 1.14 A violation of the special conditions No.(s): 1.1, 1.3, 1.6, 1.7, 1.8 & 1.15 shall automatically trigger the permittee's obligation to sell excess rendering material necessary to insure compliance with said conditions. **[R336.1901]**
- 1.15 Upon verbal notification of receipt of an odor complaint from the Department, the permittee shall implement an odor investigation pursuant to the Process Management Program. 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. **[R336.1901]**

Equipment

- 1.16 The permittee shall not operate FGFACILITY unless the air-cooled condenser, chlorine dioxide system, and the three packed tower scrubbers are installed and operating properly. **[R336.1901]**
- 1.17 The permittee shall not operate the EUCOOKER portion of FGFACILITY unless the venturi scrubber and thermal oxidizer are installed and operating properly. **[R336.1901]**
- 1.18 When FGRENDERING is not in operation only the 100,000 cfm scrubber shall be used to control odors from FGOILS, and only the 15,000 cfm scrubber shall be used to control odors from the loading/unloading process. **[R336.1901]**
- 1.19 When FGRENDERING is in operation and the outside ambient temperature is less than 50° F, the 60,000 cfm packed tower scrubber may be turned off to protect the packed tower scrubber from freeze-up. **[R336.1901]**
- 1.20 All building openings, above ground, other than access doors and make up air supply louvers, shall be sealed to prevent exfiltration of odorous emissions. **[R336.1901]**
- 1.21 All man doors, except maintenance doors, shall be equipped with automatic closure devices and maintained in good repair. **[R336.1901]**
- 1.22 All bay doors shall be kept closed except during loading and unloading. **[R336.1901]**

1.23 The permittee shall maintain FGFACILITY in compliance with all sections of the Malfunction Abatement Program and work practices listed in Appendix A. The permittee shall also maintain the required devices and operating parameters, monitor and record the operating parameters and implement the malfunction abatement plan, for each piece of odor control equipment and chlorine dioxide oxidation system equipment, according to the plan. The District Supervisor, Air Quality Division shall be notified of significant modifications to the operation of the odor control equipment or chlorine dioxide oxidation system, in writing, within 15 days of the modification. **[R336.1901, R336.1910]**

Testing

1.24 The permittee shall conduct testing for compliance required by Special Condition 1.1 under the operating conditions specified in Special Condition 1.18. The testing shall be conducted when the ambient temperature exceeds 80⁰ F. By June 1st 2004, the permittee shall submit a complete test plan to the AQD for review. The final plan must be approved by the AQD prior to testing. Verification of the emission rates includes the submittal of a complete report of the results to the AQD within 60 days following the date of the test. **[R336.1901]**

Monitoring

1.25 The permittee shall continuously monitor and record separately for each of the three packed tower scrubbers, the Oxygen Reduction Potential (ORP) of the recycled scrubber solution in a manner and with instrumentation acceptable to the Air Quality Division. The Oxygen Reduction Potential shall be maintained in accordance with the Malfunction Abatement Plan and Process Management Program. **[R336.1901, R336.1910]**

1.26 The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature in combustion chamber of the thermal oxidizer on a continuous basis. **[R336.1901, R336.1910]**

Recordkeeping/Reporting/Notification

1.27 Records shall be kept on a daily basis of the outside ambient temperature and any subsequent shutdowns of the 60,000 cfm packed tower scrubber to prevent plant freeze-up. These records shall be kept on file for a period of five years and made available to the Department upon request. **[R336.1901]**

1.28 Records shall be kept on an hourly basis for the packed tower scrubbers indicating pH, Oxygen Reduction Potential (ORP) and the operating temperature of the scrubber solution. All these records shall be kept on file for a period of five years and made available to the Department upon request. **[R336.1901, R336.1910]**

1.29 Records shall be kept on any hourly basis for the thermal oxidizer/waste heat boiler indicating operating temperature of the incineration section. All these records shall be kept on file for a period of five years and made available to the Department upon request. Installation of temperature monitoring ports and location of permanent temperature monitoring equipment shall have prior approval by the District Supervisor, Air Quality Division. **[R336.1901]**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
1.30a	SV100KSCRUBBER	80	75	R336.1901
1.30b	SV60KSCRUBBER	60	67	R336.1901
1.30c	SV15KSCRUBBER	60	63	R336.1901
1.30d	SVOXIDIZER	32	62	R336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

Appendix A

MALFUNCTION AND ODOR ABATEMENT PLAN
(Attached)