SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Initial Study/Environmental Checklist/Proposed Negative Declaration

A. PROJECT BACKGROUND INFORMATION

1. Project Title:
Darling International Application No.: C-406-1-2, -2-2 and 4-2

2. Lead Agency Name and Address:
San Joaquin Valley Unified Air Pollution Control District
1990 E. Gettysburg Ave.
Fresno CA 93726

3. Contact Person(s):
Planning/CEQA: Hector R. Guerra (559) 230-5800
Permit Services: Tung Le (559) 230-6000

4. Project Location:
795 W. Belgravia Avenue
Located within the City of Fresno
Fresno County, California

This facility is located in an area of attainment for CO, but is non-attainment for PM10 and ozone. This site is not within 1,000 feet of a K-12 school, therefore the requirements of California Health and Safety Code 42301.6 (School Noticing) do not apply.

5. Project Sponsor's Name and Address:
Darling International Inc.
251 O'Connor Ridge Blvd., Suite 300
Irving, TX 75038
Attn: Mr. William R. McMurtry

6. Assessor's Parcel Number:
477-054-12

7. General Plan Designation/Zoning:
The property is currently zoned M-3 (*Heavy Manufacturing District*) on the north 3/4 of the property, including the area where the rendering plant facilities are located. The remainder of the property is zoned M-1 (*Light Manufacturing District*). The north ½ of the property, including the area where the rendering plant facilities are located, is designated in the 2025 Fresno General Plan for Heavy Industrial land uses, and the south ½ of the property is designated for light industrial land uses.

8. Description of Project:

The project proposes modifications and additions to the site facilities to be constructed as specified below.

Darling International, Inc. (Darling) proposes to renovate and upgrade their existing rendering operation. **No changes in emissions or throughput is proposed.** The facility is an older rendering facility (first approved by the County of Fresno in 1957), and the equipment changes proposed in this project are only to modernize the plant, and to improve nuisance odor abatement. Please note that Darling had initially applied for the installation of a waste heat evaporator (WHE) and a corresponding raw material throughput increase from 850,000 pounds/day to 1,150,000 pounds/day. In a letter to the District dated May 11, 2005, Darling withdrew its request for Authority to Construct (ATC) for these modifications. This project will only entail replacing or upgrading existing equipment at Darling's Fresno facility. No new processing equipment that may contribute to nuisance odors is proposed, nor any increases in production.

Current Facility Process Summary

The facility recycles food processing (animal) byproducts from local and regional food producers and preparers (slaughterhouses). Raw material is delivered via truck. All processing activities occur indoors; delivery trucks back into a receiving room where raw material is dumped into a receiving pit and onto the receiving floor of the main process building. The raw material is ground and then introduced into a cooker where water is evaporated off, and the remaining material which consists mainly of fat (tallow) and protein is cooked. The fat and tallow from the cooker is separated and stored in one of eight storage tanks. The resulting cooked material (crax) is pressed to remove any further tallow, and the remaining product is ground into a meal consistency (meat and bone meal), and is then stored in silos to cool, and loaded out via overhead bins into delivery trucks.

Nuisance emissions from raw material delivery, storage, and handling are controlled by two air scrubber units. One unit is rated at 100,000 cfm and the other is rated at 75,000 cfm. The building is usually kept under negative pressure during process operation in order to ensure nuisance odors are collected and controlled. Nuisance emissions from cooker exhaust is controlled by a condensor which collects heavier condensible gases, while the non-condensible gases are ultimately incinerated by a thermal oxidizer.

The cooker exhaust is controlled by a condenser which collects heavier condensible gases, while the non-condensible gases are ultimately controlled by a thermal oxidizer.

The project consists of modifications and additions to increase efficiency and decrease odor emanating from rendering processes at the existing facility as follows:

a. Replace the existing concrete floor to include new scupper and sump collection system, eliminating the main sump outside
b. Replace the existing wastewater pre-treatment system with a new system to include a roto strainer, mechanical skimmer, dissolved air flotation unit (DAF), air system, sludge tank, and associated plumbing, pumps, and control systems
c. Upgrade packing, plumbing, and controls on the existing 75,000 cfm room air scrubber
d. Upgrade packing, plumbing, and controls on the existing 100,000 cfm room air scrubber
e. Upgrade the existing scrubber and thermal oxidizer ductwork
f. Install a new 12,000 cfm venturi scrubber in the cooker exhaust prior to the thermal oxidizer
g. Replace the existing 12,000 cfm thermal oxidizer fan with a new fan
h. Replace the existing Dupps Hogger (a grinding unit) with one new Atlas-Stord Model TMA UNI 4 grinder
i. Install a new 27,000 pound surge bin to stage ground raw materials
j. Install 19 new material conveyors (inside the main production building) to replace and supplement existing conveyors
k. Replace motor control center and other electrical upgrades
l. Replace the existing Dupps press with a new Atlas-Stord Model AS-300 High Pressure press
m. Replace the existing control room with a new control room
n. Install a new fat tallow work tank with pumps to work with the new cooker
o. Replace the existing 260 J Dupps Cooker with an Atlas-Stord Model TST-2264 Cooker
p. Install a new Roto-Shear free fat drainer to the new cooker
q. Replace chlorine gas in room air scrubbers with either Radox or chlorine dioxide (ability to use both, not simultaneously)
r. Install closing devices on all entry/exit doors (per applicant)

A more comprehensive project/process description, Attachment 1, is also included as part of this Initial Study.

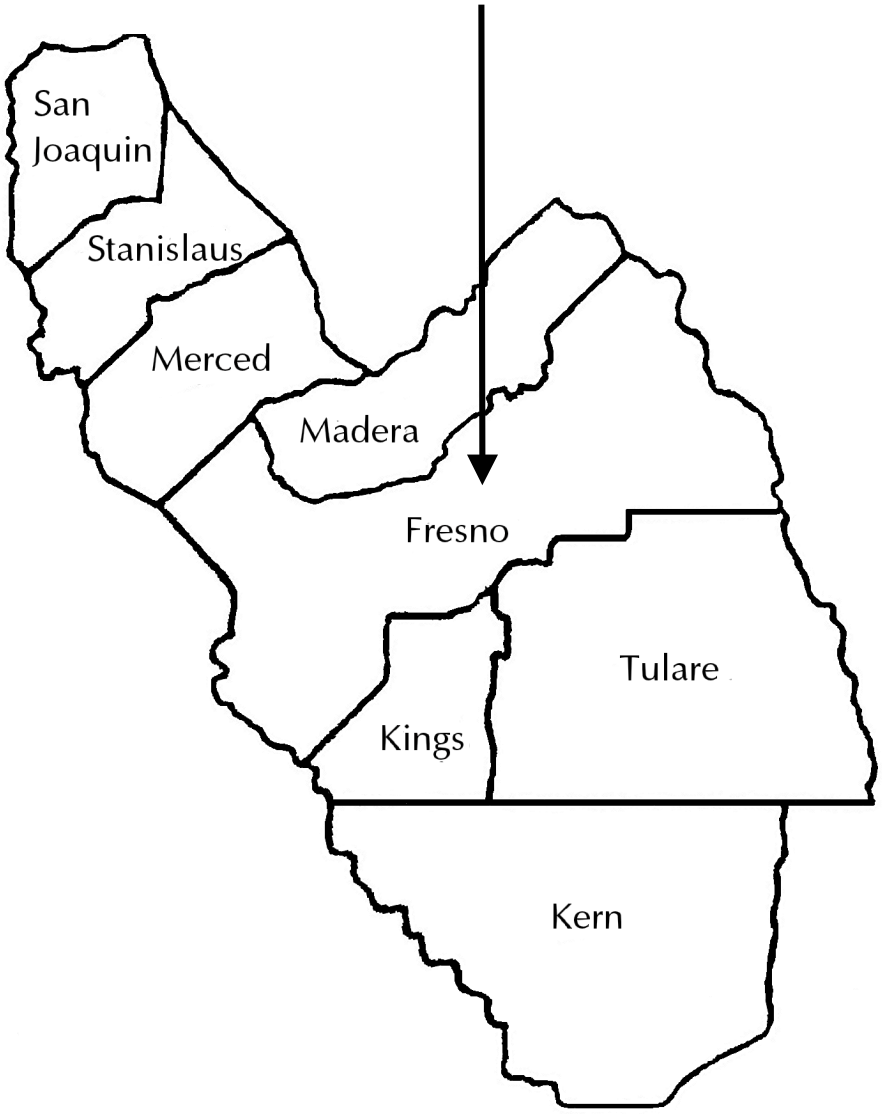
9. Other Agencies Whose Approvals Are Required and Permits Needed:
None. This project does not require any other permits or approvals from the City of Fresno.

10. Name of Person Who Prepared Initial Study:

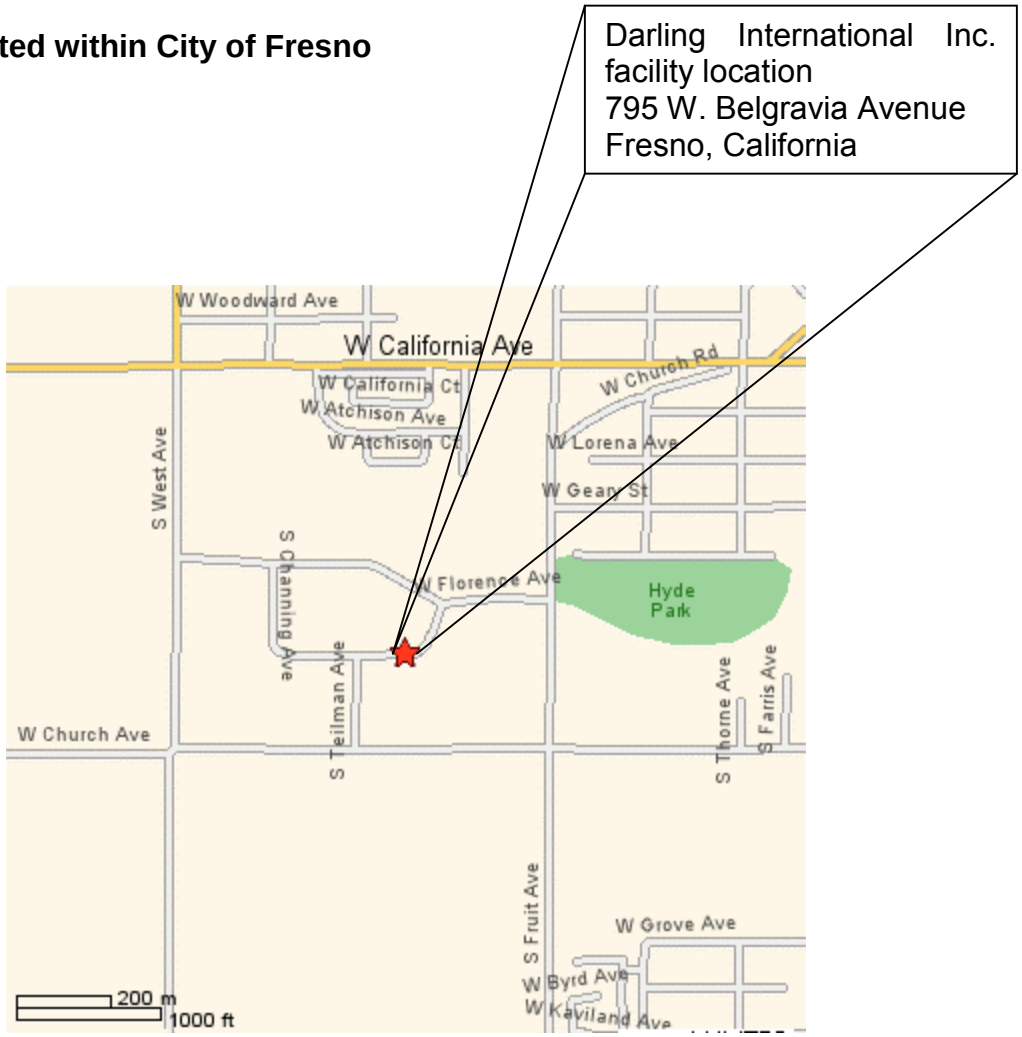
Hector R. Guerra
Senior Air Quality Planner

San Joaquin Valley Unified air Pollution Control District Boundaries

Project is located in Fresno County



Project Located within City of Fresno



B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a **"Potentially Significant Impact"** as indicated by the checklist on the following pages.

☐ Land Use and Planning	☐ Population and Housing
☐ Geophysical	☐ Water
☐ Air Quality	☐ Transportation/Circulation
☐ Biological Resources	☐ Energy and Mineral Resources
☐ Hazards	☐ Noise
☐ Public Services	☐ Utilities and Service Systems
☐ Aesthetics	☐ Cultural Resources
☐ Recreation	☐ Mandatory Findings of Significance

DETERMINATION:

I certify that this document reflects the independent judgment of the District.

__X__ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

_____ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.

_____ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

_____ I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

D. ENVIRONMENTAL IMPACT CHECKLIST

Explanations of all answers on the checklist are located in section E.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?			.	**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				**X**
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				**X**
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?				**X**
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				**X**
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				**X**
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				**X**
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?				**X**
d) Expose sensitive receptors to substantial pollutant concentrations?				**X**
e) Create objectionable odors affecting a substantial number of people?				**X**
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				**X**
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				**X**
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
(including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				**X**
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?				**X**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?				**X**
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				**X**
d) Disturb any human remains, including those interred outside of formal cemeteries?				**X**
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				**X**
ii) Strong seismic ground shaking?				**X**
iii) Seismic-related ground failure, including liquefaction?				**X**
iv) Landslides?				**X**
b) Result in substantial soil erosion or the loss of topsoil?				**X**
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				**X**
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				**X**
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				**X**
VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				**X**
b) Create a significant hazard to the public or the environment through reasonably				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				**X**
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				**X**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				**X**
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				**X**
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				**X**
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				**X**
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with recharge such that there would be a net deficit in aquifer volume or lower the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing uses or planned uses for which permits have been granted)?				**X**
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?				**X**
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?				**X**
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				**X**
f) Otherwise substantially degrade water quality?				**X**
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				**X**
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
involving flooding, including flooding as a result of the failure of a levee or dam?				
j) Inundation by seiche, tsunami, or mudflow?				**X**
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				**X**
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				**X**
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				**X**
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				**X**
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				**X**
XI. NOISE B Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				**X**
b) Exposure of persons to or generation of				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
excessive groundborne vibration or groundborne noise levels?				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				**X**
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				**X**
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				**X**
XII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				**X**
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				**X**
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				**X**
XIII. PUBLIC SERVICES				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X
b) Cumulatively exceed official regional or local population projections?				X
c) Induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure?				X
d) Displace existing housing, especially affordable housing?				X
XIV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
expansion of recreational facilities, which might have an adverse physical effect on the environment?				
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				**X**
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				**X**
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				**X**
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
e) Result in inadequate emergency access?				**X**
f) Result in inadequate parking capacity?				**X**
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				**X**
XVI. UTILITIES AND SERVICE SYSTEMS --Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				**X**
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				**X**
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				**X**
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				**X**
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				**X**
g) Comply with federal, state, and local statutes and regulations related to solid waste?				**X**
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively Considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				**X**
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?				**X**

E. ENVIRONMENTAL IMPACT CHECKLIST COMMENTS

I. Aesthetics

There will be no adverse aesthetic impact of the proposed project because the site is already developed to an industrial facility. The site currently includes six buildings with a maximum height of approximately 45 feet and two storage silos with a maximum height of approximately 65 feet. The project would not create any additional aesthetically offensive sites visible to the public. No significant adverse aesthetic impacts are anticipated.

II. Agriculture Resources

None of the project site is devoted to agricultural use so there will be no direct impact on agricultural resources caused by the proposed project. The site is zoned for industrial uses and has remained in its current use since approved by the County of Fresno in 1957. The site is not enrolled in the Williamson Act. As there is not adjacent farmland, none of the planned activities in the proposed project are of a type that will adversely affect any farmland. The project will not lead to the conversion of any prime or unique farmland to non-agricultural use.

III. Air Quality

The project will not violate any air quality standard, result in a cumulatively considerable net increase in any criteria pollutant or expose sensitive receptors to substantial pollutants. The equipment upgrades of this project are designed to reduce objectionable odors.

Criteria Pollutants

An analysis of Criteria Pollutants, that is, Oxides of Nitrogen (NO_X), Oxides of Sulfur (SO_X), Particulate Matter (PM10), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC) indicates that the project emissions will be under the District threshold and is considered less than significant. Expected emissions are as follows (see Attachment 1 Application for Authority to Construct, Section VIII Calculations, for detailed emissions calculations):

Pre-Project Facility-Wide Emissions					
Permit Unit	NO_X	SO_X	PM10	CO	VOC
C-406-1-1	0	0	0	0	0
C-406-2-0	18,870	75	300	4717	374
C-406-3-4	9855	770	3708	44338	767
C-406-4-3 (ATC)	0	0	227	0	0
Facility-wide Emissions	28,725	845	4,235	49,055	1,141

Post-Project Facility-Wide Emissions					
Permit Unit	NO_X	SO_X	PM10	CO	VOC
C-406-1-2	0	0	0	0	0
C-406-2-2	18,870	75	300	4717	374
C-406-3-4	9855	770	3708	44338	767
C-406-4-2	0	0	227	0	0
Facility-wide Emissions	28,725	845	4,235	49,055	1,141

Odor

It is generally accepted that the raw material receiving and the initial processing area is the part of the process that is most likely to generate nuisance emissions. A very wide range of compounds are known to exist which would cause a 'disagreeable' olfactory response. However, the concentration of compounds, and the very identity of some of them is a very subjective matter. A compound at a certain level would be very disagreeable to one person, where another might not even notice it. Methods of odor reduction, as opposed to trying to quantify odorous emissions, are discussed in detail in Section VIII, Compliance.

Attachment 1, Application for Authority to Construct, contains a more comprehensive description of District imposed rule requirements to eliminate or substantially reduce potential pollutants caused by this project. Below is a listing of applicable District rules:

Rule 2201 (New and Modified Stationary Source Review Rule) (12/19/02)
Rule 2520 (Federally Mandated Operating Permits) (6/21/01)
Rule 4101 (Visible Emissions) (11/15/01)
Rule 4102 (Nuisance) (12/17/92)
Rule 4104 (Reduction of Animal Matter) (12/17/92)
Rule 4201 (Particulate Matter Concentration) (12/17/92)
Rule 4301 (Fuel Burning Equipment) (12/17/92)
Rule 4801 (Sulfur Compounds) (12/17/92)

IV. Biological Resources

The entire site has already been developed with industrial uses and the proposed project will be developed in an area already dedicated to industrial use. The project will not have a substantial adverse effect on the habitat of sensitive species, riparian areas, federally protected wetlands, or interfere with any migratory fish or wildlife species with established migratory corridors. The project will not conflict with any local policies or ordinances protecting biological resources or conflict with any Habitat Conservation Plan.

V. Cultural Resources

There are no known cultural resources or features on the project site. The site is already established with structures. There is no possibility that this project could have any adverse effect on cultural resources including: historical resources, archaeological resources, paleontological resources, geologic features or the disturbance of any human remains. The proposed uses do not include any substantial excavation, however, in the unlikely event that

any archeological or paleontological resources or buried human remains are uncovered at the project site, excavation activities will cease immediately. Any unearthed resources will not be disturbed and the proper authorities/agencies will be notified.

VI. Geology and Soils

There is an extremely low chance of geologic hazards due to the project location toward the center of the San Joaquin Valley floor. There are no known faults or unstable geologic features on the project site. The land in the vicinity of the site is essentially flat so possibility of landslides or collapse are highly unlikely. The project is not located in a known earthquake fault zone. It is not subject to landslides nor will it result in substantial soil erosion or loss of topsoil. The major structures within the project area already exist and meet building code requirements.

VII. Hazards and Hazardous Materials

The proposed project will not utilize or generate hazardous materials. The project is not within one quarter mile of an existing or proposed school. The project is not located on a site included on the list of hazardous materials sites. Proper training and handling techniques will be utilized to ensure that any potential hazards or hazardous materials spills are minimized to the extent practicable. The project is not located on a private airstrip. This project will not interfere with an adopted emergency response/evacuation plan.]

VIII. Hydrology and Water Quality

There will be no change to the site topography as a result of the project. The site is not within the 100-year flood zone so there is no possibility of flooding. Neither hydrology nor water quality will be adversely impacted by the proposed project.

IX. Land Use and Planning

The proposed project property is currently designated by the Edison Community Plan and the 2025 Fresno General Plan the Edison Community Plan and the 2025 Fresno General Plan for heavy industrial planned land use on the north ½ of the property, including the area where the rendering plant facilities are located, with the south ½ of the property designated for light industrial land use. The north ¾ of the property is currently zoned M-3 (*Heavy Manufacturing District*), including the area where the rendering plant facilities are located. The remainder of the property is zoned M-1 (*Light Manufacturing District*). The 2025 Fresno General Plan requires that there are assurances that public facilities and services will be provided to accommodate demand increases or characteristics (peak factors, disruptive traffic movements, fire suppression water demands et. al.) in a manner that will maintain an acceptable level of service to the proposed use and surrounding community in accordance with adopted plans and policies, and development standards.

The project will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. The site is in area zoned for industrial uses as M-3 (Heavy Manufacturing District) by the City of

Fresno. This project does not require any additional permits from the City of Fresno. The existing planned land use, zoning designations, and existing for land uses are summarized below:

	Planned Land Use	Existing Zoning	Existing Use
North	Heavy Industrial	M-3 (Heavy Manufacturing), M-1/BA-15 (Light Manufacturing/ Boulevard Overlay	Animal Processing
South	Heavy Industrial	M-1 (Light Manufacturing)	Vacant/Agricultural
East	Heavy Industrial	M-3 (Heavy Manufacturing) M-1/BA-10 (Light Manufacturing/ Boulevard Overlay)	Industrial Use
West	Heavy Industrial	M-3 (Heavy Manufacturing)	Animal Processing

X. Mineral Resources

There are no known mineral resources on the site or in the immediate vicinity of the site. No impact on mineral resources is anticipated.

XI. Noise

As noted in Section XV (Transportation/Traffic), there will be no additional vehicle trips occurring as a result of the project. Noise levels will remain below significant levels and no adverse impacts are anticipated.

Implementation of Policy H-1-1 of the 2025 Fresno General Plan requires that noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards as presented in Table 9, Maximum Allowable Noise Exposure-Stationary Noise Sources, of the Fresno General Plan.

XII. Population and Housing

The facility currently employs approximately 50 individuals. The project will not result in the need to hire new employees. No impact on local population or the need for housing is anticipated.

XIII. Public Services

The proposed project with not result in an increased demand for local fire protection services. The existing facility is currently designed to meet all local fire safety codes and the proposed project will comply with any applicable fires safety codes as well. On-site water and nearby fire hydrants are available water should the need for fire fighting purposes occur. The project applicant will comply with any requirements, such as fire safety measures, as specified by the City of Fresno Fire Department. The facility is not expected to produce an increase in the demand for other public services.

XIV. Recreation

The project is an industrial facility and will not result in any increase in local population or the demand for recreation services.

XV. Transportation/Traffic

No change in average daily traffic at this facility is anticipated as a result of this project. No impact on local street segments or intersections is anticipated. This project will not conflict with adopted policies, plans, or programs supporting alternative transportation.

XVI. Utilities and Service Systems

The project will not exceed wastewater treatment requirements or require that new wastewater treatment facilities be built. Construction of new storm water drainage facilities will not be required. Sufficient water supplies are available to serve the project with existing resources. Waste disposal needs can be met for this project as required by the City of Fresno.

Darling proposes to prevent future upset conditions that have contributed to odors with upgrades to the wastewater system. As a part of Darling's wastewater management system, several tanks, including two flow equalization tanks, are used to ensure the system operates smoothly. Darling is required to treat wash water before discharging it to the city sewer system, and District permits require that a nuisance condition is not created from standing water or process water being tracked out. Since the wastewater system has a potential for causing nuisance, it will also be included as a part of the rendering process. Darling has proposed to upgrade their wastewater system to help reduce the potential of a nuisance condition. A more detailed analysis of the wastewater system is included in Attachment 1, Authority to Construct, Section VIII, Compliance.

XVII. Mandatory Findings of Significance

This project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

This project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals. Neither does this project have impacts, which are individually limited, but cumulatively considerable. This project will have no potential environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

Based upon consideration of the information provided in the comments to the Environmental Checklist and other analyses performed for this project, it does not have the potential to degrade the quality of the environment or to interfere with either short-term or long-term environmental goals. There will not be any significant cumulative impacts. Finally, the project will not cause any direct or indirect substantial adverse effects on human beings.

References

1. City of Fresno, Edison Community Plan.
2. City of Fresno, 2025 General Plan MEIR.
3. San Joaquin Valley Air Pollution Control District, various rules.
4. San Joaquin Valley Air Pollution Control District, Authority to Construct Application Review Animal Rendering Facility (Darling International Inc.).

ATTACHMENT 1

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

PROJECT DESCRIPTION:
Darling International, Inc. (Darling) proposes to renovate and upgrade their existing rendering operation. No changes in emissions or throughput are proposed. This project will only entail replacing or upgrading existing equipment at Darling's Fresno facility. No new processing equipment that may contribute to nuisance odors is proposed, nor any increases in production.

Current Facility Process Summary

Darling currently receives raw material (animal byproducts) from local slaughterhouses. The raw material is delivered via truck, and is dumped into a receiving pit and onto the receiving floor of the main process building. The raw material is ground and then introduced into the cooker, where water is evaporated off, and the remaining material which consists mainly of fat and protein is cooked. The fat and tallow from the cooker is separated and stored in one of six storage tanks. The resulting cooked material is referred to as crax. The crax is pressed to further remove any tallow, and then ground into a meal consistency, referred to as meat and bone meal (MBM). The MBM is then stored in silos to cool, and loaded out via overhead bins into delivery trucks. Room nuisance emissions from raw material delivery, storage, and handling are controlled by two room air scrubbers. One unit is rated at 100,000 cfm and the other is rated at 75,000 cfm. The building is usually kept under negative pressure during process operation in order to ensure nuisance odors are collected and controlled.

The cooker exhaust is controlled by a condenser which collects heavier condensible gases, while the non-condensible gases are ultimately controlled by a thermal oxidizer.

Please note that a more detailed analysis and discussion of each part of this proposal is included in Section VIII, Compliance. A summary of the proposal is presented:

- Replace the existing concrete floor to include new scupper and sump collection system, eliminating the main sump outside
- Replace the existing wastewater pre-treatment system with a new system to include a roto strainer, mechanical skimmer, dissolved air flotation unit (DAF), air system, sludge tank, and associated plumbing, pumps, and control systems
- Upgrade packing, plumbing, and controls on the existing 75,000 cfm room air scrubber
- Upgrade packing, plumbing, and controls on the existing 100,000 cfm room air scrubber
- Upgrade the existing scrubber and thermal oxidizer ductwork
- Install a new 12,000 cfm venturi scrubber in the cooker exhaust prior to the thermal oxidizer
- Replace the existing 12,000 cfm thermal oxidizer fan with a new fan
- Replace the existing Dupps Hogger (a grinding unit) with one new Atlas-Stord Model TMA UNI 4 grinder
- Install a new 27,000 pound surge bin to stage ground raw materials
- Install 19 new material conveyors (inside the main production building) to replace and supplement existing conveyors
- Replace motor control center and other electrical upgrades
- Replace the existing Dupps press with a new Atlas-Stord Model AS-300 High Pressure press
- Replace the existing control room with a new control room
- Install a new fat tallow work tank with pumps to work with the new cooker

- Replace the existing 260 J Dupps Cooker with an Atlas-Stord Model TST-2264 Cooker
- Install a new Roto-Shear free fat drainer to the new cooker
- Replace chlorine gas in room air scrubbers with either Radox or chlorine dioxide (ability to use both, not simultaneously)
- Install closing devices on all entry/exit doors (per applicant)

Not all modifications will have an effect on air quality, but they are all presented to illustrate the magnitude of renovation that Darling is proposing. The following is a discussion of each part of the project that would require an air quality permit, as they relate to air quality and nuisance mitigation.

Raw Material Receiving and Handling - ATC C-0406-1-2
Darling is proposing to replace the raw material grinder with a more efficient unit that will grind the received material in a uniform manner. Darling is also proposing to install a new 27,000 pound surge bin to hold the ground material before it is introduced into the process. The benefits of these changes are discussed in further detail in Section VIII, Compliance.

Upgrades to Odor Control System - ATC C-0406-1-2
The enclosed processing building is controlled by two room air scrubbers, a 75,000 cfm unit and a 100,000 cfm unit. These scrubbers currently use chlorine gas as an oxidant. Darling is proposing to replace the chlorine gas with chlorine dioxide or Radox, modifying the scrubbers such that either oxidant may be used at any time. Chlorine dioxide and Radox both have greater particle affinities than chlorine gas, and are less toxic and dangerous to use.

Darling is proposing to replace the packing material in both of the room air scrubbers to a more efficient type with greater control capabilities. The manufacturer of the new packing material has submitted data showing a large increase in surface area with the new material as compared to the current packing material (see Appendix C, Appendices are available at the District Central Office upon request).

Wastewater Management System - ATC C-0406-1-2
As a part of Darling's wastewater management system, several tanks including two flow equalization tanks are used to ensure the system operates smoothly. Darling is required to treat wash water before discharging it to the city sewer system, and District permits require that a nuisance condition is not created from standing water or process water being tracked out. Since the wastewater system has a potential for causing nuisance, it will also be included as a part of the rendering process. Darling has proposed to upgrade their wastewater system to help reduce the potential of a nuisance condition. A more detailed analysis of the wastewater system is included in Section VIII, Compliance.

Cooker Replacement - ATC C-0406-2-2
The existing Dupps 260J cooker is proposed to be replaced by an Atlas-Stord Model TST-2264 cooker. The existing cooker is nearing the end of its useful service life and requires replacement. Emissions from the cooker will be controlled by an existing condenser which is connected to an existing thermal oxidizer then incinerated. Darling is proposing to install a 12,000 cfm venturi scrubber before the thermal oxidizer. The fan on the thermal oxidizer serving this cooker will also be upgraded, in order to better control emissions.

A fat tallow work tank will also be added as part of the new cooker. The fat tallow work tank holds in reserve fat or tallow to be incorporated into the cooking process as required. Each

batch of raw material has varying quantities of fat, and in order for the cooker to perform at its most efficient level, a certain amount of fat must be present in the process stream. Should a particular batch of raw material be deficient in fat content, the work tank will add the required amount of fat.

Crax Receiving and Handling System, and Six Tallow and Yellow Grease Storage Tanks - ATC C-0406-4-2

Darling has several pieces of equipment that are not included on any District permits. This equipment, however, has historically operated at the facility. This unpermitted equipment will be included in the Authorities to Construct (ATCs) that will be issued as a part of this project, and are listed below:

Darling operates a crax receiving and processing area controlled by the room air scrubbers in conjunction with its meat and bone meal (MBM) storage and loadout system.

The crax receiving area is an existing operation that has historically been a part of the processing operations at this facility. Darling is not proposing any throughput increases due to crax receiving operations. The crax receiving operation will be included on permit C-406-4. A more detailed analysis of the crax receiving operation is included in Section VIII, Compliance.

Six tallow and yellow grease tanks are also operated by Darling to hold these finished products. The District is considering these units to be a part of the entire rendering operation, and thusly will be under permit. Darling has historically operated these tanks, and proposes to continue without modification. The tallow and yellow grease tanks will be included on permit C-406-4.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (12/19/02)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4101 Visible Emissions (11/15/01)
Rule 4102 Nuisance (12/17/92)
Rule 4104 Reduction of Animal Matter (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4301 Fuel Burning Equipment (12/17/92)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice

III. Project Location

The facility is located at 795 W. Belgravia in Fresno, CA.

This facility is located in an area of attainment for CO, but is non-attainment for PM10 and ozone.

This site is not within 1,000 feet of a K-12 school, therefore the requirements of California Health and Safety Code 42301.6 (School Noticing) do not apply.

IV. Process Description

Please note that a block diagram is included in Appendix H. Darling International is an animal rendering facility. Animal raw material (raw material) are transported by truck from local slaughterhouses and other sources to the receiving area. The raw material is conveyed to grinders where it is ground and chopped into uniform size pieces. The material is then introduced into a cooker where the material is indirectly heated. Vapors from the cooker are condensed in an air-cooled condenser. The condensate is again sent to the municipal sewers.

Non-condensible vapors that escape the air-cooled condensing process are treated by a new 12,000 cfm venturi scrubber. The venturi scrubber exhausts to the existing thermal oxidizer. Any remaining emissions will be incinerated before being vented to the atmosphere.

The resulting material from the cooker is meat and bone meal (MBM). MBM is conveyed to storage silos where they are stored for loadout. Insignificant amounts of particulate matter are emitted from the loadout system (0.7 lb PM10/day, see C-1041037), but what emissions do exist are controlled by the 75,000 cfm room air scrubber. The loadout system is enclosed in the processing building which is kept under negative pressure, ensuring 100% capture efficiency.

Existing Crax Operation Not Currently Under Permit
Crax from other Darling facilities is received at the Fresno plant for further processing into MBM. Crax is the product that is removed from the cooker once cooking has been completed. Crax differs from MBM in that it is basically unpressed and unground MBM. Crax may be sold in this form, or it may be pressed to remove the tallow content, and then ground into MBM.

Crax from Darling's other facilities is delivered by truck to the crax receiving building and dumped onto the receiving floor. The crax is screw conveyed via an opening in the floor to be mixed with crax that is produced by the Fresno facility. A crax press is then used, where the remaining tallow is pressed out of the crax. The crax is then conveyed to grinding equipment where it is processed into MBM.

Existing Tallow Storage Tanks Not Currently Under Permit
Darling operates six tallow and fat storage tanks as a part of its rendering operation. These pieces of equipment will be included because they are considered an integral part of the operation.

Existing Wastewater System Not Currently Under Permit
Wastewater systems, although not traditionally associated with air pollution permitting, are not excluded from consideration of air quality permits, especially those systems that have a potential to present an air quality nuisance. Darling operates a wastewater system that is outlined as below:

Wastewater is collected and pumped to a mechanical skimmer where fats, oils, and greases (FOG) and other solids are removed before the water is pumped to the equalization tanks. These tanks control the flow of wastewater to the dissolved air flotation unit (DAF), which prevents surges in wastewater feed that would negatively affect the performance of the DAF.

The DAF utilizes chemistry and dissolved air to float out additional organic solids and FOG that may be suspended in the wastewater before being discharged to the City of Fresno's Wastewater Treatment Plant. The material that is recovered from the skimmer and the DAF are

taken back into the raw material stream, and in some cases the material collected from the DAF is shipped offsite depending on finished product quality demands.

Potential De-bottlenecking

With the proposed replacement of the cooker, a potential for de-bottlenecking of the process is realized. According to Darling, and production data submitted (see Appendix B), the current cooker has an average material handling range of 30,000 lb/hr to 36,669 lb/hr. The variability is due to the dynamic nature of the raw material; for example how much fat and water is present in the feed stream.

The below discussion and calculation is derived from actual production data presented in Appendix B, and shows that the current cooker is capable of surpassing the existing production limit. Since the cooker is capable of processing raw material beyond the current 850,000 throughput limit, it is shown that the cooker is limited by permit condition, and not by physical design.

In a production report dated 9/26/02 (see Appendix B) the cooker's average 20 hour capacity is 820,000 lbs. This value takes into account that 16,800 lbs of water was evaporated per hour during this particular processing day. In the remaining production records, the amount of water evaporated on an hourly basis is higher than this value, ranging from 17,280 lb water evaporated per hour to 19,959 lb water evaporated per hour. Again, the variability of water content is dependant upon the particular loads of raw material. This variable is not controlled by Darling. The lower the water content of each individual raw material load, the more quickly the cooker can process the raw material, and the greater the output.

On 9/26/02, the facility operated for 13 hours, and during this 13 hours processed 495,000 pounds of raw material. This translates into an hourly average of 38,000 lbs of raw material. Since Darling may operate for 24 hours per day, multiplying this hourly average by 24 hours yields a potential throughput of 912,000 pounds per day. It is again emphasized that this value is greater than the permit limit of 850,000 pounds, and that the process is not restricted by the physical limitations of the existing cooker.

The new cooker's performance is guaranteed by the manufacturer to 35,000 lb/hr average provided ideal protein, fat, and water ratios are maintained. This number falls within the range of the current cooker's capacity, and it is therefore concluded that no de-bottlenecking will occur with approval of the cooker replacement. The average process rates are similar. Please see Appendix B for the manufacturer's guarantee and current average throughput calculations.

Although no de-bottlenecking is not expected by replacing the cooker, it is important to note that cooker replacement is not considered a routine replacement. Section 3.32.2 of Rule 2201 limits the definition of a routine replacement:

3.33.2 There is no increase in design capacity, unless an old part is no longer available in which case the replacement can result in a design capacity increase of up to 10%. No change to the permitted throughput or emissions is authorized due to a change in design capacity as part of routine replacement. Such changes shall require application for permit modification.

The current cooker model is no longer being manufactured, but the design capacity of the new cooker exceeds the existing cooker by greater than 10%. The maximum evaporation rate of the new cooker is rated at 23,460 lb/hr (per manufacturer), while the maximum evaporation rate of

the existing cooker is 19,500 lb/hr (per nameplate on cooker). Therefore, the cooker replacement does not meet the definition of a routine replacement.

However, the design capacity does not necessarily directly relate to cooker throughput, since the high variability of raw material must be taken into account. As presented by Darling, the actual average throughput of the new cooker (35,000 lb/hr) can only be performance guaranteed by the manufacturer to fall within the actual operating range of the current cooker (30,000 lb/hr - 36,669 lb/hr).

It should be noted that a contemporaneous replacement of the silos was applied for and approved in District project C-1041037. An analysis of potential de-bottlenecking was presented in that evaluation. No de-bottlenecking of the process was found, and emissions from silo replacement were also found to be insignificant.

V. Equipment Listing

C-0406-1

Pre-Project Equipment Description:

C-0406-1-1: ODOR CONTROL SYSTEM WITH ONE 150 HP, 100,000 CFM PACKED-TOWER SCRUBBER, ONE 125 HP, 75,000 CFM PACKED-TOWER SCRUBBER AND ASSOCIATED DUCTING

Proposed Modification for ATC C-0406-1-2:

Replace raw material grinder, repack existing 75,000 cfm and 100,000 cfm scrubbers, change oxidant used from chlorine gas to chlorine dioxide or Radox, and add existing wastewater system flow equalization tanks into the equipment description.

Post Project Equipment Description:

C—0406-1-2: RAW MATERIAL RECEIVING OPERATION INCLUDING A RECEIVING AREA, SURGE BIN, PROCESSING EQUIPMENT, MEAL GRINDING AREA, AND WASTEWATER TREATMENT SYSTEM WITH TWO FLOW EQUALIZATION TANKS SERVED BY ONE 100,000 CFM PACKED-TOWER WET SCRUBBER AND ONE 75,000 CFM PACKED-TOWER WET SCRUBBER (75,000 CFM PACKED-TOWER WET SCRUBBER SHARED WITH C-0406-4)

C-0406-2

Pre-Project Equipment Description:

C-0406-2-0: 18 MMBTU/HR NATURAL GAS-FIRED THERMAL OXIDIZER (AFTERBURNER) AND A HERCULES 350 BOHP PACKAGE FIRETUBE WASTE HEAT RECOVERY STEAM BOILER

Proposed Modification for ATC C-0406-2-2:

Replace cooker, install new tallow work tank, install new Roto-Shear fat drainer, install new 12,000 cfm venturi scrubber, and upgrade thermal oxidizer fan.

Post Project Equipment Description:

C-0406-2-2: ANIMAL RENDERING OPERATION INCLUDING AN ATLAS-STORD TST-2264 COOKER, TALLOW WORK TANK, ROTO-SHEAR FAT DRAINER, PRESSES, SCREWS, CENTRIFUGE, AND CONDENSER SERVED BY A 12,000 CFM VENTURI SCRUBBER AND AN 18 MMBTU/HR NATURAL GAS-FIRED THERMAL OXIDIZER WITH AN ASSOCIATED 350 HP HEAT RECOVERY STEAM BOILER

C-0406-4

Pre-Project Equipment Description:

C-0406-4-0: MEAL PRODUCT STORAGE AND LOADOUT OPERATION WITH FOUR ENCLOSED STORAGE LOADOUT BINS SERVED BY A PACKED-TOWER SCRUBBER (SHARED WITH PERMIT C-406-1)

Proposed Modification for ATC C-0406-4-2:

Add an existing crax receiving and processing area to equipment listing, along with existing tallow and yellow grease tanks.

Post Project Equipment Description:

C-0406-4-2: MEAT AND BONE MEAL PRODUCT STORAGE AND LOADOUT OPERATION WITH A CRAX RECEIVING AND GRINDING AREA, SIX TALLOW AND YELLOW GREASE TANKS, ASSOCIATED CONVEYORS, FOUR ENCLOSED STORAGE LOADOUT BINS WITH TWO SILOS WITH A STORAGE CAPACITY OF 259,948 GALLONS SERVED BY A 75,000 CFM PACKED-TOWER SCRUBBER (SHARED WITH PERMIT C-406-1)

VI. Emission Control Technology Evaluation

Emissions are NOx, SOx, PM10, CO, and VOC from the combustion of fuel. The use of natural gas as fuel will help to ensure that emissions from combustion are minimized, as natural gas is considered a clean fuel.

VOC (odor) emissions from the cooking process are treated by condensers that remove condensible emissions from the exhaust stream, and any noncondensible emissions are scrubbed before being incinerated in a thermal oxidizer. Per AP-42. Section 9.5.3, VOC emissions are primarily in the form of odors. No particulate emissions are expected, since the material at this point is still very wet, and friable portions are not likely. AP-42 also lists emission factors for ammonia and hydrogen sulfide, but these only apply to direct-fired blood drying operations. Darling International does not process blood meal.

No particulate matter is expected from raw material receiving and dumping, since raw material has a high moisture content.

Particulate matter is emitted from the silo loadout system, and these are collected and controlled by the room air scrubbers. See project C-1041037 and below for analysis of these emissions.

VII. General Calculations

A. Assumptions

- No increase in fuel usage (applicant proposed)
- No increase in criteria pollutant emissions from any permit unit (applicant proposed)
- Facility operates 6 days per week, 24 hours/day (applicant)
- Natural gas consumption is limited to 2,470,000 ft^3/week (current PTO, Appendix E)

B. Emission Factors

Emission factors for unit C-406-2 oxidizer are taken from the current Permits to Operate (see Appendix E). These emission factors take into account controlled VOC emissions from the cooking and rendering process.

Cooking Operation (thermal oxidizer exhaust)

NOx – 2.52 lb/hr (please note that this value represents a combined NOx emission rate from both the cooker and the thermal oxidizer due to natural gas combustion)
SOx – 0.01 lb/hr
PM10 – 0.04 lb/hr
CO – 0.63 lb/hr
VOC – 0.05 lb/hr

Emission factor for the silo is 0.0008 lb PM10/ton MBM loaded, and is taken from project C-1041037.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

C-406-1-1

The raw material receiving and handling area has a unique emissions profile. Criteria pollutant emissions at this point are generally unknown and assumed to be negligible as discussed below:

Criteria Pollutants
NOx emissions are not likely, as NOx formation depends upon high heat and the availability of oxygen. Although there is plentiful oxygen in the processing building, the raw material is not heated at this stage.

SOx emissions are not likely, as SOx also depends upon combustion processes in order to be emitted into the atmosphere. Again, no heating or cooking takes place at this stage of the process.

PM10 emissions may be present, but since raw material is very wet at this point of the process, it is not likely that any material would become entrained due to handling or grinding. It is more likely that raw material movement would cause splattering instead of becoming entrained.

CO emissions result only from the incomplete (less than stoichiometric) combustion of fuel. Since no fuel is being used at this point of the process, CO emissions are non-existent.

VOC emissions may result from the decomposition of the raw material as it is awaiting processing. However, the amount of these VOC emissions is unknown and is generally believed to be more of a nuisance problem than contributing to an ozone problem. It is extremely difficult to quantify the VOC emissions from raw material decomposition. Different factors such as temperature, moisture content, humidity, age of the raw material, raw material type (whether it be a cow, sheep, or pig) all would have significant impact on decomposition. Therefore this evaluation will assume these emissions are negligible at this point in time, and concentrate more on odor reduction, as discussed in Section VIII, Compliance.

Nuisance Emissions

It is generally accepted that the raw material receiving and the initial processing area is the part of the process that is most likely to generate nuisance emissions. A very wide range of compounds are known to exist which would cause a 'disagreeable' olfactory response. Compounds such as skatole and the lighter mercaptans have been described by some people to be quite disagreeable. However, the concentration of these compounds, and the very identity of some of them is a very subjective matter. A compound at a certain level would be very disagreeable to one person, where another might not even notice it.

For this stage of the process, the focus will be methods of odor reduction as opposed to trying to quantify odorous emissions. Methods of odor reduction are discussed in detail in Section VIII, Compliance.

C-406-2-0

Emissions shown below are controlled emissions after the thermal oxidizer.

Daily Emissions

Pollutant	EF (lb/hr)	hr/day	lb/day
NOx	2.52	24	60.5
SOx	0.01	24	0.2
PM10	0.04	24	1.0
CO	0.63	24	15.1
VOC	0.05	24	1.2

Annual Emissions

Pollutant	EF (lb/hr)	hr/year	lb/year
NOx	2.52	7488	18,870
SOx	0.01	7488	75
PM10	0.04	7488	300
CO	0.63	7488	4717
VOC	0.05	7488	374

Quarterly Emissions

Pollutant	lb/year	Qtr/yr	lb/qtr
NOx	18,870	4	4718
SOx	75	4	19
PM10	300	4	75
CO	4717	4	1179
VOC	374	4	94

C-406-4-0

PE1 values are based on the throughputs (since they are not changing) from the PE2 calculation in project C-1031415. The silo system has three potential emission points:

EP1 = transfer of meal through elevator from grinding room to storage silos
EP2 = transfer of meal from storage silos to overhead bin
EP3 = transfer of meal from overhead bin to delivery truck

Please note that the augers at this facility are open augers, but since all material movement occurs inside an enclosed building kept under negative pressure at all times, the augers will be considered enclosed, and not a source of emissions.

Permit #	throughput (ton/day)	EF (lb/ton)	VOC		PM10	
			PE1 (lb/day)	PE1 (lb/yr)	PE1 (lb/day)	PE1 (lb/yr)
C-406-4-0						
EP1	130*	0.0008	0	0	0.1	38.0
EP2	324	0.0008	0	0	0.3	94.6
EP3	324	0.0008	0	0	0.3	94.6
		Totals	**0**	**0**	**0.7**	**227**

*Max throughput based on maximum production rate assuming 30% by weight of raw material results in protein solids: 850,000 lb/day x 0.3 x 1/2000 = 127.5 ~130 ton/day.

The crax receiving operation is not expected to be a significant source of emissions. Crax is unground product that has completed the cooking process. The crax that is received from other Darling facilities is mixed with the crax that is produced at the Fresno facility. Until this material is ground, it is not expected to create particulate emissions. As shown above, emissions are not assessed until the material is transferred from the grinding room to the storage silos.

2. Post Project Potential to Emit (PE2)

No increase in fuel use or raw material throughput is proposed in this project. Darling is only proposing to renovate and update the existing production facility.

C-406-1-2

Potential emissions from this unit are not increasing, therefore PE2 is equal to PE1 as discussed above.

C-406-2-2

Potential emissions from this unit are not increasing, therefore PE2 is equal to PE1 as calculated above.

C-406-4-2

No emissions increase is proposed at the loadout system. This ATC is to add crax receiving and the tallow tanks to the permit. Darling has stated that the crax received from other facilities will not impact the throughput limitation that is currently on the permit.

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
C-406-1-1	0	0	0	0	0
C-406-2-0	18,870	75	300	4717	374
C-406-3-4	9855	770	3708	44338	767
C-406-4-3 (ATC)	0	0	227	0	0
Pre-Project SSPE (SSPE1)	28,725	845	4,235	49,055	1,141

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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 that have occurred at the source, and which have not been used on-site.

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
C-406-1-2	0	0	0	0	0
C-406-2-2	18,870	75	300	4717	374
C-406-3-4	9855	770	3708	44338	767
C-406-4-2	0	0	227	0	0
Post-Project SSPE (SSPE2)	28,725	845	4,235	49,055	1,141

5. Major Source Determination

Pursuant to Section 3.25 of District Rule 2201, a major source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.25.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

Major Source Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Pre-Project SSPE (SSPE1)	28,725	845	4,235	49,055	1,141
Post Project SSPE (SSPE2)	28,725	845	4,235	49,055	1,141
Major Source Threshold	50,000	140,000	140,000	200,000	50,000
Major Source	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and also is not becoming a Major Source as a result of this project.

6. Baseline Emissions (BE)

The BE calculation (in lbs/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.

BE = Pre-project Potential to Emit 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 Section 3.23

As shown in Section VII.C.5 above, the facility is not a Major Source for any criteria pollutant.

Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

Baseline Emissions [BE] (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
C-406-1-2	0	0	0	0	0
C-406-2-2	18,870	75	300	4717	374
C-406-4-2	0	0	227	0	0

7. Contemporaneous Increase in Permitted Emissions (CIPE) & Title I Modification

A Major Modification occurs if the Post-Project Stationary Source Potential to Emit (SSPE2) exceeds the Major Source Thresholds (as defined in Rule 2201) and the Contemporaneous Increase in Permitted Emissions (CIPE), is equal to or greater than one or more of the following threshold values:

As discussed in Section VII.C.5 above, the facility is not a Major Source for any criteria pollutant; therefore according to District Policy APR 1125 *(currently in draft form)*, CIPE calculations are not necessary and the project does not constitute a Title I Modification.

8. 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. Since emissions are essentially not changing, QNEC is equal to zero for all pollutants for all units.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

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 AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in a Title I Modification.

*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.

Modification of emissions units – AIPE > 2 lb/day

AIPE = PE2 – 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)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's Potential to Emit 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

AIPE = PE2 – (PE1 ∗ (EF2 / EF1))

C-406-1-2

As discussed in Section VII.C.1, there are no appreciable amounts of criteria pollutants from this operation, therefore AIPE calculations are not required.

C-406-2-2

Emission factors are not changing for this emissions unit (silo loading), therefore EF2 is equal to EF1. Also, since PE2 is equal to PE1 as shown in Section VII.C.2, the AIPE is zero, as shown in the calculation below

C-406-4-2

This is an existing emission unit that is being modified by addition of the MBM receiving operation. As discussed in section VII.C.2, no appreciable increase in emissions is expected.

As demonstrated above, the AIPE is not greater than 2.0 lb/day for PM_{10} emissions; BACT is not triggered.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 or Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Post Project SSPE (SSPE2)	28,725	845	4,235	49,055	1,141
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered	Yes	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NOx only, therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for PM10 is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x 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 = Pre-project Potential to Emit 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)

Since this facility is a non-Major source, BE is equal to PE1 as discussed and presented in Section VII.C.2. No increases in cargo carrier emissions is expected, and the DOR will be assumed to be one for the purposes of these calculations.

C-406-1

No criteria pollutant emissions are assessed to this permit unit, therefore no calculation is necessary. No offsets will be required for unit C-406-1.

C-406-2

([18,870 lb NOx/year – 18,870 lb NOx/year] + 0) x 1 = 0

No offsets will be required for unit C-406-2.

C-406-4

There are no NOx emissions from unit 4, therefore no calculation is necessary. No offsets will be required for unit C-406-4.

C. Public Notification

1. Applicability

Public noticing is required for:
a. Any new Major Source, which is a new facility that is also a Major Source,
b. Title I Modifications,
c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
d. Any project which results in the offset thresholds being surpassed, and/or
e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Title I Modification

As demonstrated in VII.C.7, this project does not constitute a Title I Modification; therefore, public noticing for Title I Modification purposes is not required.

c. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit 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.

d. Offset Threshold

Public notification is required if the Pre-Project Stationary Source Potential to Emit (SSPE1) is increased from a level below the offset threshold to a level exceeding the emissions offset threshold, for any pollutant.

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required
NO_X	28,725	28,725	20,000 lb/year	No
SO_X	845	845	54,750 lb/year	No
PM_{10}	4,235	4,235	29,200 lb/year	No
CO	49,055	49,055	200,000 lb/year	No
VOC	1,141	1,141	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; the NOx emissions were already above threshold levels, and they are not increasing. Therefore public noticing is not required for offset purposes.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required
NO_x	28,725	28,725	0	20,000 lb/year	No
SO_x	845	845	0	20,000 lb/year	No
PM_{10}	4,235	4,235	0	20,000 lb/year	No
CO	49,055	49,055	0	20,000 lb/year	No
VOC	1,141	1,141	0	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, this project will not result in emissions, for any criteria pollutant, which would subject the project to any of the noticing requirements listed above. Public notice is not required for this project for New Source Review purposes. Public noticing will be required, however, for Environmental Justice reasons, and because Darling is a high-profile facility. The public notice process is discussed in more detail in Section VIII, Compliance.

D. Daily Emission Limits (DELs)

C-406-1-2

The current DEL of 850,000 lbs of raw material per day will remain.

- Total facility raw material process rate shall not exceed 850,000 pounds per day. [District Rules 2201 and 4102]

C-406-2-2

- Emissions from the thermal oxidizer shall not exceed any of the following emission limits: 2.52 lb NOx/hr, 0.01 lb SOx/hr, 0.04 lb PM10/hr, 0.63 lb CO/hr, and 0.05 lb VOC/hr. [District Rule 2201]

C-406-4-2

- Total facility raw material process rate shall not exceed 850,000 pounds per day. [District Rules 2201 and 4102]

- Total meal materials loaded from the storage bins shall not exceed 648,000 pounds per day. [District Rule 2201]

- Emissions from MBM loading shall not exceed 0.7 lb/day. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

Please note, however, that monitoring of the oxidation-reduction potential (ORP) when using chlorine dioxide, and of pH when using Radox in the scrubbers on a continuous basis will be required to ensure compliance with Rule 4102. The operating temperature of the thermal oxidizer will also be monitored on a continuous basis. See discussion in Rule 4102 compliance, below.

3. Recordkeeping

C-406-1

Records of the daily raw material throughput, continuous ORP readings when using chlorine dioxide in the scrubber, continuous pH readings when using Radox in the scrubber, and time required to process each incoming load to ensure compliance with the 24 hour limitation shall be kept.

C-406-2

Records of the amount of fuel used shall be kept on a weekly basis.

C-406-4

Records of the daily raw material throughput and amount of MBM loaded shall be kept.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge air contaminant shall which is as dark as or darker than 20% opacity for greater than three minutes in any one hour.

Darling International is using natural gas to fuel its processes, and all exhaust is controlled by wet scrubbers before being emitted into the atmosphere. Further, a review of the facility's compliance history does not show any violations of this opacity standard.

Since Darling is not proposing to increase emissions, and the new proposed equipment is not likely to increase in dust or smoke emissions, continued compliance with this rule is expected.

Rule 4102 Nuisance

The emissions of most concern from animal rendering facilities are nuisance emissions in the form of objectionable odors. Since the raw material accepted at these types of facilities is in various stages of decay, the potential for odors is great, especially during the warmer summer months when the higher ambient temperature speeds decomposition. To add to the odors from decay, cooking of the raw material can present nuisance problems, since the cooker exhaust is ultimately emitted into the atmosphere.

To address these odor concerns, Darling International has employed the use of various odor control techniques, which are discussed below.

1. Nuisance Emission Control

Wet scrubbers are the most appropriate types of control devices to treat large amounts of airflow. This technology is employed in most rendering facilities, as it has proven to be effective at mitigating odorous emissions when designed properly, and to be cost-effective.

All processing room air at the Darling facility in Fresno is controlled by two large scrubbers; one 75,000 cfm unit and one 100,000 cfm unit. These scrubbers are of the counter-flow design, in

which the oxidant is sprayed from an upper orifice down towards the bottom of the scrubber. The exhaust stream to be treated is introduced into the scrubber from the bottom and travels upward. During cross-mixing of the two media, the oxidant comes into contact with and neutralizes any malodors in the exhaust stream.

Scrubber Oxidant
The existing scrubbers currently use chlorine gas as the oxidant. Darling International has proposed to replace the use of chlorine gas with chlorine dioxide and Radox chemistry (see Appendix F for Radox chemistry information sheet). Both of these oxidants have a higher particle affinity than chlorine gas, and an increased odor control efficiency is expected.

When the scrubbers are using chlorine dioxide as the oxidant, Darling will be required to monitor the oxidation-reduction potential (ORP) on a continuous basis. As long as the ORP is a positive value, the oxidant is configured properly for maximum control. However, to be conservative and ensure a margin of safety, the applicant has proposed an ORP of at least +300 millivolts at all times. The applicant states that this voltage will be easier to maintain, and will still clearly show that the chlorine dioxide is at its maximum effectiveness for odor control.

Radox is also proposed to be used as an oxidant. Radox effectiveness is highly dependent upon the pH of the liquor. According to the Radox equipment supplier, the liquor must be maintained in an acidic state to ensure maximum control effectiveness (see Appendix F). The equipment supplier recommends that the pH be maintained at 6.0 or below, but above 3.0 in order to avoid equipment degradation due to excessively high acid concentrations.

The following conditions will be placed on the draft Authority to Construct for unit C-406-1:

- When using chlorine dioxide as the scrubber oxidant, the oxidation-reduction potential (ORP) shall be at least 300 mV, measured on a continuous basis. [District Rule 4102]
- When using chlorine dioxide as the scrubber oxidant, the ORP probe shall be calibrated in accordance with the manufacturer's specifications. [District Rule 4102]
- When using chlorine dioxide as the scrubber oxidant, if the ORP of the liquor solution used in any of the scrubbers falls below the permitted level, the permittee shall immediately correct the ORP of the scrubber liquor solution to comply with the acceptable limit. If the ORP of the liquor solution continues to be below the acceptable limit for more than 10 consecutive minutes, the permittee shall notify the District within the following 1 hour.
- When using chlorine dioxide as the scrubber oxidant, the permittee shall maintain a log of the ORP calibrations which shall include the date and time of each calibration and any corrective actions needed to bring any of the ORP monitors back into calibration. [District Rule 4102] N
- When using Radox as the scrubber oxidant, the pH of the scrubber liquor shall be maintained between 3.0 and 6.0, measured on a continuous basis. [District Rule 4102] N
- When using Radox as the scrubber oxidant, if the pH of the liquor solution used in any of the scrubbers falls out of the permitted acceptable range, the permittee shall immediately correct the pH of the scrubber liquor solution to within the acceptable range. If the pH of the liquor solution continues to be out of the permitted acceptable range for more than 10 consecutive minutes, the permittee shall notify the District within the following 1 hour. [District Rule 4102] N
- When using Radox as the scrubber oxidant, all of the pH monitors shall be calibrated in accordance with the manufacturer's specifications. [District Rule 4102] N

- When using Radox as the scrubber oxidant, the permittee shall maintain a log of the pH monitor calibrations which shall include, the date and time of each calibration and any corrective actions needed to bring any of the pH monitors back into calibration. [District Rule 4102] N

Scrubber Repacking

A scrubber uses the natural process of re-circulating water decontaminating air - essentially the same process that occurs during a rainstorm.

1. Contaminated air is passed through the scrubber using either negative or positive pressure, created from a fan either upstream or downstream from the scrubber unit.
2. The gas stream enters the scrubber unit near the bottom and travels up through the packed bed section spreading the gas out and exposing much more of its surface area.
3. The gas stream is vigorously exposed to the scrubber solution, through a de-mister assembly (to remove the liquid droplets from the exiting gas).
4. The clean gas stream is then discharged to the atmosphere.

Both the 75,000 cfm and 100,000 cfm scrubbers will be repacked using more efficient packing material. In the 75,000 cfm scrubber, surface area will be increased from 19,888 ft^2 to 42,440 ft^2. In the 100,000 cfm scrubber, surface area will be increased from 25,168 ft^2 to 43,472 ft^2 (see Appendix C). This dramatic increase in surface area will allow better non-condensible adsorption efficiency because an increase in surface area allows for more opportunities for odor particles to come into contact with the control media.

Process Building Under Negative Pressure

Darling's main processing building is kept under constant negative pressure because of the airflow induced by the two scrubbing units. To ensure that negative pressure will be maintained, Darling has proposed to equip all entry doors with automatic closing devices. Darling will also be required to install and maintain airflow measurement devices that will indicate to personnel and District inspectors that negative airflow is present.

The main processing building has two large main doors that will be kept closed except during delivery truck entry and exit. Darling is proposing to use only one door for delivery truck entry. Darling will only open the second door when equipment maintenance is required. With both main doors open, however, the building will not be under negative pressure. The following conditions will be placed on the draft Authority to Construct for unit C-406-1 to ensure that the process minimizes its nuisance potential:

- The processing facility shall be kept under negative pressure at all times when in operation. No nuisance shall be allowed. [District Rule 4102]
- The main processing building doors, meal building doors, and meal load out doors shall remain closed except during actual entry or exit of trucks and/or personnel or in case of emergency. [District Rule 4102]
- Permittee shall make available to District inspection staff an operational and portable anemometer with which to verify that the main processing building is under negative

pressure during periods of plant operation. The anemometer shall be calibrated per the manufacturer's recommendations. Records of anemometer calibrations shall be kept, maintained, and made available for District inspection upon request. Records of anemometer calibrations shall be retained for at least five years. [District Rule 4102] N

With the use of the two room air scrubbers, an improved oxidant, and the building kept under constant negative pressure, it is expected that fugitive emissions are minimized as long as all processes are confined to the main building.

2. Nuisance Emissions from Raw Material Handling

Unloading Under Negative Pressure
Raw material entering the facility will only be unloaded in the controlled main building under negative pressure. This will help to minimize foul odors that may arise from raw material dumping since they will be controlled by the room air scrubbers. Further, no raw material is allowed to be stored outside. All material piles will be stored under controlled conditions. The following condition will be placed on the draft Authority to Construct:

- Trucks shall only be unloaded inside of the main processing building under negative pressure to ensure any nuisance odors are controlled by the scrubbers. [District Rule 4102] N
- Delivery trucks shall be unloaded within 2 hours of entering the property. [District Rule 4102]
- No outside storage of raw material is allowed. Trucks waiting their turn to unload within the 2 hour unload time limitation are not considered outside storage. [District Rule 4102]

Surge Bin
Raw material piles that are waiting to be processed continue to decompose. When a raw material pile is not disturbed, a crust or film forms on the exposed surface areas of the pile, which in effect lessens the intensity of perceived odors. When a pile is moved, new uncrusted surface areas of raw material are exposed to the atmosphere, generating more nuisance emissions.

To further ensure that raw material piles are disturbed as little as possible, Darling is proposing to reline the receiving pit, and install a 27,000 lb surge bin that feeds into the process. By grinding the raw material and then placing it into a surge bin, the volume of the raw material is decreased, and staging area requirements will be reduced. With a decreased volume, more material may be placed into a smaller space. Further, the surge bin will allow a smooth and continuous feed of raw material that minimizes surface area exposure because of the reduced need for material handling and pile disturbance.

Minimized Trackout
Darling stages raw material on the floor of the facility. Since the raw material is dumped onto the floor, truck tires may potentially run over the raw material and it can become embedded in the truck tire's treads (referred to as trackout). Further, the container portion of the truck that held the raw material will have raw material residue which may present a nuisance problem. Proper truck washing before exiting the main processing building is critical to preventing trackout problems. The following conditions will be placed on the Authority to Construct:

- All trucks delivering raw material shall be washed clean of raw material and raw material residue prior to exiting the controlled process building to minimize nuisance emissions. Truck tires shall be especially washed such that no trackout of raw material occurs. No washing of trucks to remove raw material and raw material residue shall be performed outside. [District Rule 4102]

- Hot water under pressure and detergent shall be used for washing. No raw material or odor-causing residue shall remain in trailers after washing. All wash down water and residue shall be confined and directed to the appropriate sewage disposal system. [District Rule 4102]

- The unloading area shall be washed as necessary to prevent any trackout of odor-causing materials. [District Rule 4102

- All raw material trucks shall be maintained in condition to prevent leakage of any solid or liquid material. [District Rule 4102]

3. Nuisance Emissions from Cooking (Dehydrating)

Uniform Raw Material Sizing
The new grinder that is proposed will better prepare the raw material for the cooking process. With the current grinder, raw material sizing is varied, and some raw material pieces are relatively large. With larger pieces, higher heats are required to thoroughly cook the inside of a particle for a given time interval, at the expense of scorching the outside. This scorching of raw material pieces can contribute to the nuisance odors that are emitted from the cooking process.

With uniform material sizing that is afforded by the new grinder, heat can be applied more evenly. Even heating eliminates the scorching effect, and thusly reduces the nuisance odors that would otherwise be emitted.

12,000 CFM Venturi Scrubber
The proposed venturi scrubber will be placed in line with the cooker exhaust, before venting to the thermal oxidizer. The venturi scrubber will help to ensure that any condensible gases that may have escaped the condenser assembly are treated before being handled by the thermal oxidizer. This extra step in emissions control adds to the overall nuisance abatement ability of the odor control system by adding an additional control efficiency.

Thermal Oxidizer Fan Replacement
The thermal oxidizer that is used to incinerate vapors from the process will be upgraded by replacing the existing blower fan with one of a larger capacity. This will allow better vapor collection and thusly improved operation of the thermal oxidizer.

4. Potential Nuisance Emissions from Previously Unpermitted Equipment

Crax Receiving Operation
Crax (or unpressed and unground MBM) by itself does not have an odor; rather dust that is generated from these materials must actually enter the nose in order to trigger an olfactory response. Crax has a relatively high fat content, therefore dust emissions from dumping and conveying are expected to be minimal. The crax receiving operation is not expected to

constitute a nuisance since no dust is expected to be generated from it. Further, since the material has been cooked, this significantly reduces the rate of decomposition that occurs.

Darling does not propose a loadout increase due to the crax receiving area. The facility states that the received crax will be considered a part of the facility's throughput. The crax receiving operation will be listed in the equipment description under permit unit C-406-4.

Tallow and Yellow Grease Tanks
Tallow and yellow grease from the process is stored in six holding tanks. The District considers these tanks a part of the finished product storage area, and will include them in permit unit #4. Emissions from these tanks are expected to be insignificant, and should not present a nuisance as long as they are kept in good operating condition. The following condition will be placed on the Authority to Construct:

- 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]

Wastewater System
Darling operates a wastewater treatment system to treat wash water before it is discharged into the municipal sewer system. It should be noted that water from the condensers is not pretreated, and is sent to the municipal sewer system directly from the process. This water does not have any solids in it, therefore it does not require any pretreatment.

As described in the Process Description, Section IV, wastewater is currently skimmed before being sent to a dissolved air flotation (DAF) system, where any remaining bits of solid material are collected. Two flow equalization tanks used to control the flow of water to the DAF have been noted by the District to have overflown in the past. The untreated wastewater that overflows from these equalization tanks can flow into the facility's parking lot and present a considerable nuisance problem. Darling has stated that when these tanks overflow, it is an upset condition.

Darling proposes to prevent future upset conditions with upgrades to the wastewater system. A larger mechanical skimmer will be installed to more efficiently handle surges in throughput of wastewater, a Micro Air system that produces finer bubbles will be installed, and a new DAF is also proposed.

The flow equalization tanks will be equipped with level control devices to prevent future overfilling. Currently, there are no flow control devices for these tanks, and if overfilled, wastewater will come out of the top via an inspection door that is held in place by gravity. In Darling's planned upgrade, flow control devices will be installed so that these tanks do not overflow. In conjunction with the improved overall wastewater system, these flow control devices should prevent future upset conditions.

The following condition will be placed on the ATC for permit unit 1:

- The wastewater system shall be operated and maintained such that it does not cause a public nuisance. [District Rule 4102]

5. Public Notice Requirement and Environmental Justice Impacts

Darling's Fresno facility is located in an area of depressed economic growth, which is inhabited mainly by ethnic minorities. Although the proposed modifications are not anticipated to adversely affect the air quality, Darling International is a high-profile facility situated near several neighborhoods that would be subject to Environmental Justice. In order to properly address Environmental Justice and the possible concern of the local residents, the District will require that this project be subject to a 30-day public notice in order to ensure the residents of this area are able to participate in the regulatory process.

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Fair treatment means that no group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

It is the District's intent to further satisfy all four of the above criteria for meaningful involvement through a 30-day public noticing. Letters summarizing Darling's proposal and the District's findings will be mailed to the residents around this facility. The District will make available a copy of the application, engineering evaluation, draft ATCs, and all other pertinent information for the public's inspection. Only after all comments have been addressed by the District will the ATCs be issued.

California Health & Safety Code 41700 (Health Risk Assessment)

Although a nuisance condition is expected and is being minimized, as discussed above and in Section VII.C.2, there are no increases in health risks anticipated with this project. Therefore an HRA is not required.

Rule 4104 Reduction of Animal Matter

This rule applies to any source that reduces animal matter. This rule requires that any equipment used to reduce animal matter (such as cookers) be controlled by incinerating all effluent gases at a temperature of at least 1200 degrees F for at least 0.3 seconds. Darling currently operates a thermal oxidizer that meets these rule requirements, and will continue to do so with the proposed modifications. The rule also requires that equipment be installed so that proper operating temperatures, pressures, and other operating conditions may be monitored. Continued compliance with this rule is expected, and the following condition will be placed on the draft Authority to Construct (taken from the current PTO):

All non-condensible emissions and vapors shall be incinerated in the thermal oxidizer at a minimum temperature of 1200 degrees F and a minimum retention time of 0.5 seconds. Incineration temperature shall be monitored by a continuously recording temperature device. [District Rules 4104 and 4102]

Thermocouple installed at the rear of the thermal oxidizer shall provide accurate temperature readings of flue gas. An audible alarm shall be installed to alert facility personnel to low temperature readings. [District Rules 4104 and 4102]

Rule 4201 Particulate Matter Concentration

Section 3.1 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.

The only sources of significant PM10 emissions is from the thermal oxidizer exhaust and the MBM loadout system. As discussed previously, the raw material unloading and handling area is not expected to emit particulate matter because of the wet characteristics of the raw material.

MBM Loadout

The MBM loadout system is controlled by the 75,000 cfm room air scrubber, as it is enclosed inside of the main processing building. Daily emissions of PM10 from the loadout system is calculated to be 0.7 lb PM10/day (see Section VII.C.2). The grain loading may be calculated thusly:

Assumptions: 7000 gr/lb
50% of total PM is PM10

0.7 lb PM10/day x 2 lb PM/lb PM10 x 7000 gr/lb = 9800 grain/day ÷ 1440 min/day = 6.8 gr/min

6.8 gr/min ÷ 75000 ft^3/min = 9.07E-5 gr/dscf << 0.1 gr/dscf

Compliance with this rule is expected for the MBM loadout system.

Thermal Oxidizer

The thermal oxidizer emits 1.0 lb/day of PM10 as calculated in Section VII.C.2. The grain loading of the thermal oxidizer may be calculated:

Assumptions: thermal oxidizer is fired only on natural gas
thermal oxidizer rating is 18.0 MMBtu/hr
F-factor for natural gas is 8710 ft^3/MMBtu
$[O_2]$ of 3% in exhaust stream
7000 gr/lb
50% of total PM is PM10

Grain emission rate is calculated:

1.0 lb PM10/day x 2 lb PM/lb PM10 x 7000 gr/lb = 14000 grain/day ÷ 1440 min/day = 9.7 gr/min

Exhaust flow is calculated:

18.0 MMBtu/hr x 8710 ft^3/MMBtu x (20.9 ÷ 20.9 – 3) = 183,056 dscf/hr ÷ 60 min/hr = 3051 dscfm

Grain loading is thusly calculated:

9.7 gr/min ÷ 3051 dscfm = 3.2E-3 gr/dscf << 0.1 gr/dscf

Compliance with this rule is expected for the thermal oxidizer.

Rule 4301 Fuel Burning Equipment

This rule applies to equipment that burns fuel for use by indirect heat transfer. The raw material handling area and the MBM loadout system require no fuel usage. The thermal oxidizer that incinerates noncondensible emissions is considered a control device. It is therefore concluded that this rule does not apply to this project.

Rule 4801 Sulfur Compounds

District Rule 4801 prohibits the discharge into the atmosphere of any sulfur-bearing pollutant in excess of 2000 ppmv or 0.2%.

The only point of emission with sulfur-bearing compounds in this project is the thermal oxidizer's exhaust. Daily emissions of SOx are 0.2 lb/day or 90.8 grams/day.

Using the molecular weight of SO_2 as 64 g/mol, we can calculate the number of moles of sulfur: 90.8 g ÷ 64 g/mol = 1.4 moles

Using the ideal gas equation, we can calculate the volume of SO_2 that is emitted:

PV = nRT, or V = (nRT) ÷ P

Where: V = volume of SO_2
n = moles of SO_2
R = constant of $\frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$
T = 520 degrees R
P = 14.7 psi

V = (1.4 (10.73) (520)) ÷ 14.7 = 531 ft^3/lb or 1.3 E-2 mol/ft^3

Since 1 ft^3 is equal to 28.3 liters, we can then find ppmv since ppmv = mg/L

1.3 E-2 mole SO_2 x (64 g/mol SO_2) x 1000 mg/g = 845 mg SO_2

845 mg ÷ 28.3 liters = 30 ppmv << 2000 ppmv

As shown above, compliance with this rule is expected.

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.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful public noticing period, issue Authorities to Construct C-406-1-2, 2-2, and 4-2 subject to the permit conditions on the attached draft Authority to Construct in Appendix E.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-406-1-2	3020-01-E	225 electrical HP	352
C-406-2-2	3020-02-H	18,000 kBtu	882
C-406-4-2	3020-03-E	259,948 gallons	210

Appendices are available at the District Central Office upon request.

A: ATCs C-406-4-1 and –4-3
B: Manufacturer's Cooker Guarantee and Current Throughput Calculations
C: Scrubber Packing Material Data
D: Current Permits to Operate
E: ORP Fact Sheet
F: BACT Guideline 8.3.2
G: Process Diagram
H: Draft ATCs