

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N054755300

FACILITY: Darling Ingredients Inc.		SRN / ID: N0547
LOCATION: 5900 OLD ALLEGAN RD, HAMILTON		DISTRICT: Kalamazoo
CITY: HAMILTON		COUNTY: ALLEGAN
CONTACT: Ryan Koewler , Plant Manager		ACTIVITY DATE: 08/19/2020
STAFF: Cody Yazzie	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

This inspection was conducted in two separate portions to best accommodate for social distancing guidelines that are set by the operating facility and the State of Michigan in response to the COVID-19 virus pandemic. The first portion consist of the records review that are associated with any Permit to Install that may have active currently along with any permit exempt equipment that may require recordkeeping. The second part of the inspection would include the on-site visit in which staff could observe the emission units on a typical operation day.

Darling Ingredients (hereafter Darling) is a stationary source that renders Animal by-products (red meat and poultry feathers). The rendering process consists of two (2) animal by-product cookers and four (4) small batch feather dryers. Darling was last inspected by the AQD on September 3, 2008.

Records Review Conducted (June 25, 2020):

On April 24, 2020 Air Quality Division (AQD) staff (Cody Yazzie) sent an email to Jon Elrod, Darling, Manager of Environmental Affairs, requesting recordkeeping associated with PTI No. 324-05 and PTI No. 208-95C. Mr. Elrod promptly sent over the requested records for staff's review. Staff's summary of the review is included below.

PTI No 324-05 EUBOILERS:

The facility has two boilers that have the ability to be fired by natural gas, propane, or yellow grease (biofuel). This PTI is an old permit that have little Special Conditions associated with it.

There is a NOx hourly emission limit which is set at 8.13 lbs/hour. The Department may require the facility to conduct a performance test to see if the facility is in compliance with the hourly NOx limit. It appears that the Department has never requested a performance test.

The only Recordkeeping requirement is required by Special Condition 1.4 in which the facility must maintain records of the type and amounts of fuels combusted in EUBOILERS. The Fuel usage data is required to be compiled on a calendar month basis. Staff requested fuel usage records for the period of June 2019 through May 2020. The facility is maintaining total fuel usage for both boilers on a monthly basis for all three fuel types. During that time period the facility did not use any yellow grease. Propane was only used during December 2019 in which the facility used 720 gallons. Natural gas was used in every month during that period and the facility averaged around 25,000 MCF of natural gas and had a high during the month of January 2020 in which the facility used 29,105 MCF of natural gas.

PTI No 208-95C EURENDERING:

This PTI covers the processing equipment associated with the Animal by-products (red meat and poultry feathers) rendering process consisting of two (2) animal by-product cookers and four (4) small batch feather dryers. Emissions and odors from the process are controlled by a venturi scrubber, a packed tower scrubber, and two room air scrubbers. Odors from the process are controlled using the following odor control chemistries: elevated pH control chemistry, ionic exchange chemistry, and oxidation chemistry. This PTI recently went through New Source Review in order to allow for different scrubber chemistries. PTI No. 208-95C was approved on May 28, 2020.

In October 2019 PTI No. 208-95B was approved that restructured the way the facility was required to monitor the amount of poultry feathers processed. This change required the facility to maintain records of the amount of poultry feathers processed on a calendar month basis. This change moved forward into PTI No 208-95C which is the currently active permit. Since October 2019 the highest monthly amount of poultry feathers processed at the facility occurred in October 2019 in which the facility processed 1,669,320 pounds of poultry feathers. This is well below the monthly limit of 12,276,000 pounds limit specified in Special Condition II.1.

Special Condition III.6-8 are a set of operational restrictions which specify when the facility shall direct emissions through the through the scrubbers located at the plant. These operational restrictions require the facility to direct emissions through the scrubbers whenever the outdoor ambient temperature is above 50 degrees Fahrenheit. Special Condition VI.4 requires to the facility to monitor and record the predicted daily high outdoor ambient temperature on a daily basis, the ambient temperature on an hourly basis when the predicted outdoor ambient temperature exceeds 40 degrees Fahrenheit, and daily records indicating the date and time the air room scrubbers were turned on or off. Staff requested several random dates dating back to October 14, 2019. In these records provided the facility always operated the Room Air Scrubber when outdoor ambient temperature is above 50 degrees Fahrenheit for either the Feather or Red Meat Operations are in conducting processing. The facility also showed in the records that they often operate the scrubbers even below the required 50 degrees Fahrenheit. Based on records submitted the facility appears to be in compliance with Special Condition VI.4.

Darling used KMIHOLLA40 as the weather station to collect the weather data used in the records. This weather station was approved as the monitor in an email request on October 14, 2019. The email also discussed that KMIHAMIL2 could be used as a back up monitor in the event that the primary monitor was not available. The primary and secondary monitors given approval were based on input from an AQD meteorologist factoring which weather station locations would provide the most representative data.

The facility was required to submit a malfunction abatement plan (MAP) for the venturi scrubber, packed tower scrubber, and the room air scrubbers which includes operating parameters for all of the permitted scrubber chemistries and the locations where operating parameters will be monitored for each odor control chemistry employed. The Kalamazoo District Office received the most recent MAP on July 7, 2020. The MAP outlines the typical operating ranges for the Differential Pressure for each scrubber as a minimum of 1 inch of water. The typical operating ranges for the Oxidation Control Chemistry (Chlorine Dioxide) as being a minimum of 200 mV. The other scrubber chemistries typical operating ranges are included in the MAP along with the locations of where they are to be measured. The MAP also includes the typical operating ranges of the temperature of the Venturi Scrubber water. The maximum temperature of the Venturi Scrubber water as mentioned in the MAP is 120 degrees Fahrenheit. Staff requested records of the Scrubbers for several random dates to review. Darling provided daily records for each month starting in October 2019. Records showed that Venturi Scrubber and Recycled ORP solution were within their typical operating ranges for most dates except for a stretch from May 1, 2020 through May 9, 2020. It is noted that there was no production on May 3, 2020. For this range of time the ORP readings were reading negative values. The facility stated that this was due to a faulty solenoid and actuator valve. Darling also indicated that repair was delayed due to faulty replacement parts and the time it took to order more parts.

Special Condition III.1 requires the facility to implement and maintain a nuisance minimization plan for odors for rendering operations. The nuisance minimization plan submitted as a part of the MAP. This nuisance minimization plan requires the facility to visit the area of the complainant, analysis of odor control and process equipment operating parameters, analysis of the ambient weather information, and an aerial review of possible other contributing sources to the odor. It is also required that the facility provide a written summary of the odor investigation results to the MDEGLE District Supervisor within 30 days of receiving the complaint.

Special Condition VII.1 is a reporting condition in which it requires Darling to send in writing a notification of completion that the commencement of trial operation of any permitted odor control chemistry other than chlorine dioxide. The facility was only using chlorine Dioxide (ORP) as a scrubber chemistry at the time of the inspection. Mr. Koewler indicated that due to COVID-19 the facility has not been able to implement the other scrubber chemistries. Once the facility has completed trial operations the special condition requires that the facility send notification within 30 days.

Onsite Inspection Summary Conducted (August 19, 2020):

On August 19, 2020 AQD staff arrived at 5900 Old Allegan Road Hamilton, Michigan at 10:00 AM to conduct an

announced air quality inspection of Darling Ingredients. Staff made initial contact with the office receptionist and signed in at the facility and stated the purpose of the visit. Ryan Koewler, Darling, Plant Manager, was the Darling facility contact that escorted Staff around the site during the onsite inspection.

PTI No 324-05 EUBOILERS:

During the inspection the boilers were in operation and staff did observe the units. During the inspection Staff checked the nameplates of each boiler and recorded the following data.

Boiler1

Boiler Make: Johnson and Johns
Fuel Heat Capacity: 33,480,000 BTU/hour
Unit Number: 9024-01
Date of Inspection Cert: 8/10/20

Boiler2

Boiler Make: Johnson and Johns
Fuel Heat Capacity: 33,480,000 BTU/hour
Unit Number: 9024-02
Date of Inspection Cert: 8/3/20

Staff asked Mr. Koewler if the facility did any routine maintenance on the boilers in which he indicated they did. Staff was shown daily inspection/safety checks that the facility does on each boiler.

Staff asked if the facility had any plans to operate the boilers using the yellow grease. Mr. Koewler indicated that unless the prices of fuel changed drastically that Darling would continue to primarily use natural gas and occasionally propane. Mr. Koewler did indicate to Staff that the facility still does have the screening equipment that is required to remove excess water and solids in the yellow grease.

PTI No 208-95C EURENDERING:

During the inspection staff inquired information on how the feather cookers were brought online and operated. Staff was told that there are 4 batch cookers located at the site and no more than one cooker is brought online at a time. It takes about 1.5 hours to load and unload a cooker, so these batches are staggered to appear to comply with Special Conditions III.2-3.

During the inspection Staff did observe and collect process data for the Scrubber ORP solution and the differential pressure across the scrubbers. Staff noted the Feather Room Scrubber as 392 mV which is above the minimum 200 mV specified in the MAP. The differential pressure for the scrubber was roughly 1 inch of water.

Special Condition I.1 limits Darling to no visible emissions at the facility from EURENDERING. During the inspection staff did not observe any visible emissions for any of the stacks at the facility. The Boilers were in operation and did have some steam coming out of the stacks.

Special Condition III.4 requires that the facility maintain a negative pressure differential between the outdoor atmosphere in the raw material loading area and process areas whenever the outside ambient temperature exceeds 50 degrees Fahrenheit. During the inspection the facility appeared to maintain negative pressure in the process areas since the doors required to enter these areas were difficult to open from negative pressure. Special Condition V.1 is a testing condition that requires the facility to verify the negative pressure of the natural draft openings within 270 days after commenting trial operations of any permitted odor control chemistry other than chlorine dioxide in EURENDERING. Once the facility completes the initial testing, they will be required to conduct the test annually.

Odor Complaints:

The Kalamazoo District Office has only received two separate odor complaints in the past two years. These occurred on September 3, 2019 and September 17, 2019. During the AQD investigations for both dates AQD Staff could not detect an odor or needed additional complaints to verify the odor. For both of these complaints Darling submitted odor complaint investigation as required by their nuisance odor minimization plan.

During the inspection Staff asked Mr. Koewler if the facility had obtained any recent odor complaints. Mr. Koewler stated that the facility did receive a complaint August 17, 2020. Darling submitted a review of their odor

investigation on September 3, 2020 to the Kalamazoo District Office. In the review Darling stated that they did detect an odor which had characteristics of a finished meal odor from the rendering operations. Darling states in the review that they confirmed usual good housekeeping practices were active and in place during the detection period. Darling also indicated that they closely reviewed all odor control equipment and identified that the sodium chlorite chemical for chlorine dioxide generation was not appropriately being dosed at the time of the verified public odor complaint and believed it to be the contributing factor to the odors. Darling indicated that they took immediate actions to remedy the issue and correct the sodium chlorite dosing for the makeup of the chlorine dioxide chemistry deployed in the facility's air scrubber equipment.

The Kalamazoo District Office have not received any odor complaints since this date. The facility appears to have resolved the odor issue associated with this complaint.

After the conclusion of the onsite inspection Staff did drive around the facility to the West, North, and East to see if an odor could be detected. During the time spent trying to observe an odor while the facility was in operation Staff did not detect an odor.

At the time of the inspection and based on a review of records obtained during or following the inspection, the facility appears to be in compliance with PTI No 208-95C and PTI No 324-05. Staff stated to Mr. Koewler that a report of the inspection would be sent to the facility for their records. Staff concluded the onsite inspection at 11:00 AM.-CJY

NAME Cathy Guyzic

DATE 9/23/20

SUPERVISOR RIL 9/23/20