

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

N084940488

FACILITY: Leprino Foods		SRN / ID: N0849
LOCATION: 311 N SHERIDAN RD, REMUS		DISTRICT: Grand Rapids
CITY: REMUS		COUNTY: MECOSTA
CONTACT: David Merriam , Plant Manager		ACTIVITY DATE: 06/23/2017
STAFF: Tyler Salamasick	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Minor source inspection Fiscal Year 2017		
RESOLVED COMPLAINTS:		

Background

Leprino Foods (Leprino) SRN: N0849 is a cheese manufacturing facility located at 311 N Sheridan Road, Remus, Michigan 49340. Leprino is located in a residential area with the nearest residential structure approximately 20 feet south of the facility. The facility was inspected on 6/23/2017 by Tyler Salamasick, Environmental Quality Analyst of the Michigan Department of Environmental Quality, Air Quality Division. The intent of the inspection was to determine the facility's compliance with the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules and PTI No.502-84. The facility's permit is for two natural gas and oil fired Johnson boilers. The facility is a minor source for all criteria pollutants. Leprino was previously permitted for a fabric filter bag house. The baghouse permit (PTI 256-95) was voided on 3/9/2011.

Inspection

Site arrival was at 10:30 am on the morning of 6/23/17. Upon meeting I presented my State of Michigan identification card, informed the facility representative of the intent of my inspection and was permitted onto the site. Plant Manager, David Merriam showed me the facility. Mark Lilly and Dennis Turgeon also accompanied us during my inspection. Leprino Foods is the world's largest producer of mozzarella cheese. The Remus facility is one of nine facilities operated by Leprino Foods. Leprino has another facility in the Grand Rapids district, located in Allendale MI. The Remus facility produces both mozzarella string cheese, sweet cream and condensed whey. Leprino packages the finished product in bulk and does not individually wrap the product on site.

David first took me through the decontamination room. This room is a multistage wash room. The room functions as a divider between the outside and inside of the operational area. The cleaning area did not appear to be an air quality concern.

After decontamination David showed me the process from raw material to finished product. We waited to see the first step of the process, milk unloading, until the end of the inspection to prevent cross contamination.

The facility was being cleaned at the time of my inspection. The cleaning process utilized three main washes with a hot water rinse after each solution. The area would be sprayed and scrubbed with a nitric acid solution (SDS is included), a caustic solution, and a bleach solution. This process did not vent outside, but did require the use of the facilities two boilers. The boilers are permitted (PTI No. 502-84) and will be discussed in a later section.

Process overview

The first stage of the process is the unloading of the milk. After the milk is brought in, it is pasteurized in the pasteurization room. This process requires heat input from the boilers, but did not appear to vent to the outside air. Once pasteurized, the milk is pumped into a heated tank and enzymes are introduced. The tank is jacketed and the boilers are used to heat the outside of the tank. After a set period of time, the cheese curds separate from the milk leaving whey left in solution. This curd is piped

to a mixer and the whey is sent for additional processing. The facility has two mixers and two extruders. The curds are mixed and extruded into long continuous strings. The string diameter can be adjusted per the requirements of the customer.

Once the strings are sized they are guided along a conveyor into a chilled brine wash. The brine wash is a cooled salt solution. Anhydrous ammonia is used to cool both the brine solution and to generate the freezer temperatures required for the storage section of the facility. The anhydrous ammonia storage will be discussed in a later section.

After the cheese is cooled with brine, it continues on to the cutting section. The cutting section is a series of blades that section the cheese into various lengths. This process does not ventilate to the outside air and does not appear to generate any particulate matter.

The sectioned cheese is then flash frozen and packaged in bulk. The bulk product is weighed and sent into temporary storage. The storage area is approximately -10 degrees Fahrenheit. The whey is processed in a separate area of the facility. At this stage the whey is isolated from the liquid that was removed during the initial curd separation process. Fat is separated from the liquid after whey is pasteurized. The fat that is removed is pasteurized again and stored as a sweet cream. With the fat removed the whey liquid is distilled and concentrated. The water is evaporated off and the concentrated liquid is cooled and crystalized. Leprino is able to adjust the whey crystal size by adjusting the cooling rate of the liquid. Once the whey is crystalized the product is complete.

After inspecting the processes we went to the utility room and inspected the permitted boiler. The two boilers are both 500 Hp natural gas fired Johnson boilers. The original name plates were still visible on the boilers. The permit requires that the facility not have emissions from the boiler stacks that exceed 20% opacity. When I initially arrived on site I did not observe any opacity from the stacks. The facility was operating one boiler at the time I made my observations. This appears to comply with SC.10 of PTI No. 502-84. Leprino is required by SC.11 to have stack dimensions with a height of 50' from the ground level and diameter of 22". David had the stack measured after my inspection and the stack design appears to meet the requirements of this condition. The final special condition of the permit requires that the facility only fire natural gas. I did not observe connections or storage capabilities on site that would allow for the use of oil in the boilers. They informed me that the boilers only used natural gas. This appears to comply with SC.12 of the permit. In addition to the permit, the boiler inspection was up to date, and the boiler was tuned yearly. The tuning increases the efficiency of the boiler, and reduces both gas usage and emissions. The boilers were estimated to have been installed between May and December of 1984. The boilers do not appear to have applicable requirements pursuant to NSPS Dc due to their installation prior to 1989 and their low output. Leprino is not a major source for criteria pollutants and does not appear to be subject to the NESHAP Subpart DDDDD.

Once I was done inspecting the clean area of the facility Dave took me to inspect the outside areas. The facility utilizes anhydrous ammonia as a refrigerant. The facility currently has an anhydrous ammonia tank with a maximum storage capacity of 34,679 lbs (this is at "full vessel" or 80% load). This equates to approximately 6700 gallons of anhydrous ammonia. At the time of my inspection Laprino had 27,332.789 lbs in the system (~ 5300 gallons). The MDEQ exemption for these storage tanks states...

...Rule 280. (1) This rule does not apply if prohibited by R 336.1278 and unless the requirements of R 336.1278a have been met. (2) The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the following: (a) Cold storage refrigeration equipment and storage of the refrigerant, including cold storage equipment using anhydrous ammonia that has storage capacity of less than 500 gallons.

Leprino's anhydrous ammonia storage tank does not meet the 500 gallon storage limit of the exemption and therefore cannot meet the exemption. Leprino does not have a permit for this process and is in violation of Rule 201. David Merriam has been very responsive to this issue and is in the

process of applying for a permit. The MDEQ AQD will use regulatory discretion and not issue a violation notice due to the prompt response of the facility. I checked the facility's tank set back from both the property line as well as the nearest residential structures after my inspection on Google Earth. The facility does not appear to be able to meet the setback of 300 ft from a residential structure as described in the general permit to install. The facility will likely have to apply for a site specific permit with special restrictions to address the shortcoming of the tank placement.

After inspecting the tank we went on the roof to inspect the stacks. I did not observe any fallout that could have been associated with the handling of the dry whey product or other processes at the facility. I asked David if the facility uses chrome compounds in the cooling tower. He provided me with a SDS for the compounds used and no hexavalent chrome was present. Chrome compounds had formerly been used as a scaling and corrosion inhibitor in conjunction with sulfuric acid but the practice of using these chemicals has been greatly reduced over the past several years due to toxicity concerns.

Conclusion

It appears that Leprino is not in compliance with Rule 201. The facility is already in the process of applying for a permit for its anhydrous ammonia storage tank. The process will likely require a site specific permit as compared to a general permit. Leprino appears to be in compliance with all other Michigan Air Pollution Control Rules, as well as PTI No.502-84 and the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended.

NAME



DATE

7/13/17

SUPERVISOR

