DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N569660802

FACILITY: ARMADA RUBBER MANUFACTURING CO		**SRN / ID:** N5696
LOCATION: 24586 ARMADA RIDGE RD, ARMADA		**DISTRICT:** Warren
CITY: ARMADA		**COUNTY:** MACOMB
CONTACT: Craig Tobey , Operationss/Environmental Manager		**ACTIVITY DATE:** 11/05/2021
STAFF: Sebastian Kallumkal	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Annual Targeted Inspection to verify compliance with PTI No. 242-03A.		
RESOLVED COMPLAINTS:		

On October 26th, I, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff Sebastian Kallumkal requested monitoring and material usage records from Armada Rubber Manufacturing Co., (SRN: N5696) located on 24586 Armada Ridge Rd., Armada Twp., Michigan. Due to the pandemic, the records are requested prior to the inspection to limit the time spend at the facility. Received usage records for Compound #14 and #15 on Thursday, October 28th. The baghouse monitoring records are too large to email, so decided to get electronic copy during inspection.

Facility submitted usage data from December 2009. Individual permit limit for each Compound #14 and #15 is 220,000 pounds per year based on a 12-month rolling time period at determined at the end of each calendar month. Facility is keeping records of each component of Compound #14 and #15 on a monthly basis. The 12-month rolling usage for Compound #14 as of September 2021 was 33,566 pounds and for Compound #15 was 0.0 pounds. Facility has not used Compound #15 since January 2020.

On November 5th, 2021, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff Sebastian Kallumkal conducted a scheduled annual inspection at Armada Rubber Manufacturing Co., located on 24586 Armada Ridge Rd., Armada Twp., Michigan. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air quality Division (MEGLE-AQD) Administrative Rules; and Permit-to-Install No. 242-03A. The inspection was announced previously due to the Covid 19 pandemic protocol.

I arrived at the site around 11:15 AM and met Craig Tobey, Operations/Environmental Manager at the facility. I introduced myself, provided credentials and stated the purpose of the inspection. During the pre-inspection meeting, we discussed facility's operations and applicability of 40 CFR 63, Subpart VVVVVV-National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources. Chemical manufacturing MACT-area sources that use as feedstock, generate as byproduct, or produce as product, any of the hazardous air pollutants (HAP) are specified in the subpart. Chemical Manufacturing Process unit (CMPU) also includes processes associated with the production of NAICS code 325 materials. This facility's NAICS code is 325.

We discussed how to verify whether the source is subject to this subpart and how to comply with it if subject. Craig told me the facility does not produce synthetic rubber, instead, it uses different types of synthetic rubber products (EPDM, SVR, nitrile), and/or natural rubber products to form rubber parts for the automotive or other industries. I advised him to verify applicability and compliance with the requirements of 40 CFR Part 63, Subpart VVVVVV.

Armada Rubber Manufacturing Company compounds and manufactures rubber parts such as door bushes, bumpers, grommets, washers, sleeves, etc. used in automobiles and appliances using natural or synthetic rubber products and other ingredients such as oils, chemical additives, fillers, extenders, cross links (sulfur, peroxide), etc. The facility uses many formulations and manufactures products of different hardness. It receives the rubber ingredients in pails. The process includes:

1. Weighing of ingredients such as chemical additives, oil, raw rubber and/or synthetic rubber polymers, fillers (e.g., Carbon black), etc. according to the formulation recipe. There are two weight stations on site.
2. The weighed materials are sent to a mixing station. The materials are mixed into a slimy chunk.
3. The slimy chunk is conveyed to roll mill (2 roll mills) to make rubber sheets.
4. The rubber sheets are then sent to cooling mill followed by the cutting mill (1 unit).
5. Afterwards, talc powder is applied to the sheets by O-Matic 2000 machine. The powder application will prevent the rubber sheets from sticking to each other.
6. Sheets are placed in injection molding presses (transfer molding) where parts are formed and cured in the mold.
7. The molded and cured rubber parted are deburred in cryogenic deburring machines (2 units) using liquid nitrogen or in cryogenic poly beaded blasting machines (2 units).

Dust generated from the weight stations, the mixer, the cutting mill is controlled by a pulse jet dust collector, which consists of 99 bags. The dust collector is located outside the building. Dust collected from the collector is reused in the process.

The facility has 63 employees, and operates 5 days per week, 2 shifts (8 hrs each). During the pre-inspection meeting, he told me that the facility has one natural gas fired Cummins Brand emergency generator and a cold cleaner parts washer in the maintenance room. He thinks the emergency generator was installed prior to 2005 but agreed to send the details later. On Tuesday, November 9th, I emailed him the cold cleaner procedure and applicable rule.

Next, he accompanied for an inspection of the facility. The materials are received in bales. We visited materials weighing area. They have two down draft weigh stations. The dust from this area is collected in baghouse located outside. At the time of the inspection, employees were weighing materials according to the formulations to be used next day.

Next, we visited the mixing area. The mixer was not operating at that time. Craig had told me earlier that there was not mixing on that day. Mixing only occurs during the first shift. Next, we visited the milling area (2 roll mills). These were also not operating. This is where the slimy chunk is transformed into sheets of various thicknesses. In the cutting machine, the sheets are cut into different sizes. The mixer, mill and cutting stations are also exhausted to the outside baghouse. In the talc area,

talc is added to each sheet to prevent adhesion. The dust from this process is exhausted to a local dust collector vented in the general in-plant area. This process could be exempt from permit to install pursuant to Rule 285(2)(l)(vi).

These sheets are feedstocks for the injection molding presses (transfer molding) where parts are formed and cured in the mold (cure pad). The facility has about 49 molds. These are transfer molding processes. Facility uses the Rule 201 exemption pursuant to Rule 285(2)(l)(vi)(B) for this rubber transfer molding process. They use three types of mold release agents in the molds. The waste liquid materials are hauled offsite by Michigan Petroleum Technologies, Port Huron. Fully cured rubber materials are recycled through American Recycling in Owosso, Michigan. Craig roughly estimated that they use every year about 18 cases (12x10oz in each case) of A353 Endurance Mold Release; 500 gal of Mono-Coat E304 Mold Release; 200 gallons of RR-5 Hot EF-1/G451 Releasomers Mold Release. Next, we visited another molding machine which can mold rubber strips into desired parts. Later Craig provided the mold release usage data.

2019

E-304 – 1,120 lbs.

RR5 Hot – 2,594 lbs.

Endurance – 211 lbs.

2020

E-304 – 817 lbs.

RR5 Hot – 3,051 lbs.

Endurance – 229 lbs.

RR-5 Hot EF-1/G451 Releasomers Mold Release, Usage = 3051 pounds; From SDS-No carcinogens; listed compounds have IRSL more than 2.0 ug/m3.

Density = 0.88 x 8.34 = 7.34 lb/gal; VOC = 80-100 % = 7.34 lb/gal; VOC Emissions = 3051 lb/year

Mono-Coat E304 Mold Release; Usage = 1120 pounds; From SDS- Carcinogenicity- No known significant effects or critical hazards; listed compounds have IRSL more than 2.0 ug/m3.

Density = 0.79 x 8.34 = 6.6 lb/gal; VOC = 100% (based on volatility; no VOC% data specified in SDS) = 6.6 lb/gal; VOC Emissions = 1120 lb/year

A353 Endurance Mold Release; Usage = 229 pounds

Density = 0.7 x 8.34 = 5.84 lb/gal; VOC = 100% = 5.84 lb/gal; VOC Emissions = 229 pounds lb/year; From SDS- Carcinogenicity- No known significant effects or critical hazards; listed compounds have IRSL more than 2.0 ug/m3.

The process (use of mold release agents) appears to be exempt from permit to install requirements pursuant to R336.1290(2)(i) which, in part, required the emission unit or

process to have less than 1000 lb VOC emissions per month; and only emit non-carcinogenic VOCs. Facility needs to evaluate the exemption status based on the usage and chemicals used.

Next, we visited the two cryogenic deburring machines. The dust and N2 fumes are exhausted through an internally vented dust collector.

In this area, facility has an injection transfer molding process equipment which forms parts that can not be formed in the other molding machines.

The facility also has a glass bead blaster to clean the molds and cure pads. The dust from this process exhausted through an internally vented dust collector.

While walking along the production area, I smelled for a short time an odor (primary amine, fish type odor) which was similar to what I smelled outside the facility during the odor complaint investigation on December 15, 2020. I inquired about this to Craig and John (chemist). We all went back to the area; I could not smell it anymore. John told me that it could be from welding tubes.

Next, we visited the baghouse dust collector located outside the building. The dust collector area appeared to be clean. I didn't see any corrosive appearance on the collector; nor did I hear any air infiltration from the control. The control has been equipped with a magnehelic gage as well as an electronic gage to monitor pressure drop continuously. At the time of the inspection, the baghouse was not operating. The magnehelic was reading "0 "WC".

According to Craig, there is an alarm associated with the pressure drop readings. I inquired chemist John Douglas about the function of the alarm. He explained that he will see a visual sign on his monitor when the pressure drop goes low. If that happens, they will shut down the process manually.

The maintenance manager told me that they empty the hopper twice a month. The bags are inspected every year using a bag dye penetrant test. If bags are defective, they are replaced. They are keeping records of baghouse maintenance and the pressure drop readings. The calibration for the pressure drop monitor is conducted annually. The company keeps daily records of the pressure drop and monthly usage of rubber compound`#14 & #15 as required by the permit. From company's record, for the week of November 8 through 12th, the pressure drop of the dust collector was about 4-5" WC. The 12-month rolling time period material usage for compound #14 was 33,566 pounds as of August 2021 and that of Compound #15 was "0.0 pound as of as of August 2021. Compound #15 was last used in January 2020. Facility provided materials usage records, SDS for the components, differential pressure readings and monitor calibration data in a flash drive (attached to the report).

The emergency generator was a natural gas fired, Cummins, 45 KW, (HP=97 gross continuous/120 gross range), installed in 2003. It ran 642.8 hours to date; 19 hours in 2018-2019 and 22 hours in 2019-2020. This generator is used as backup for the office area.

This facility is an area source for hazardous air pollutants (HAP) with potential to emit less than 10 tons per year (TPY) of single HAP and 25 TPY of aggregate HAPs. This reciprocating internal combustion engine (RICE) located at an area source of HAP is considered existing because it was installed in 2003 prior to June 12, 2006.

Facility needs evaluate applicability of National Emission Standards for Hazardous Air Pollutants for RICE (area Source MACT- 40 CFR 63, Subpart ZZZZ) for this RICE.

Craig informed me that this generator is only used as backup power generator for the office building.

From 40 CFR 63. Subpart ZZZZ

40 CFR 63.6586(f)

> **The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).**
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> **(1)…**
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> **(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).**

Commercial emergency stationary RICE **means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.**

After the onsite inspection, from 1:15 to 2:00 PM , I conducted odor observations, on foot, along Armada Ridge Road. First, I walked along Armada Ridge towards Omo Road (East). Then I walked west to 24040 Armada Ridge Road and back to facility's parking lot. I did not observe any objectionable odor along these routes.

Conclusion: Based on the inspection and records review, the facility appears to be in compliance with PTI No. 242-03A requirements and other applicable air quality regulations. Facility needs to evaluate applicability of 40 CFR 63, Subpart VVVVVV-National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources and 40 CFR 63, Subpart ZZZZ-NESHAP for Reciprocating Internal Combustion Engines.

NAME Sebastian Kallenkal DATE 11/22/2021 SUPERVISOR Joyce