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MANILA

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

B473448849

FACILITY: SHRADER TIRE & OIL CO	SRN / ID: B4734
LOCATION: 25445 OUTER DR, MELVINDALE	DISTRICT: Detroit
CITY: MELVINDALE	COUNTY: WAYNE
CONTACT: Bob Watters , General Manager - Manufacturing & MDC Distribution	ACTIVITY DATE: 05/13/2019
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Non Compliance
SUBJECT: Scheduled inspection, FY 2019	SOURCE CLASS: MINOR
RESOLVED COMPLAINTS:	

INSPECTED BY: Jonathan Lamb, EGLE-AQD

PERSONNEL PRESENT: Bob Watters, General Manager; Lawrence Shrader, Safety Director; Mark Meyer, Controller

FACILITY PHONE NUMBER: (800) 589-6589

CONTACT PHONE NUMBER: (419) 466-9066 (Mr. Watters)

CONTACT EMAIL: bob.watters@shrader.biz

FACILITY WEBSITE: shradertireandoil.com

SAFETY REQUIREMENTS: hard-toe boots, safety glasses, safety vest

**FACILITY BACKGROUND:**

Shrader Tire and Oil retreads and repairs used truck tires and distributes various automotive fluids, including oils and diesel exhaust fluid (DEF). The facility also performs rim reconditioning and is a tire wholesaler. The facility has operated at this location since 2006. The tire retread is a franchise of Michelin Retread Technologies which is operated by Shrader Tire and its employees using Michelin's equipment and materials.

Shrader Tire and Oil is headquartered in Toledo, Ohio. Hours of operation are 5:00 AM – 1:30 PM, Monday through Friday, for the tire retread and 7:00 AM – 7:00 PM, Monday through Friday, for fluid distribution. There are roughly 35 employees at this facility; 15 in the retread operation.

**COMPLAINT/COMPLIANCE HISTORY:**

The most recent inspection of the facility was June 20, 2007, which resulted in the issuance of two Violation Notices: a Violation Notice was issued on June 27, 2007, for failing to maintain proper production, emissions, material usage, and material composition records; a second Violation Notice was issued on July 25, 2007, for exceeding the allowable VOC content of the tire cement based on lab analysis. The facility responded to both Violation Notices in letters dated August 8 and September 14, 2007. In the responses, the facility addressed the recordkeeping issues, which sufficiently resolved the June 27, 2007 violation.

However, the facility disputed the July 25, 2007 violation regarding the VOC content of the tire cement and requested a second sample be analyzed for VOC content. A split sample was obtained on September 6, 2007 and sent for analysis. Analysis of the September 6, 2007 sample again demonstrated the VOC content of the tire cement exceeded the permit limit, resulting in the issuance of another Violation Notice on November 9, 2007. In a letter dated December 10, 2007, the facility continued to dispute the results, stating that the sample was improperly mixed. The company purchased an agitator and a third sample was obtained on January 17, 2008. Again, analysis of the VOC content of the sample demonstrated noncompliance with the permit limit, and another Violation Notice was issued on March 4, 2008. On March 13, 2008, the facility agreed via email to obtain a modification to its permit. Permit to Install No. 126-06A was issued on May 20, 2008, to increase the VOC content limit of the tire cement, which resolved the outstanding violations.

There have been no complaints lodged against this facility in the past 10 years.

## **PROCESS DESCRIPTION/EQUIPMENT:**

Worn truck tires are delivered to the facility. Each tire is visually inspected to determine if the tire meets specification to be safely retreaded. Once the tire passes inspection, the tire is loaded into an automated tire buffer, which uses a rasp to grind the tread off the tire using a programmed pattern based on tire size and tread design. The ground rubber tread ("crumb") generated during the process is collected via a vacuum hood and transported through ducts to a trailer outside the building. As the material is conveyed into the trailer, the exhaust goes back out the trailer to a stack. There are also vents on the sides of the trailer. There are filters on the vents and the trailer outlet to the stack.

Once the tread is removed from the casing, the bald tires are inspected with the Casing Integrity Analyzer (CIA), which photographs the tire from the inside to check for any defects or separation in the casing. Further visual inspection and repair is done in the skiving post, repair post, and fill post. The tire is manually checked for sidewall imperfections and cleaned of debris using hand-held grinders. If any exposed metal is observed, a cement is brushed on the area to prevent oxidation. Any cavities in the rubber are filled with raw rubber.

After repairs are made, the tire is ready for retread. The tires are queued based on tire size and type of tread. Each tire is placed on a machine which rotates the tire while applying a soft rubber adhesive (raw uncured rubber) on one end via an extruder while applying a roll of tread on the other end over the adhesive. This process is automated.

After the tread is applied, the tires are ready to be cured. An inner and outer envelope (basically, a rubber tube) is placed inside the tire cavity and then a second envelope is placed over the outer tire, and then a vacuum is applied. The tires are placed on an overhead conveyor and are loaded into a long horizontal oven where the tires are cured at 260°F for 110 minutes. There are two identical ovens, and each oven can hold 23 tires. Once the tires are cured, they are taken out of the oven and the envelopes are removed (the envelopes are reusable). The tires are then visually inspected for tread depth and imperfections and placed in a machine which uses x-rays to check the integrity of the steel core. Once the tires pass inspection, each tire is then branded with a production code and staged for delivery back to the customer.

If requested by the customer, some tires are painted using an automated spray booth. The tire is placed in the booth and then rotates while it is sprayed with a black coating. Emissions are controlled by a filter on the top of the booth and then exhausted to a stack on the roof. This unit was not installed at the time of the previous inspection. Records of paint usage are not maintained on a monthly basis, but based on purchase records, the facility estimates approximately 10 gallons of paint are used for every 300 tires produced. The most tires processed in a month during the compliance period was 4507 tires in May 2017, which would be about 15 gallons of paint used based on facility estimations, which would allow the spray booth to be exempt from permitting per Rule 287(2)(c).

The fluid distribution is performed in the bulk plant, which contains thirty storage tanks ranging from 6,100 gallons to 11,650 gallons. Virgin product (Chevron is the supplier) is delivered via tanker and pumped into the designated storage tanks. The material is then pumped from the tanks into various containers (tankers, totes, drums, or pails) for each customer order. These tanks may be exempt per Rule 284(2)(i); however, further evaluation of the materials stored in these tanks is required before an exemption determination can be made.

Rim reconditioning is performed by first placing the rims in a bake-off oven at 800°F for 5 hours to remove dried paint from the rim. The bake-off oven is not permitted but may be subject to Rule 201 permitting requirements. The rims are then placed into a shot blast machine for remove any paint or rust; there are two shot blast machines, and each can hold two rims at a time. Each shot blast machine has its own baghouse and drop out box and each exhaust out the side of the building. The rims may also be manually powder coated, based on customer specifications. The powder coat booth exhausts within the building and is equipped with filters both inside and outside the booth, which are

replaced on a regular basis. Any powder coated rims are cured in an oven for 11.5 minutes at 400°F. The shot blast booths are exempt per Rule 285(2)(l)(vi)(C) and the powder coating booth and oven are exempt per Rule 287(2)(d).

**APPLICABLE RULES/ PERMIT CONDITIONS:**

Shrader Tire and Oil was issued PTI No. 126-06A on May 20, 2008.

PTI No. 126-08A, Special Conditions:

FGTireRetreading: consists of EUTireBuffing, EUTireRepair, EUTireBuilding, and EUTireCuring.

**EMISSION LIMITS**

1.1a: IN COMPLIANCE. VOC emissions did not exceed the permit limit of 8.6 tons per 12-month rolling time period. The highest 12-month rolling VOC total was 0.46 tons for the 12-month rolling time period ending June 2017; 12-month rolling total was the month ending April 2019 was 0.34 tons.

1.1b: NOT EVALUATED. AQD has not requested the facility perform testing to demonstrate compliance with the PM emission limit of 0.1 lbs/1,000 lbs. exhaust gas for EUTireBuffing.

1.1c: NOT EVALUATED. AQD has not requested the facility perform testing to demonstrate with the PM10 emission limit of 1.8 pph for EUTireBuffing.

**MATERIAL LIMITS**

1.2: IN COMPLIANCE. Facility did not exceed 30 grams of tire cement per tire, based on a monthly average. Highest average usage was 14.17 grams per tire in April 2018; facility average usage in April 2019 was 8.46 grams per tire. Based on MSDS, the facility uses a tire cement with a VOC content of 5.53 pounds VOC per gallon, which is below the permit limit of 6.04 pounds VOC per gallon.

1.3: IN COMPLIANCE. Facility did not exceed the permit limit of 600 tires processed in FGTireRetreading per day. I reviewed the monthly summary sheets rather than the daily records; the highest daily average of tires processed was 215 tires for the month of May 2017, based on the monthly total tires processed and operating days in the month. Facility averaged 135 tires per day for the month of April 2019. Since the average daily total number of tires produces were well under the permitted limit, I determined that this was sufficient to demonstrate compliance for this inspection; however, it is recommended that a review of the daily production records be performed during the next inspection.

**PROCESS/OPERATIONAL LIMITS**

1.4: IN COMPLIANCE. Waste materials are collected and maintained in closed containers and are disposed of in an acceptable manner. Crumb rubber from EUTireBuffing is collected in an enclosed trailer and hauled off site for disposal or another use.

1.5: IN COMPLIANCE. All VOC and HAP containing materials are stored in closed containers.

**EQUIPMENT**

1.6: NOT IN COMPLIANCE. The material handling system for the EUTireBuffing is installed and operated; however, vents on the side of the trailer appear to allow emissions to bypass the stack exhaust.

**TESTING**

1.7: IN COMPLIANCE. Facility uses MSDS data to determine VOC content of the tire cement. This was determined to be acceptable for the purposes of demonstrating compliance for this inspection. However, it is recommended that a sample of the tire cement is analyzed by a lab to verify VOC content during the next inspection.

**RECORDKEEPING/REPORTING/NOTIFICATION**

1.8: IN COMPLIANCE. Facility maintains records and calculations on a monthly basis, as required.

1.9: IN COMPLIANCE. Facility maintains Material Safety Data Sheets for all materials used.

