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

A936564834

FACILITY: AKWEL CADILLAC USA, INC.		**SRN / ID:** A9365
LOCATION: 603 7th St., CADILLAC		**DISTRICT:** Gaylord
CITY: CADILLAC		**COUNTY:** WEXFORD
CONTACT: Jamie Pritchard , HSE2 Engineer		**ACTIVITY DATE:** 09/20/2022
STAFF: Becky Radulski	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FY 22 Scheduled inspection and records review		
RESOLVED COMPLAINTS:		

On September 20, 2022, AQD performed a full compliance evaluation (FCE) at A9365 Akwel Automotive, Wexford County. The evaluation included a scheduled inspection and records review to determine compliance with MI-ROP-A9365-2012 and Air Pollution Control Rules.

The source is located at 603 West 7th Street in Cadillac, at the intersection of 4th Avenue and 7th Street. Akwel Automotive is formerly known as Avon Automotive.

EQUIPMENT/OPERATIONS

Akwel Automotive manufactures various sizes and types of rubber hose and tubing for automotive and the small engine industry. Over 400 variations of tubes are produced onsite. Examples of hoses included fuel, break, windshield fluid and air intake. The manufacturing process starts with two mixers where raw material is combined and emissions are controlled by a baghouse. The rubber is mixed into a ball then cut into thin belts. The belts are extruded through a die into the appropriate diameter hose. Knit, additional rubber or plastic, and adhesive solvents are added to the hose as required for each end product. Emissions from the solvents are controlled by a catalytic oxidizer. The finished rubber parts are cured in either autoclaves, liquid cure media (LCM), by microwave or in a natural gas fired cure oven - each of these processes are vented directly to atmosphere with no control.

REGULATORY DISCUSSION

The current ROP was issued October 9, 2012, MI-ROP-A9365-2012. Akwel is operating under a application shield.

Following the issuance of the ROP:

PTI 164-18 was issued 3/25/19 and remains active. The permit includes updates to FGLINES, FGSOLVENT, FGIM and FGCUREOVENS.

PTI 37-17C was issued 11/29/18 and remains active. The permit was for additional stacks for the cooling booths for post cure ovens.

PTI 207-16 was issued 6/1/17 and remains active. The permit was for a gas cure oven, electric cure oven, change materials used in curing ovens, rearrange autoclave tables.

PTI 87-16A was issued 10/20/16 and remains active. The permit was for replacement of autoclaves.

The source is major for VOCs and HAPs.

EU-LINE138, EU-CTRPKnitline, EU-CADBAR148, EU-CADBAR152, EU-CADBAR153, EU-CADBAR154, EU-CADBAR156 and EU-CADBAR161 are all Compliance Assurance Monitoring (CAM) subject due to potential pre-control emissions of VOCs greater than the major threshold limit. These lines share a catalytic oxidizer for the control of VOCs, inlet temperature is the method to demonstrate proper operation of the control. In addition, the lines will automatically shut down immediately if the inlet temperature of the catalytic oxidizer falls below the minimum set point of 650 degrees F.

EUMIXER1 and EUMIXER2 are CAM subject due to the potential pre-control emissions of Particulate Matter (PM) greater than 100 tons. The emissions from the mixers are controlled by a baghouse that is monitored by visible emissions observations and differential pressure monitoring equipment. The differential pressure is required to be between 1"-4" operating range.

EU-BOILER1 and EUBOILER2 are both exempt emission units under Rule 282(b)(i), however they are both under the Boiler MACT, Part 63, Subpart DDDDD.

INSPECTION

AQD Staff performed a site walkthrough followed by records review. The walkthrough was led by Jamie Pritchard, former Environmental/Safety contact and current Maintenance Supervisor. Joe Sockol and Todd Kendall also attended the walkthrough and led the records review portion. Joe has been with Akwel for approximately 6 months and is training to be the environmental contact. Todd is currently the person maintaining records related to the ROP and PTI's until Joe is trained to take on that task.

During the walkthrough, the extrusion lines with the permanent total enclosures were viewed. Lines 148, 152, 153, 154, 161, 156 and 167 were operating. Lids were closed and magnehelics at several lines noted were noted from 0.02 to 0.06 inches of water. The catalytic oxidizer was operating, no visible emissions observed. The inlet temperature was 659.22 deg F and outlet was 821.17 deg F. The large baghouse that controls particulate matter caused by loading into the mixers had a magnehlic reading of 3.5 inches of water, while the two smaller baghouses for mixer particulate emission control were 0 for Mixer A (South) which was not operating, and 3.8 inches of water for Mixer B (North) which was operating. The LCM and microwave lines were viewed in the City Building, all lines were operating.

Akwel noted that a new PTI application is being worked on to add a solvent applicator to Line 109. The new applicator would be for mist application to apply toluene.

RECORDS REVIEW

Catalytic Oxidizer: (Lines 152B1, 152B2, 153, 154, 156B1, 156B2, 161B1, 161B2, 167). Akwel spent approximately 1 year designing and installing permanent total enclosures that would meet the definition of Method 204. Rob Harvey, Impact Testers, was involved in the design of the PTE. Jeremy Howe, AQD TPU, reviewed the drawings as well as the actual PTE that were installed to confirm the enclosures met Method 204. On March 16, 2021, the catalytic oxidizer was tested to determine destruction efficiency. The DE was found to be above 99%, which is above the 95% minimum requirement in the permit.

EU-MW1 (ROP) - Microwave and hot air oven rubber curing operations.

I.1, I.2 - VOC emission limits for this process are 1.4 lb/hr and 4.6 tons per year based on a 12-month rolling time period. Reported emissions are .18 lb/hr and .10 tpy. Records provided demonstrate compliance with these limits.

II.1 - Material limit on EPDM for this line is 2,900,014 pounds based on a 12-month rolling time period. Reported EPDM is 26,593 pounds. Records provided demonstrate compliance with these limits

II.2 - Material limit on NEOPRENE for this line is 691,156 pounds based on a 12-month rolling time period. Reported NEOPRENE is 0 pounds. Records provided demonstrate compliance with these limits.

III.1, VI.2 - No visible emissions were noted from this process. Records of monthly non-certified readings are maintained and available. Review of these records indicates no visible emissions were observed.

VI.1 - Records of the hours of operation, amount of rubber used, and VOC emissions calculations are being kept and recorded on the material throughput spreadsheet. EU-MW1 operated 120 hours.

VIII - Stack parameters appear to meet conditions as required based on visual observation.

FGCUREOVENS – six natural gas fired and one electric post cure ovens used for vulvanzing molded and extruded rubber products. This FG group was updated in PTI 164-18.

I.1, I.2 - VOC emission limits for this FG are limited to 8.9 tons per year based on a 12-month rolling time period. Aggregate HAP emission limits for this process are 2.0

tons per year based on a 12-month rolling time period. 12 month rolling time period calculations of tons per year were 1.42 tons per year and 0.04 tons per year respectively for VOC and HAPs based on a 12-month rolling time period.

VI.1,2 – This condition requires the tracking of hours of operation, total pounds used per material, and requires a specific emission factor to be used per material for each VOC and HAP. Only two materials were used – nitrile (768 pounds) and FKM (65,420 pounds). There are no limits for volume of materials used. All records were up to date and provided.

VIII - Stack parameters appear to meet conditions as required based on visual observation.

FGMIXERS (ROP) - two rubber mixers at Plant 1, each with an associated rubber mill and cooling conveyor. Material loading to the mixer is controlled by one large baghouse and particulate emissions from the drop mills of each mixer are controlled by two smaller baghouses. There is also one fan and large stack that used to serve to vent heat and fumes from the drop mill. This equipment is no longer in use and the hoods and ductwork have been removed.

I.1-3 - Particulate emission limits are 0.01 pounds per 1000 lbs. exhaust gas, 1.22 pounds per hour, 5.3 tons per year. The pounds per 1000 lb emissions are determined through stack testing upon request. Current records show emission compliance with these limits

I.4-5 - VOC emission limits are 2.2 lb/hr and 4.9 tpy based on a 12-month rolling time period. Reported VOC emissions are 0.43 lb/hr and 1.01 tpy; therefore records show compliance with the permitted limits.

III.1 - The Mixer B baghouse was in operation at the time of the inspection, no visible emissions were noted.

VI.2 - No visible emissions were noted from this process. Records of monthly non-certified readings were available upon request.

VIII.1 - Stack parameters appear to meet conditions as required based on visual observation.

IX.1 - A PM/MAP covering the baghouses was approved by AQD on 2-19-04. The facility had a copy and was following the plan.

FGIM – EU-IM181, EU-IM182, EU-IM183, EU-IM184, EU-IM186, injection mold extruders. Issued as part of PTI 164-18.

I.1 VOC emissions are limited to 4.0 tpy based on 12 month rolling. Emissions were reported as 0.08 tpy, which is under the required limit.

V.1 Material usage is limited to specific materials, and the emission factors to be used for calculations are specified in the permit. Material throughput is not limited by material. Only EPDM, Nitrile and FKM were used.

FGLINES – extrusion line machines, includes changes made in PTI 164-18.

I.1 VOC emissions are limited to 32.1 tpy based on 12 month rolling. Emissions were reported as 0.08 tpy, which is under the required limit.

V.1 Material usage is limited to specific materials, and the emission factors to be used for calculations are specified in the permit. Material throughput is not limited by material. All listed materials were used.

FG-AOS - Alternative Operating Scenario for the facility in the event that the catalytic oxidizer malfunctions.

This scenario was discussed previously with Greg Shay (former EHHS) and Jamie Pritchard. To their knowledge, this table had never been used. As mentioned earlier, the lines that are ducted to the catalytic oxidizer will shut down if the catalytic oxidizer goes down below 650 degrees F.

FGAUTOCLAVE- twelve autoclave steam pressure vessels for the curing of unvulcanized rubber. Includes EUAUTOCLAVE1-12. This FG was changed in PTI 37-17C.

I.1, I.2, 1.3 - VOC emissions from this group are limited to 2.6 pounds per hour and 15.0 tons per year based on a 12-month rolling time period for both VOCs and HAPs. Reported emissions were 1.05 lb/hr and 2.66 tpy. Emissions were under the permitted limits.

VI.1 - Records of the process hours of operation, material processed, and VOC emissions are all being kept.

VIII.1-14 - Stack parameters appear to meet conditions as required based on visual observation.

FG-LCM (ROP) - three liquid cure media (also referred to as salt bath) rubber-curing operations at Plant 1 (city plant).

I.1 - VOC emissions from this group are limited to 29.6 tons per year based on a 12-month rolling time period. Emissions were reported at 3.29 tpy, which is under the permitted limits.

II.1-6 - This condition limits the material usage by this group. Throughput records

indicate usage of each material was below the permit limits. Records are attached.

III.1- All waste adhesion promoters/solvents are being stored and collected in closed containers

VI.1 - Records of the amount of material processed and VOC emissions are all being kept.

VIII.1-12 - Stack parameters appear to meet conditions as required based on visual observation.

FGRULE290 - any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290.

Emission units covered by this flex group include the print wheel cleaner and the pre/post cure oven. The print pan cleaner is used to clean the print wheels that label the hose during production. VOC emissions reported on the current monthly mass emissions record were 0.40 tons per year on a 12-month rolling time period. The cure oven is used for pre and post treatment of certain parts that are primarily cured in the autoclaves.

MAERS

MAERS was submitted on time and reviewed. See MAERS for any comments.

MACES

Facility and Regulatory Info screens were reviewed.

COMPLIANCE DETERMINATION

Based on the inspection and records review, the facility appears to currently be in compliance with MI-ROP-A9365-2012, currently issued PTIs, and Air Pollution Control Rules.

NAME _____ DATE _____ SUPERVISOR _____