

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

B771150593

FACILITY: SHERWIN-WILLIAMS COMPANY		SRN / ID: B7711
LOCATION: 636 East 40th Street, HOLLAND		DISTRICT: Kalamazoo
CITY: HOLLAND		COUNTY: ALLEGAN
CONTACT: Steve Eckert , EHS Manager		ACTIVITY DATE: 07/24/2019
STAFF: Cody Yazzie	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On July 24, 2019 Air Quality Division (AQD) staff (Cody Yazzie and Rachel Benaway) arrived at 636 East 40<sup>th</sup> Street, Holland Michigan at 9:30 AM to conduct an unannounced air quality inspection of Sherwin Williams Company (hereafter SWC). Staff used the telephone in the lobby entrance to make contact with made initial contact with the facilities AQD contact Steve Eckart, SWC, EHS Manager. Mr. Eckart arrived shortly thereafter and took staff to a conference room for further discussions.

SWC manufactures a variety of aerosol and liquid products for the consumer products industry. The facility has four aerosol can filling lines and one liquid product filling line. There is an outdoor tank farm consisting of 28 steel tanks ranging in size from 6,000 to 25,000 gallons capacity. There are various indoor mixing tanks used to formulate and supply the liquid portion to the filling lines. Propellants are stored outside in several pressurized tanks.

On the four aerosol lines, the product filled cans are directed to ventilated gas houses to be filled with propellant. Although some volatile organic compounds occur during storage, mixing, and liquid filling of materials, the majority of the emissions occur from gas house stacks during propellant filling.

SWC was last inspected by the AQD on March 28, 2017 and appeared to be in Compliance at that time with MI-ROP-B7711-2016. Staff asked, and Mr. Eckart stated that the facility does not have any emergency generators.

Mr. Eckart gave staff a tour of the facility. Required personal protective equipment are long sleeve shirts, safety glasses, hearing protection, high visibility vest, and steel toe boots. Staff observations and review of records provided during and following the inspection are summarized below:

#### **SOURCE-WIDE:**

This flexible group includes all source wide equipment including grandfathered and exempt equipment. As a part of this flexible group the facility is required to comply with emissions limits for Individual HAPs and Aggregate HAPs.

SWC is currently calculating monthly Aggregate HAP emissions. These monthly aggregate HAPs emissions are calculated for the filling processes and outside storage tanks. Since January 2018 the largest facility-wide aggregate HAP emissions occurred in June 2019 emitting 5.3 TPY on a 12-month rolling time period. The facility is also calculating and recording individual HAP emissions. SWC has identified 11 HAP's facility-wide that they emit. The three major HAPs that the facility appears to be emitting are hexane, methanol, and

toluene. The emission rates for each of these three HAP's are 1.86, 1.38, and 1.65 TPY respectively.

### **EU-TANKS-STORAGE:**

The facility has 28 carbon steel outside solvent storage tanks. These tanks are where SWC stores the most widely used solvents. Each tank is individually numbered from 28-55. The numbers are easily visible on each tank when looking from the north side of the tank farm. Each tank is dedicated to a specific solvent.

Staff did not observe any of the tanks in the tank farm being loaded during the inspection. Staff did inquire information on the procedure for when the tanks do get filled with solvent from Mr. Eckert. Staff was told that the tanks are loaded one solvent or compound at a time. The facility never simultaneously fills two tanks at the same time. This appears to be compliant with Special Condition III.2.

Special Condition III.1 requires tanks 30 and 31 to not be filled with a material with a vapor pressure greater than or equal to 15 kilopascals (112.5 mm of mercury). Tank 30 stores with Toluene. The SDS that was provided for Toluene documents the vapor pressure being less than 24 mm of mercury at 68 -77 degrees Fahrenheit. Tank 31 stores Versene 100. The SDS that was provided for Versene 100 documents the vapor pressure being the same as water. A SDS sheet from LabChem was used as reference for the vapor pressure of water. The LabChem SDS sheet documented that the vapor pressure of water at 50 degrees Celsius is 92.51 mm of mercury. Both the Toluene and Versene 100 appear to comply with the requirements of Special Condition III.1.

Each tank has a material limit that restricts the amount of solvent that gets loaded into the individual tanks per year. This limit is based on the capacity of the individual tank. The facility is uses a spreadsheet that indicates the capacity of each tank. Capacity range from 5,400 gallons to 25,000. This spreadsheet also indicates the allowed gallons for 275 "Turns". The facility appears to be calculating the individual material limit specified in Special Condition II.2 correctly. Since July 2018 the two most frequently filled tanks are Tanks 54 and 55. These tanks reached about 18.5% of their permitted limit.

Special Condition II.1 is an aggregate material limit specifying the total amount of solvent that can be loaded into the tank farm per year. Records showed that the facility was about 42.8% of this limit.

SWC is required to maintain monthly VOC emission rates. These monthly emission rates are to be used to calculate both a 12-month rolling TPY and pounds per hour VOC emission rates. Records were reviewed from January 2018 through July 2019. The largest pound per hour since January 2018 occurred in July 2018 and was recorded as 0.54 pounds per hour of VOC. The largest 12-month rolling VOC emissions occurred in January 2018 recording 0.95 TPY of VOC emissions. Both these recorded and calculated VOC emissions were well below the permitted limits in Special Conditions I.1-2.

The facility has reported that methyl isobutyl ketone is no longer being stored in the storage tanks. Storage of the methyl isobutyl ketone stopped in August 2018.

### **Aerosol Can Filling Lines:**

SWC has four aerosol can filling lines in the plant that all have similar configurations. Each line has stations that insert the agitator, paint filling, crimping and sealing of the valve

assembly, propellant gas injection, cleaning (if needed), water bath pressure testing, and labeling. The labeling process does have hot glue application. The hot glue adhesive on the lines appears to be exempt by Rule 287(2)(i). All four lines are given emission unit ID's in the emission unit summary table. Their emission unit ID's are EU-LINE-01-AERO, EU-LINE-06-AERO, EU-LINE-09-AERO, and EU-LINE-10-AERO. EU-LINE-06-AERO is the only line that does not have an emission unit table and associated special conditions in the ROP. As of the date the inspection VOC emission testing on these lines was conducted in 2008.

Special Condition I.1 in EU-LINE-01-AERO, EU-LINE-09-AERO, and EU-LINE-10-AERO is a VOC emission limit that is required to go through testing to show compliance. The testing is required to be completed by September 30, 2019 for this ROP. Testing was initially scheduled for August 2019. Weather related issues required Network Environmental (testing company) to push back the testing to September 4<sup>th</sup>-6<sup>th</sup>, 2019 due to extreme ambient temperatures. As the September testing dates arrived SWC asked the District office for an extension on the testing dates as the facility did not think it would have enough production orders to be able to meet the testing requirements of the test. SWC proposed testing dates on October 1<sup>st</sup>-3<sup>rd</sup>, 2019. With initial testing set up to be conducted before the testing deadline and the proposed extension not long after the ROP permit deadline District staff did decide to grant SWC the testing extension.

#### **EU-LINE-01-AERO:**

Aerosol can production line #1 is one of the four aerosol cans filling lines located at the plant. This line fills cans up to 24 oz. capacity with liquid paint or other chemical product. The gas propellant is added using a "through the valve" pressure filler in the 1/6 gashouse. The emission unit has its own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCC.

Special Condition VI.2 requires SWC to maintain records of VOC emissions on a monthly basis and number of cans filled. These records are then used to show compliance with the facility's emission and material limits.

EU-LINE-01-AERO has a material limit of 30,000,000 cans that can be processed per year based on a 12-month rolling time period. The facility is maintaining a monthly can count of the aerosol line. The facility is calculating the 12-month rolling processed can count correctly. Since January 2018 the facility has not exceeded an annual can count of 25,508,303. This maximum can count in the reviewed time period occurred in the month of August 2018. The facility appears to be in compliance with this material limit as the maximum can count in the reviewed time period was below the permitted limit.

SWC is calculating the monthly VOC records by using EU-LINE-01-AERO's tested emission factor of 0.0010 lbs./can and monthly cans produced. The test conducted in 2008 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation. Records for the 12-month rolling VOC emissions were reviewed since January 2018. The maximum 12-month rolling VOC emissions that occurred during this time was 12.7 TPY. This maximum occurred during the month of August 2018. The facility appears to be in compliance with the 12-month rolling emission limit as the maximum calculated emissions were below the 15.0 TPY permitted limit.

#### **EU-LINE-06-AERO:**

Aerosol can production line #6 is one of the four aerosol cans filling lines located at the plant.

This line fills cans up to 24 oz. capacity with liquid paint or other chemical product. The gas propellant is added using a “through the valve” pressure filler in the 1/6 gashouse. The emission unit has its own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCCC.

This aerosol can production line does not have its own emission unit table but is included in FG-MIX-FILL-CHRG. The facility does track the number of the number of cans processed as in the other aerosol can lines emission unit tables. The number of cans processed are used to calculate VOC emissions from the filling process. The facility also calculates and records the Line 6 change out emissions.

#### **EU-LINE-09-AERO:**

Aerosol can production line #9 is one of the four aerosol cans filling lines located at the plant. This line fills cans up to 16 oz. capacity with liquid paint or other chemical product. The gas propellant is added using a “through the valve” pressure filler in the 9/10 gashouse. The emission unit has its own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCCC.

EU-LINE-09-AERO has a material limit of 33,544,878 cans that can be processed per year based on a 12-month rolling time period. The facility is maintaining a monthly can count of the aerosol line. The facility is calculating the 12-month rolling processed can count correctly. Since January 2018 the facility has not exceeded an annual can count of 24,820,060. This maximum can count in the reviewed time period occurred in the month of December 2018. The facility appears to be in compliance with this material limit as the maximum can count in the reviewed time period was below the permitted limit.

SWC is calculating the monthly VOC records by using EU-LINE-09-AERO's tested emission factor of 0.001103 lbs./can and monthly cans produced. The test conducted in 2008 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation. Records for the 12-month rolling VOC emissions were reviewed since January 2018. The maximum 12-month rolling VOC emissions that occurred during this time was 13.8 TPY. This maximum occurred during the month of October 2018. The facility appears to be in compliance with the 12-month rolling emission limit as the maximum calculated emissions were below the 18.5 TPY permitted limit.

#### **EU-LINE-10-AERO:**

Aerosol can production line #10 is one of the four aerosol cans filling lines located at the plant. The gas propellant is added using a “through the valve” pressure filler in the 9/10 gashouse. The emission unit has its own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCCC.

EU-LINE-10-AERO has a material limit of 60,000,000 cans that can be processed per year based on a 12-month rolling time period. The facility is maintaining a monthly can count of the aerosol line. The facility is calculating the 12-month rolling processed can count correctly. Since January 2018 the facility has not exceeded an annual can count of 25,317,214. This maximum can count in the reviewed time period occurred in the month of April 2019. The facility appears to be in compliance with this material limit as the maximum can count in the reviewed time period was well below the permitted limit.

SWC is calculating the monthly VOC records by using EU-LINE-10-AERO's tested emission

factor of 0.0010 lb/can and monthly cans produced. The test conducted in 2004 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation. Records for the 12-month rolling VOC emissions were reviewed since January 2018. The maximum 12-month rolling VOC emissions that occurred during this time were 12.7 TPY. This maximum occurred during the month of April 2018. The facility appears to be in compliance with the 12-month rolling emission limit as the maximum calculated emissions were below the 35.9 TPY permitted limit.

#### **FG-MIX-FILL-CHRG:**

This flexible group includes Mezzanine mixing tanks; tank room mixing tanks; aerosol filling lines 1, 6, 9, and 10; and bulk liquid filling line number 4. These are designated as “filling processes”. As apart of this flexible group the facility is required to calculate the VOC, Methanol, and Dimethyl Ether emissions from the filling processes and the aerosol filling line change outs.

Special Conditions I.1-2 are VOC emission limits regarding the flexible group’s filling processes. The facility is required to keep and maintain a pounds per hour and 12-month rolling record. The facility does keep track of production hours. Since January 2018 largest pounds per hour VOC emissions from the filling processes occurred in December 2018. The pound per hour VOC emissions from these processes were calculated to be 27.0 pph. The largest 12-month rolling VOC emissions from these processes during the reviewed time frame was 80.0 TPY, which occurred in December 2018. Both these calculated emissions are below the permitted limits.

Special Conditions I.3-4 are VOC emission limits regarding the flexible group’s aerosol filling line change outs. The facility is required to keep and maintain a pounds per hour and 12-month rolling record. The facility does keep track of production hours. Since January 2018 largest pounds per hour VOC emissions from the aerosol filling line change outs occurred in March 2019. The pound per hour VOC emissions from these processes were calculated to be 3.39 pph. The largest 12-month rolling VOC emissions from the line change out processes during the reviewed time frame was 8.34 TPY, which occurred in July 2018. Both these calculated emissions are below the permitted limits.

Special Conditions I.5-6 are methanol emission limits regarding the flexible group’s filling processes. The facility is required to keep and maintain a pounds per hour and 12-month rolling record. The facility does keep track of production hours. Since January 2018 largest pounds per hour methanol emissions from the filling processes occurred in January 2018. The pound per hour methanol emissions from these processes were calculated to be 0.041 pph. The largest 12-month rolling methanol emissions from these processes during the reviewed time frame was 85 pounds per year, which occurred in December 2018. Both these calculated emissions are well below the permitted limits.

Special Conditions I.7-8 are dimethyl ether emission limits regarding the flexible group’s filling processes. The records maintained since January 2018 show that the facility is hardly using any dimethyl ether. In most months’ usage is so low that emissions round to 0.00 tons per month. The largest monthly calculated dimethyl ether emissions during the reviewed time period occurred in January 2018. The dimethyl ether emissions in January were calculated to be 22 lbs per month. Emissions are well below the permitted limits.

#### **FG-RULE-290:**

On each aerosol line the lines are equipped with an InkJet can coder and a Marsh carton printing unit. These units are used to print a code on the cans going through the aerosol line that includes information such as the VOC content of the manufactured cans. The facility uses two different inks and the same make up solution for both inks. The TH-18u Make up solution appears to be categorized correctly based chemicals in the solutions and the screening levels found in the AQD database. During Staffs review the screening levels for volatilizing chemicals in JP-K72u where well above the 2.0 ug/m<sup>3</sup> as an ITSL. This allows for less than 1,000 lbs per month of the make up solutions and JP-K72u combined. Since January 2018 the most volatile emissions were calculated to be 106.5 lbs in the month of June 2018.

The PIN 36 Series Black Ink is used for the MARSH carton coding units. Staff's review of this SDS showed that the Ink does contain Diethylene Glycol Monobutyl Ether which does have an AQD screening level of 1 ug/m<sup>3</sup> as an ITSL. This screening level only allows for 20 lbs per month of emissions. SWC's records showed that during the reviewed period of January 2018 - June 2019 the facility has not used any of this ink.

Based on the records review the facility appears to be complying with exemption Rule 290 recordkeeping requirements.

#### **FG-40CFRPART59:**

This flexible group is for emission units that are subject to 40 CFR Part 59 Subpart C— National Volatile Organic Compound Emission Standards for Consumer Products. This regulation requires that each container display the day, month, and year for which the product was manufactured. The facility is also required to label products with the VOC content in the product.

#### **FG-40CFRSUBPARTCCCCCCC:**

This flexible group includes all the emission units that are subject to the federal regulation 40 CFR Part 63 Subpart CCCCCC – National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing. The emission units that are included in this flexible group are EU-LINE-01-AERO, EU-LINE-06-AERO, EU-LINE-09-AERO, EU-LINE-10-AERO, EU-MIXING, and EU-LINE-04-LIQ.

40 CFR 63.11601(a) requires affected sources to comply with the requirements in paragraphs (a)(1) through (5) of the section at all times. These requirements pertain to the addition of dry pigments and solids that contain compounds of cadmium, chromium, lead, or nickel. These requirements state that particulate emissions of these compounds must be captured and routed to a control device.

The facility does not have any grinding or milling processes at the facility. SWC also does not have any dry pigments or solids addition that contain compounds of cadmium, chromium, lead, or nickel. The only dry solids addition that the facility will do as apart of the mixing process is of Sodium Nitrite.

40 CFR 63.11601(b) requires affected sources to comply with the requirements in paragraphs (b)(1) through (5). These requirements pertain to process, storage, and mixing vessels that contain benzene or methylene chloride. Mr. Eckert stated that the facility does not use any materials that contain benzene or methylene chloride.

#### **Boilers and Furnaces:**

There are two gas-fired boilers located in a room toward the rear of the building. Each has a nameplate rating of 4.18 MMBTU/hour. These units appear to be exempt from the ROP but are listed in the Staff Report

There are 7 gas-fired furnaces listed in MAERS that are located on the roof. These units are exempt from the ROP but are listed in the Staff Report. These units range from 0.032 MMBTU/hour to 6.5 MMBTU/hour.

**Cold Cleaner:**

During the inspection Staff did observe one parts washer with a solvent in it. The parts washer's lid was closed while it was not in use. Staff gave Mr. Eckert stickers to be posted on the outside of the unit. After the inspection Mr. Eckert provided Staff with two SDS sheets of the solvents that are used in the facility. The facility reported that these units contain acetone most of the time when used and will occasionally use hexane. After review of the SDS for each solvent Staff noted that the vapor pressure was 241 hPa for acetone and 17.7 hPa for hexane. These convert to roughly 3.49 psi and 2.57 psi respectively. Part 7 rules specifically Rule 707(3)(a)(i) require that solvents that have a Reid Vapor pressure greater than 0.3 psia shall use a cover that is mechanically assisted. During the inspection the cold cleaner that was observed was not mechanically assisted.

Acetone is considered an exempt VOC by the AQD but still considered an air toxic. Being an exempt VOC would mean that these units would not meet the definition of a cold cleaner and therefore not subject to the part 7 rules or able to qualify for exemption Rule 281(2)(h). Staff does feel these units would need to meet the exemption criteria of a different Rule 201 exemption such as Rule 290 to be considered exempt units. The facility believes the units would be able to comply with the emitting less than 1000 lbs per month of acetone but did not have the recordkeeping required by the rule 290.

The facility operates manual acetone cleaning stations on lines 1, 9, and 10. These cleaning stations are used if a can gets paint or other product on the outside of the can. These cleaning stations are essentially metal sinks (< 10 square feet area) partially filled with solvent in which cans can be immersed. The sinks are hooded and ventilated outdoors. The sinks are either covered or empty when not in use. There were no acetone emissions records to show compliance with Rule 290.

Mr. Eckart did mention that the facility would most likely try and utilize exemption Rule 290 for these units. Staff did mention to Mr. Eckart that a violation would be sent to Sherwin Williams so that the district office could have a formal response on how the facility would want to proceed with these emission units.

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 non-compliance with Rule 201. Staff stated to Mr. Eckart that a violation notice would be sent to the facility for the acetone cleaning units. Staff concluded the inspection at 12:45 PM.-CJY

NAME Cody Young

DATE 9/25/19

SUPERVISOR RIL 9/30/19