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

B771168889

FACILITY: SHERWIN-WILLIAMS COMPANY		SRN / ID: B7711
LOCATION: 636 East 40th Street, HOLLAND		DISTRICT: Kalamazoo
CITY: HOLLAND		COUNTY: ALLEGAN
CONTACT: Ron Zibbell , EHS Manager		ACTIVITY DATE: 06/28/2023
STAFF: Cody Yazzie	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On June 28, 2023 Air Quality Division (AQD) staff (Cody Yazzie, Chuku Oje, and Rachel Fuller) arrived at 636 East 40th Street, Holland Michigan at 10:00 AM to conduct an unannounced air quality inspection of Sherwin-Williams Company (hereafter SWC) SRN (B7711). Staff made initial contact with Ron Zibbell, SW, EHS Manager, who is the environmental contact and stated the purpose of the visit. After inital introductions Staff was taken to a conference room for discussions.

SWC manufactures a variety of aerosol and liquid products for the consumer products industry. SWC 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.

SW was last inspected by the AQD on April 13, 2021 and appeared to be in compliance at that time with MI-ROP-B7711-2016. Staff asked, and Mr. Zibbell stated that the facility does not have any emergency generators.

Mr. Zibbell gave staff a tour of the facility. Required personal protective equipment are a Fire Resistant (FR) long sleeve shirt, high visibility vest, safety glasses, steel toe boots, and hearing protection. 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 both monthly Individual and Aggregate HAP emissions. As noted in previous inspection reports the facility has identified 12 individual HAPs that are emitted in their production process. Looking at the 2022 MAERS report 10 of the 12 HAPs emit less than 100 lbs per month. The two largest individual HAP emissions are Hexane and Toluene. Hexane's largest 12-month rolling emissions occurred during in September 2022 which amounted to 3.07 TPY.

Toluene's largest 12-month rolling emissions occurred during June 2022 which amounted to 1.1 TPY. These are well below the permitted 9 TPY for individual HAPs.

The facility is calculating Aggregate HAP emissions from the process. Since January 2022 the largest facility-wide aggregate HAP emissions occurred in March 2022 emitting 4.6 TPY on a 12-month rolling time period. This is well below the permitted 22 TPY of Aggregate HAPs.

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. However, Staff did ask if filling procedures were the same in regard to only filling one tank at a time. Mr. Zibbell told Staff that procedures were the same as previous inspection. This appears to be compliant with Special Condition III.2.

Staff was also provided with documentation that the conservation vents were replaced in July 2022. These are required by special condition IV.1. The facility appears to be meeting this requirement.

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). These were reviewed during the previous inspection. The findings of the review are stated as follows. 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 uses a spreadsheet that indicates the capacity of each tank and tracks the amount in gallons that is filled in the tank. Capacity range from 5,400 gallons to 25,000. This spreadsheet also indicates the allowed gallons for 275 "Turns". This comes from Special Condition II.2 in which it states "For each tank in the tank farm the amount of solvent loaded per yar shall not exceed 275 times the capacity of the tank". The facility appears to be calculating the individual material limit specified in Special Condition II.2 correctly. Since January 2022 the two most frequently filled tanks are Tanks 54 and 55. The records showed that Tank 54 ranged between 41 – 67 "Turns" in a 12-month rolling period and the highest occurring in May 2023. The records for Tank 55 ranged between 25 and 49 "Turns" in a 12-month rolling time period. The facility is well below the limits for each tank in regards to Special Condition II.2

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. The limit for this is 9,300,000 gallons of solvent into

the tank farm per 12-monoth rolling time period. Records Reviewed from January 2022 through May 2023 showed that the largest amount of solvent loaded into the tank farm for the reviewed time period occurred in October 2022 with an amount of 3,359,880 gallons. This is about 36% the permit 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 2022 through May 2023. The largest pound per hour since January 2022 was recorded as 0.43 pounds per hour of VOC in July 2022. The pound per hour emissions are calculated by calculating the monthly emission of the tank and dividing by the number of hours in the month. The largest 12-month rolling VOC emissions occurred in June 2022 recording 1.49 TPY of VOC emissions. Both these recorded and calculated VOC emissions were well below the permitted limits in Special Conditions I.1-2.

In the previous inspection it was noted that the facility was not storing methyl isobutyl ketone. The facility indicated that they are still not storing any methyl isobutyl ketone. Due to the facility not storing methyl isobutyl ketone no records were requested for the emission limit regarding it in special condition I.3.

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 individual emission unit table, but is covered under the flexible group FG-MIX-FILL-CHRG.

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 was required to be completed by September 30, 2019 for this ROP. The facility did request extensions mentioned in previous inspection reports. From previous inspection report the extensions were accepted by the AQD and Testing was conducted on October 1st-3rd, 2019. The special condition also notes that all subsequent testing shall be completed once every five years after the September 30, 2019. During the inspection Staff mentioned to Mr. Zibbell that this would make Testing due back in 2024.

The VOC emissions rates for EU-LINE-01-AERO, EU-LINE-09-AERO, and EU-LINE-10-AERO were determined to be 0.00060, 0.00057 and 0.00027 lbs per can respectively. These meet the Special Condition I.1 limits for each emissions unit which are 0.0010, 0.001103, and 0.0010 lbs per can respectively.

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-40CFRSUBPARTCCCCCCC.

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 2022 the facility has not exceeded an annual can count of 23,750,482. This maximum can count in the reviewed time period occurred in the month of January 2022. 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 permitted emission factor of 0.0010 lbs./can and monthly cans produced. The test conducted in 2019 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation but is also an overestimation based on the stack test results. The facility could use the 2019 Stack testing data for VOC emissions per can to calculate VOC emissions from EU-LINE-01-AERO. Records for the 12-month rolling VOC emissions were reviewed since January 2022. The maximum 12-month rolling VOC emissions that occurred during this time was 11.87 TPY. This maximum occurred during the month of January 2022. 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.

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 2022 the facility has not exceeded an annual can count of 20,778,934. This maximum can count in the reviewed time period occurred in the month of January 2022. 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 permitted emission factor of 0.001103 lbs./can and monthly cans produced. The test conducted in 2019 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation. Using the emission limit will result in a slight over estimation of VOC emissions due to the testing value being lower than the permitted limit. The facility could use the 2019 Stack testing data for VOC emissions per can to calculate VOC emissions from EU-LINE-09-AERO. Records for the 12-month rolling VOC emissions were reviewed since January 2022. The maximum 12-month rolling VOC emissions that occurred during this time was 11.46 TPY. This maximum occurred during the month of January 2022. 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 2022 the facility has not exceeded an annual can count of 20,202,847. This maximum can count in the reviewed time period occurred in the month of October 2022. 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.

Again, SWC is calculating the monthly VOC records by using EU-LINE-10-AERO's permitted emission factor of 0.0010 lb/can and monthly cans produced. As with the other lines the facility could use the emission factor established by the stack test. Using the permitted emission factor is overestimating the emissions based on stack test results. Records for the 12-month rolling VOC emissions were reviewed since January 2022. The maximum 12-month rolling VOC emissions that occurred during this time were 10.10 TPY. This maximum occurred during the month of October 2022. 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 2022 largest pounds per hour VOC

emissions from the filling processes occurred in March 2022. The pound per hour VOC emissions from these processes were calculated to be 25.9 pph. The largest 12-month rolling VOC emissions from these processes during the reviewed time frame was 67.0 TPY, which occurred in February 2022. 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 2022 largest pounds per hour VOC emissions from the aerosol filling line change outs occurred in March 2022. The pound per hour VOC emissions from these processes were calculated to be 2.35 pph. The largest 12-month rolling VOC emissions from the line change out processes during the reviewed time frame was 6.33 TPY, which occurred in January 2022. 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 2022 largest pounds per hour methanol emissions from the filling processes occurred in January 2022. The pound per hour methanol emissions from these processes were calculated to be 0.182 pph. The largest 12-month rolling methanol emissions from these processes during the reviewed time frame was 0.34 TPY, which occurred in April 2022. 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 2022 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 May 2023. The 12-month rolling dimethyl ether emissions in this month were calculated to be 132 lbs per year. Emissions are well below the permitted limits. The facility is also tracking pph emissions of dimethyl ether. The largest monthly average pph of dimethyl ether occurred in April 2023, which recorded a rate of 0.14 pph of dimethyl ether.

Special Condition II.1 is a material limit that limits FG-MIX-FILL-CHRG to not processing more than 40.17 million gallons of materials per year in the filling process based a 12-month rolling time period. In the reviewed time period, the largest amount materials that were processed in the filling process was 8,918,109 gallons per year. This occurred in January 2022 and is well below the permitted limit.

FG-RULE-290 (InkJet and Marsh Printers):

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 is using the same ink and make-up solutions as reviewed during the previous inspection. In the previous inspection the TH-18u and JP-K72u Make-up solution appeared to be categorized correctly based chemicals in the solutions and the screening levels found in the AQD database. The previous inspection report indicated the screening levels for volatilizing chemicals were well above the 2.0 ug/m3 as an ITSL. This allows for less than 1,000 lbs per month of the ink and make-up solutions TH-18u and JP-

K72u combined. Staff reviewed records for this these emission units for the time period of January 2023 through May 2023. During this time period the facility used 55.35 lbs of TH-18u and JP-K72u combined in each month.

In the previous inspection the PIN 36 Series Black Ink is used for the MARSH carton coding units. It was noted in the previous inspection that 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/m3 as an ITSL. This screening level only allows for 20 lbs per month of emissions. SWC's records showed that during the reviewed period the most it used was 12.7 lbs in January 2023. Most other months the facility didn't use any at all.

Based on the records review the facility appears to be complying with exemption Rule 290 recordkeeping requirements. Recordkeeping should keep track of the PIN 36 Ink as if used enough may not qualify for the Rule 290 exemption.

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.

Special Condition III.1 requires that the facility not manufacture any consumer product without ensuring that the VOC content levels do not exceed either the values listed in Table 1 or the High-Volatility Organic Compound (HVOC) content levels listed in Table 2 of Appendix 9 in the ROP. Staff requested a list of the consumer products produced at the facility, their product classification, and their VOC content in the product. The provided list showed that none of the consumer products exceeded the VOC limits identified in Table 1 in appendix 9 of the ROP. The facility did have one product CLQC00700-040 that was the same as the limit set for Oven/Girl Cleaner Aerosols but did not exceed the limit. There were several other products that came very close to the VOC limit identified in Table 1 but did not exceed. It appears that the facility is in compliance with Special Condition III.1 based on the data provided.

FG-40CFRSUBPARTCCCCCCC:

This flexible group includes all the emission units that are subject to the federal regulation 40 CFR Part 63 Subpart CCCCCCC – 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 part of the mixing process is of Sodium Nitrite.

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. The boilers are used to provide steam to the gas houses for heat and to the water baths that are used for bubble leak testing. Staff was told that the facility only operates one boiler at a time. While one boiler is running, the other is on standby in the event it is needed.

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.

Rule 285(2)(r)(iv):

As mentioned in the previous inspection report the facility does have a parts washer style unit that are located around the facility. Staff was informed that the facility does have 6 of these units around the facility that only utilize acetone as the wash solvent. Since acetone is an exempt VOC using it as a wash solvent does not qualify the units as a parts washer or "cold cleaner" as it does not meet the definition of cold cleaner under the part 1 rules. The definition of cold cleaner means any tank containing organic solvent with a VOC content of 5% or more, by weight. If the facility switches out wash solvents they could become a cold cleaner and subject to the part 7 rules if the solvent wash is greater than 5% VOC by weight.

The facility appears to be utilizing Rule 285(2)(r)(iv) for these units. In the previous inspection it was noted that a unit was located roughly 20-30 feet from a large open loading door that was open for a breeze to come in the facility. Staff did not observe this during the inspection. The facility appears to be keeping these units emitting to the general in-plant environment. Since it was noted in a previous inspection Staff should pay attention to this in future inspections.

Acetone Can Cleaning Stations Rule 290:

The facility has acetone can cleaning stations on each aerosol line. In the previous inspection report it was noted that Acetone has an ITSL of 5900 micrograms per cubic meter. This allows for the facility to emit 1,000 pounds per month. This would roughly be 150 gallons of acetone. Records were reviewed for the time period of January 2022 through June 2023. The records showed that line 1 was the only cleaning station to have acetone put in the unit. The use only occurred during the month of June 2022 in which it used 5 gallons of acetone. During the inspection Staff observed these units being empty. The facility appears to be in compliance with Rule 290 for this emission unit.

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 compliance with MI-ROP-B7711-2016. Staff stated to Mr. Zibbell that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 11:30 AM.-CJY

NAME Cody Yaggie DATE 9/7/2023 SUPERVISOR