DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

B414547811

FACILITY: AkzoNobel Coatings Inc		**SRN / ID:** B4145
LOCATION: 120 Franklin, PONTIAC		**DISTRICT:** Southeast Michigan
CITY: PONTIAC		**COUNTY:** OAKLAND
CONTACT: Jeffrey Poniewierski , Process Improvement Supervisor		**ACTIVITY DATE:** 12/18/2018
STAFF: Adam Bognar	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Self-Initiated Inspection		
RESOLVED COMPLAINTS:		

On Tuesday, December 18, 2018, Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) staff, I, Adam Bognar, conducted an unannounced self-initiated inspection of AkzoNobel Coatings Inc. (AkzoNobel or the "facility") located at 120 Franklin, Pontiac, MI 48341. The purpose of this inspection was to determine the facility's compliance status 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 (MDEQ-AQD) rules; and Opt-Out Permit to Install No. 184-06.

Permit to Install 184-06 was issued on August 18, 2006 as an ROP opt-out permit for VOC and HAP emissions from paint/coating manufacturing and associated cleanup equipment. This facility is located in Oakland county which is in non-attainment for ozone. Oakland County is in attainment for CO, lead, NOx, and PM. AkzoNobel is located slightly west of Woodward Avenue. The closest residential property is about 300 feet directly south of the facility. There are also residential properties approximately 2000 feet east of AkzoNobel (across Woodward Avenue). Several commercial businesses are adjacent to AkzoNobel.

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I arrived at the facility at around 2 pm. I did not notice any visible emissions while outside of the facility. I entered the facility and met with Mr. Jeff Poniewierski, HSE Business Partner. I identified myself, provided credentials, and stated the purpose of the inspection. We held a pre-inspection meeting where we discussed current facility operations and reviewed records. After the pre-inspection meeting, Mr. Poniewierski gave me a tour of the facility.

AkzoNobel manufactures paint and coatings for a broad range of applications. A majority of manufactured products end up at automotive body shops for collision repair. There are approximately 165 employees that operate this plant continuously during three shifts.

Paint manufacturing at AkzoNobel is a batch process. Constituents of a paint/coating mixture are blended in a mixing tank to create the desired product. A variety of solvents and organic dyes are used in this process. In this manner, AkzoNobel manufactured approximately 3.5 million gallons of paint/coatings in the most recent 12-month rolling period ending in October 2018. Finished products and raw materials are stored on-site in a separate warehouse from the manufacturing floor.

Paint/coating manufacturing at AkzoNobel can be categorized in one of three batch types: Large batch (LB), small batch (SB), and color blending unit (CBU). The large batch tanks are stationary units larger than 550 gallons that are bolted in place and have permanent dedicated plumbing on each tank. The small batch tanks are portable units smaller than 550 gallons that can be wheeled around. The color blending unit (CBU) manufacturers small batches (less than 250 gallons) with a relatively short lead time (1-2 days). This is possible because the formulation usually includes premixed raw materials that are manufactured in the main manufacturing area. There are several premixed raw materials that are all attached to a common unit (CBU) that pumps the desired quantities into the batch manufacturing mix tank.

Emissions from this facility are estimated using a commercially available software called PirnieAIR. PirnieAIR is a Microsoft Access database that takes in process specific data and EPA-published equations or AP-42 emission factors to calculate emissions from a batch. The larger paint manufacturing processes utilize around 90 manufacturing steps to calculate emission factors. These steps include adding each solvent, mixing, heating, and gas sweeps.

During a gas sweep, solvent vapors are evacuated during product mixing to prevent an explosive mixture of vapors inside a vessel. Nitrogen gas is used to evacuate vapors. Emissions from the gas sweeps account for almost half the emissions for large batches. In general, emissions from large batch manufacturing are around 8 times more than in a small batch.

PirnieAIR emission factors were determined using the weighted average of VOC and HAP content for each batch formulation. The formulation with the highest weighted VOC and HAP content (worst-case scenario) is used as the basis for calculating VOC and HAP emission factors. A worst-case scenario formulation was assigned to each of the following batch types: small batch solvent pigmented coatings, small batch solvent non-pigmented coatings, small batch waterborne coatings, large batch solvent pigmented coatings, large batch solvent non-pigmented coatings, large batch waterborne coatings, and color blending unit operations. The emission factor generated is multiplied by the total gallons produced in each type of batch.

PirnieAIR also estimates emissions for portable tank cleaning. Portable tanks are cleaned using a churn washer. Clean recycled solvent is sprayed into the portable tank. A rotating brush is lowered into the tank, sealing the opening and cleaning the inside of the tank. Spent solvent is collected in a waste solvent drum. Each cleanup uses approximately 5 gallons of clean solvent.

Waste solvent from manufacturing and tank cleaning is processed by Chemical Solvents, Inc. and sent back to AkzoNobel as recycled solvent to be reused for tank cleaning and other miscellaneous cleaning. Around 4,000 gallons of waste solvent per week is sent to Chemical Solvents, Inc. with a recovery rate of around 65%. Recycled solvent is stored in a 12,000-gallon tank at the tank farm.

Opt-Out PTI No. 184-06
EUPARTSWASHER – The special conditions of this section apply to a specialized solvent-based parts washer that AkzoNobel has not installed. Mr. Poniewierski stated that there are currently no plans to install a specialized parts washer at the facility. Because this washer is not currently installed, these special conditions do not currently apply.

FGCLEANING
This flexible group applies to the cleaning of portable storage tanks and all exempt cold cleaners installed after 1979.

Special Condition 2.1: States that AkzoNobel shall conduct cleaning of paint manufacturing and paint shipping containers using methods that minimize VOC emissions. Organic solvent is used for tank/equipment cleaning. Tanks are completely closed during cleaning cycles.

Special Condition 2.2: States that AkzoNobel shall store wash solvent in closed containers. All solvents at the facility appeared to be stored in closed containers.

Special Condition 2.3: Requires AkzoNobel to submit to the AQD district supervisor, within 60 days of permit issuance, approvable work practice standards for portable tank cleaning. On October 23, 2006, AkzoNobel Submitted the work practice standards for both the Hockenmeyer tank cleaner and the color blending unit tank cleaner. These cleaning procedures are still used today and can be found in the AkzoNobel AQD file.

Special Condition 2.4: Requires AkzoNobel to equip all stationary and portable mixing tanks, and high-speed dispersion mills with covers that cover all openings except for what is needed to allow safe clearance for the mixing shaft. All of these tank types were covered during my inspection. Stainless steel covers are used in cases where the tank contains solvents. On clean tanks, sometimes a flexible plastic cover is used to prevent the introduction of dust.

Special Condition 2.5: Requires AkzoNobel to keep monthly records of the number of portable tanks cleaned. These records are maintained in the Pirnie Air database (Attachment 2). The highest reported monthly number of tanks cleaned was 414 tanks in August 2018. The most recently reported monthly total was 217 tanks in October 2018.

Special Condition 2.6: Requires AkzoNobel to keep a record of the number of parts cleaners used at the facility. Mr. Poniewierski provided me with these records (Attachment 3). There are 8 parts washers throughout the facility. All parts washers utilize reclaimed solvent from the tote cleaning process. Parts washers had operating procedures posted and the lids were closed.

There is one solvent-based parts washer that is set up differently than the others. It is an open top sink that drains into a catch bucket underneath. I told Mr. Poniewierski that this solvent-wash station is technically a cold cleaner and thus is subject to certain regulatory requirements. Instead of modifying this solvent-wash station to comply with our rules, Mr. Poniwierski stated that he would replace this solvent-wash station with a 55-gallon drum/sink style parts washer that is identical to some of the other parts washers on site.

Cold cleaner emissions are estimated at 280 lbs/unit/year VOCs and 89.6 lbs/year/unit HAPs. With 8 cold cleaners, this equates to 2240 lbs VOC and 717 lbs HAP emissions.

Special Condition 2.7: Requires AkzoNobel to keep a written record of current emission factors used to calculate VOC and HAP emission rates in FGCLEANING. These records were made available to me during my inspection. The current emission factor is 1.5 lb VOC and 0.48 lb HAP per portable tank cleaned.

Special Condition 2.8: Requires AkzoNobel to keep monthly and 12-month rolling time period calculations of VOC and HAP emission rates from FGCLEANING. These records are maintained. Mr. Poniewierski provided me with the most recently calculated 12-month rolling period beginning in November 2017 and ending in October 2018 (Attachment 2). 4,212 portable tanks were cleaned during this period resulting in calculated VOC emissions of 3.2 tons and HAP emissions of 1 ton.

FGPAINT

This flexible group includes all paint manufacturing operations including EULARGEBATCH, EUSMALLBATCH, and EUCBU (Color Blending Unit). Batches larger than 550 gallons are considered large batches. Batches less than or equal to 550 gallons are considered small batches. The color blending unit is used for batches less than or equal to 250 gallons.

In all three emission units, VOC emissions are vented directly to the atmosphere through conservation vents, exhaust systems, or dust collection systems. Particulate emissions from the addition of paint solids are controlled by dust collectors.

Special Condition 3.1: Limits the particulate emissions from FGPAINT to 0.1 lbs/1,000 lbs exhaust gas. Compliance with this condition is verified through proper operation of the baghouses. Only one of the baghouses, DCOL-06, was in operation during my inspection. The pressure drop on DCOL-06 was 3.6 psig. The acceptable pressure range is between 0 psig and 8 psig. Operators that take the pressure readings are instructed to notify a team leader that the filter needs to be replaced if the pressure exceeds 5 psig. Baghouses are only turned on when solids are being added to tanks. All other baghouses were turned off and had pressure readings of 0 psig.

Special Condition 3.2 (a, b, c, d): Establishes 12-month rolling production volume limits for the small batch, large batch, color blending unit, and waterborne paint manufacturing. Compliance with this condition is demonstrated through recordkeeping. Each time a batch is produced, the volume is entered into a database that tracks the total production volume. 12-month rolling records of production volumes from November 2017 to October 2018 were provided to me during my inspection (Attachment 1). Based on the records I reviewed the production volume limits have not been exceeded (see table below).

Batch Type	12-month Rolling Production Volume (gallons)	Limit (gallons)
Small Batch	**608,588**	**2,200,000**
Large Batch	**3,000,725**	**5,086,764**
Waterborne	**144,396**	**1,256,000**
CBU	**107,133**	**300,000**

Special Condition 3.3: Requires AkzoNobel to clean paint manufacturing and paint shipping containers using methods that minimize the emission of VOCs. Organic solvent is used for tank/equipment cleaning. Tanks are completely closed during cleaning cycles.

Special Condition 3.4: Requires AkzoNobel to store wash solvent in closed containers. Wash solvent is stored in closed drums.

Special Condition 3.5: Requires that all stationary mixing tanks, portable mixing tanks, and high-speed dispersion mills to be equipped with covers that cover all openings except openings that are no larger than necessary to allow safe clearance for the mixer shaft. All tanks were equipped with covers. There is a circular cutout in the middle of the metal covers that is just large enough for the mixer shaft.

Special Condition 3.6: States that AkzoNobel shall not load solids into any equipment unless the associated dust collectors are installed, maintained, and operated in a satisfactory manner. Based on my inspection and record review the dust collectors are operated and maintained correctly. Dust collectors are only operated when charging (loading) tanks with solids. There is a preventative maintenance checklist for the dust collectors that is filled out weekly (Attachment 4). I did not notice any fugitive paint solids outside or in the plant.

Special Condition 3.7: Requires AkzoNobel to replace all flexible plastic covers with tight fitting covers. Flexible plastic covers are still allowed on empty tanks. All tanks that contain materials are equipped with stainless steel, tight fitting, covers. Flexible covering is still used on empty tanks.

Special Condition 3.8: Requires that dust collectors DC-1, DC-2, WB, and prestage be equipped with a device to measure pressure drop on a continuous basis. All dust collectors are equipped with a device to measure the pressure drop.

Special Condition 3.9: Requires AkzoNobel to keep monthly and 12-month rolling time period records of the gallons of each paint type produced. These records were made available to me during my inspection (attachment 1). Based on the records I reviewed, there are no reported exceedances of production volumes.

Special Condition 3.10: Requires AkzoNobel to keep weekly records of the pressure drop for the DC-1, DC-2, WB, and prestage dust collectors. These weekly records were provided to me during my inspection (Attachment 4).

Special Condition 3.11: Requires AkzoNobel to keep a written record of emission factors used to calculate VOC and HAP emission rates from FGPAINT. These records are maintained in the Pirnie Air database and were made available to me during my inspection. These factors are also maintained in the MDEQ-AQD AkzoNobel facility file.

Special Condition 3.12: Requires AkzoNobel to keep monthly and 12-month rolling time period calculations of VOC and HAP emission rates for FGPAINT. These records are maintained as part of the Pirnie Air database (Attachment 1). Based on the records I reviewed, AkzoNobel has not exceeded permit or major source thresholds. The reported emissions are similar to what AkzoNobel reported in their 2017 MAERS submittal.

Special Condition 3.13: Specifies stack requirements. I did not climb to the roof to verify stack dimensions. Some stacks are not required to be discharged vertically upwards. Stacks appeared to meet permit requirements.

FGFACILITY

Special Condition 4.1 (a, b, c, d): Establishes facility-wide emission limits for VOC, individual HAP, and total HAP emissions of 60 tons/year, 9 tons/year, and 22.5 tons/year, respectively. Based on the records I reviewed, AkzoNobel appears to be under these emission limits. Facility-wide emissions for the most recently reported 12-month rolling period are 10.49 tons of VOCs and 4.42 tons of Total HAPs.

AkzoNobel does not currently maintain a spreadsheet that calculates facility-wide emissions. To determine the facility-wide emissions, I added the total emissions from large batch, small batch, color blending unit, portable tank cleaning, and from parts washers. I asked Mr. Poniewierski to create a document to calculate and record facility-wide VOC and HAP emissions.

Since the total HAP emissions are less than 9 tons/year there is no practical reason to calculate individual HAP emissions. If total HAP emissions rise above 9 tons/year, then it may become necessary for AkzoNobel to determine individual HAP emissions.

Emergency Generator

AkzoNobel operates one Kohler 100RZG natural gas fired emergency generator with a maximum power rating of 121 kW (162 hp). The unit was installed on-site in December 2006. The purchase order for this unit was also made in December 2006. AQD considers the date the purchase order was made to be the date that AkzoNobel "commenced construction" of the emergency generator. This generator is run for 30 minutes weekly for preventative maintenance purposes. See Attachment 5 for the technical data sheet.

This generator is not certified by the EPA for compliance with 40 CFR Part 60 – Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (Subpart JJJJ). Additionally, Akzo Nobel Coatings Inc. failed to conduct a performance test on the emergency generator within the time period specified in Subpart JJJJ. In order to continue operating this emergency generator, Akzo Nobel Coatings Inc. must conduct a performance test on the emergency generator demonstrating that emissions from the generator meet the standards outlined in Subpart JJJJ. Additionally, Akzo Nobel Coatings Inc. must comply with all applicable regulations in Subpart JJJJ. A violation notice was sent to Akzo Nobel Coatings Inc. in February 2019 seeking compliance with Subpart JJJJ.

Laboratory Operations

Akzonobel operates a pilot laboratory where small batches of new formulations are tested before going into full-scale production. Emissions from the pilot lab are estimated using the PirnieAir small batch emission factor.

In addition to the pilot laboratory, there is a research and development laboratory where paint/coatings are tested for various parameters. There are three spray booths in this lab that are used to spray small rectangular panels for testing purposes. All three booths are exhausted outdoors and are equipped with dry filters. I did not observe any gaps in the dry filters. These booths are not used for production. Only a small amount of paint is used in these booths. These paint booths appear to be exempt from Rule 201 requirements pursuant to Rule 287 (2)(c).

Acetone is used for paint gun cleaning and line purging. About 80 gallons of acetone is ordered for laboratory operations each month. Of these 80 gallons, around 90% is used to wash solvent cans. The other 10% is used to wash paint guns.

There are 8 storage tanks at the tank farm used to store raw batch materials. A vapor balance system is installed to capture emissions during filling. These tanks appear to be exempt from Rule 201 requirements pursuant to Rule 284 (2)(i).

Compliance Determination

This facility appears to be in compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) Administrative Rules; and Permit to Install No. 184-06.

NAME Adam Bogner DATE 2/13/2019 SUPERVISOR SK