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MANILA

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

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| **FACILITY:** MAGNA CLOSURES LIGHTING DIVISION | | **SRN / ID:** P0594 |
| **LOCATION:** 46600 PORT STREET, PLYMOUTH | | **DISTRICT:** Detroit |
| **CITY:** PLYMOUTH | | **COUNTY:** WAYNE |
| **CONTACT:** Garry Bucholz , Health/Safety/Environmental Manager | | **ACTIVITY DATE:** 07/20/2018 |
| **STAFF:** Stephen Weis | **COMPLIANCE STATUS:** Compliance | **SOURCE CLASS:** SM OPT OUT |
| **SUBJECT:** Compliance inspection of the Magna Closures Lighting Division facility in Plymouth. The Magna facility is scheduled for inspection in FY 2018. | | |
| **RESOLVED COMPLAINTS:** | | |

**Location:**
Magna International, Inc.
Autosystems America, Inc. (Division of Magna Closures Lighting)
(SRN P0594)
46600 Port Street
Plymouth Township 48170

**Date of Activity:**
Friday, July 20, 2018

**Personnel Present:**

Steve Weis, DEQ-AQD Detroit Office
Garry Bucholz, Health, Safety and Environmental Manager, Magna Closures Lighting Division

**Purpose of Activity**

A self-initiated inspection of the Magna International, Inc. Magna Closures Lighting/Autosystems America facility (hereinafter "Magna") in Plymouth Township was conducted on Friday, July 20, 2018. The Magna facility was on my list of sources targeted for an inspection during FY 2018. The purpose of this inspection was to determine compliance of operations at the Magna facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control), and with applicable Federal standards. The facility is also subject to the terms and conditions of DEQ-AQD Permit to Install (PTI) No. 42-15B.

**Facility Site Description**

The Magna facility is an automotive lighting manufacturer that operates in a 156,000 square foot building located on a 30 acre parcel on the north side of Port Street about 0.4 miles east of Beck Road in Plymouth Township. The building was formerly owned and operated by Johnson Controls. Magna purchased the building in 2014 and began operations at the site in 2015.

The Magna facility is located in the Plymouth Corporate Park, Metro West Technology Park, which consists of various commercial and light industrial properties stretching along Post Street east of Beck Road, and north of the M-14 freeway. The area bounded by M-14 to the south, 5 Mile Road to the north, Sheldon Road to the east and Ridge Road to the west is occupied by similar commercial/industrial parks. Some of the neighboring businesses to Magna include a McLane Foodservice distribution facility to the west, and a Plymouth Township Division of Public Services office and supply facility to the south. The northern and eastern portions of Magna's parcel is undeveloped and wooded.

The closest residential areas to the Magna facility are located on the south side of M-14. The closest residences are located approximately 1/2 mile from the facility on the south side of M-14.

**Facility Operations**

The Magna facility in Plymouth produces automotive headlamp and taillamp assemblies. The Magna facility is part of Magna International, Inc., which is based in Ontario, Canada. The Plymouth facility operates as part of Magna Lighting Group, a division of Magna International which is headquartered in Newmarket, Ontario. There are Magna Lighting facilities in three locations, one each in Canada (Belleville, Ontario), Mexico (Matamoros), and the U.S. (Plymouth). I was told during the site visit that the Plymouth facility is considered the hub of the Lighting facilities.

The production operations at the facility consist of molding, coating, and assembly operations. The molding operation consist of 14 plastic injection molding presses that produce headlight and taillight lenses and housing frames for automotive lighting fixtures for two General Motors sport utility vehicles, the Traverse and the Acadia. The molded parts are conditioned in electrically heated annealing ovens. Mold release and mold cleaners are applied to the molds using aerosol cans, which are recycled on site.

The coating operation consists of two coating application lines - an anti-fog coating application line, in which the inside/interior surface of the headlight and taillight lenses receive a coating that prevents condensation from forming; and a hardcoat application line, in which a protective coating is applied to the exterior surface of the headlight lens to provide protection from ultraviolet light degradation. Each of these coating lines has an electric cure oven in which the coated parts are cured. The housing frames that are produced in the molding process that are to be part of the headlight assembly are coated in a vacuum metalizing chamber with a silicone-based fluid. This process does not involve VOC containing materials. The facility requested and received a permit modification in 2016 to allow the facility to reclaim paint solids from the hardcoat application line. Coating overspray is captured by the facility, and the collected paint solids were sent offsite for recovery and disposal. The facility now recycles the captured paint solids from the overspray by dissolving them in isopropyl alcohol (IPA) for reuse/reapplication. The paint solids recycling project has resulted in Magna using 70% reclaimed coating and 30% virgin coating in the hardcoat application line.

The assembly operation involves assembling the headlight and taillight fixtures; the headlight and taillight lenses are attached to their respective headlight and taillight housings. The fixtures are assembled with screws and a bonding adhesive.

From the perspective of air quality regulations, the following is a listing of the process equipment that is included in Magna's DEQ-AQD permit:

- EUMOLDING – 14 plastic injection molding lines that are used to produce headlight and taillight lenses and automotive lighting fixture housing frames.
- EUANTI-FOG – a coating line that applies a coating to the inside/interior surface headlight and taillight lenses, and consists of a spray booth with a single robotic HVLP applicator and an electric cure oven.
- EUHARDCOAT – a coating line that applies a coating to the exterior surface of headlights lenses, and consists of a spray booth with a single robotic applicator and an electric infrared cure oven.
- EUFIREPUMP – a 142 kW diesel-fired emergency engine that was manufactured in 2014.

**Inspection Narrative**

I arrived at the facility at 9:35am. I entered the main lobby, where I was met by Garry Bucholz. After signing in and receiving a visitor's pass, Garry and I walked to the office area of the facility, and we sat down in the area of Garry's desk.

We started the site visit by discussing the facility. Garry told me that Magna has operated at the Plymouth location for 3 years. He told me that Magna purchased the building and property from Johnson Controls in 2014, and they began operating at the facility in 2015. He briefly described the corporate structure of Magna, and where the Plymouth facility is located within the corporation. He mentioned that the Plymouth location of one of three locations in Magna's Lighting Division, and that the Plymouth facility is the hub for the Lighting Division. Garry told me that Magna develops the entire lighting component, not just the outer coverings. We discussed the typical hours of operation of the facility. Garry told me that the facility currently employs about 400 people. The assembly portion of the facility operates 3 shifts, Monday through Friday. The molding and coating portions of the facility are currently operating 3 shifts, 6 days per week, and starting at the end of August, there could be some weeks with 7 days of operation.

We then started going over the facility's permit (PTI No. 42-15B), and we discussed the facility's compliance status with the terms and conditions of the permit. Garry told me that last year, Magna performed an internal compliance audit of the Plymouth facility and checked how the facility is tracking compliance with their permits. Garry and I went over the Emission Units and Flexible Groups in the PTI, and Garry described how the facility tracks and demonstrates compliance with the permit conditions. Garry showed me various records that the facility keeps to track compliance, and he made copies of several of them for me to take as part of my compliance review.

After concluding our permit discussion and records review, we began a walkthrough of the facility at about 10:35am. We started in the injection molding area. Garry described how automotive lighting housings and lenses are molded by the injection molding machines. We climbed to a mezzanine level platform that overlooks the molding machines, and we watched a couple of the injection molding machines at work. Garry showed me the aerosol can recycling area along the south wall of the molding area, and he explained the facility's procedures for this area. We then looked at the area where the resin material that is used in the molding machines is prepared.

As we walked to the coating lines, we stopped at looked at the facility's tool repair area. There is a Safety Kleen managed cleaning unit in this area. Garry told me that the Safety Kleen material that is used does not contain HAPs, and that Safety Kleen handles the additions and removals of cleaning material from the unit. The cleaning unit is affixed with a label instructing staff to close the lid on the unit.

We walked through the Anti-Fog coating line, then the Hard Coat coating line. Then, we walked through the assembly area where the lighting fixtures are assembled. We watched as the various components of the completed lighting fixture went through different workstations in which some parts were fastened with screws, and others were fastened using an automatically applied bonding adhesive.

Garry and I walked to the east end of the facility and he showed me the facility's waste and recycle area. Waste materials are kept in labeled, sealed drums awaiting offsite disposal. There was a collection of universal waste (lamps, batteries).

After walking through the facility, we returned to the main lobby. After a brief conversation summarizing the site visit, I left the facility at 11:25am.

## Permits/Regulations/Orders/Other

**Permits**
The Magna facility currently has an active DEQ-AQD Permit to Install (PTI), PTI No. 42-15B, that was approved on August 16, 2016. This permit covers the operation of 14 plastic injection molding presses, two coating lines, and a diesel-fired emergency engine.

The following provides a description of the Magna facility's compliance with the Special Conditions put forth by Permit to Install No. 42-15B.

***EUMOLDING***

I. Emission Limits

Special Condition (SC) I.1 limits the VOC emissions from the injection molding presses to 2 tons per year of VOC, based on a 12-month rolling time period. Garry provided me records during the site visit, including a spreadsheet titled "12 Month Rolling Total Emissions Data". This sheet provides the monthly VOC emission totals starting in August 2015 (when the facility began operations), and the 12 month rolling totals for each month. This spreadsheet shows that for June 2018, the 12 month rolling VOC emissions were 0.3273 tons. The highest reported 12 month rolling VOC emission total since the facility began operating was 0.5455 tpy in February 2017. A copy of the spreadsheet is attached to this report. Compliance.

II. Material Limits

There are no material limits put forth for this Emission Unit in this PTI.

III. Process/Operational Restrictions

SC III.1 requires that the facility capture all waste mold release, cleaner and degreaser agent, store them in

closed containers and dispose of them in an acceptable manner. Magna uses aerosol cans to apply these agents. The has an on-site aerosol can recycling process. Along the wall in front of the molding presses is an aerosol can puncture unit that consists of two drums that are closed to the in-plant environment. One of the drums collects any remaining material in the cans when they are crushed, and the other drum collects the empty cans. The aerosol can collection system is equipped with a carbon filter, and the filter is equipped with a breakthrough monitor. The liquid in the one drum is collected, and the crushed, emptied cans are recycled. At the end of the month, the number of cans recycled is counted. The facility is in compliance with the requirements of this condition.

IV. Design/Equipment Parameters

SC IV.1 requires that EUMOLDING be equipped with HVLP applicators or comparable technology, or that hand-held aerosol cans and wipes be used. Magna uses hand-held aerosol cans to apply mold release and cleaners. I was told during the site visit that the facility is using a brown paper substrate in the molds to protect the molds, and to use less mold release. Compliance.

V. Testing/Sampling

There are no testing/sampling requirements in the PTI for EUMOLDING.

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions (VI.1 through VI.3) in this section. Per SC VI.1, Magna maintains the required records in the required timeframes.

SC VI.2 requires that the facility maintain a current listing of the chemical composition of each mold release from the manufacturer. Garry showed me all of this information, in the form of Safety Data Sheets (SDS), for the materials used in association with EUMOLDING. Garry provided me with copies of the SDS for the materials that have the highest volume/usage – CRC Brakleen Brake Parts Cleaner and Slide Mold Cleaner. The SDS for these two materials is attached to this report for reference.

SC VI.3 requires that monthly records be kept for the amount of mold release, cleaner and degreaser agent used, the VOC content of these materials, the VOC mass emissions, and the 12 month rolling VOC emissions. Garry provided me with a copy of a recordkeeping spreadsheet titled "Emission Estimates for EUMOLDING" for June 2018 which presents the amount of mold release and mold cleaner used, the VOC content of the material, and the monthly VOC emissions from the use of each of these materials. A copy of this spreadsheet is attached to this report. The 12 month rolling VOC emissions are found in the spreadsheet referenced in the discussion for SC I.1.

VII. Reporting

There are no reporting requirements put forth in this PTI.

VIII. Stack/Vent Restrictions

There are no stack parameters specified in the PTI for EUMOLDING.

IX. Other Requirements

There are no conditions in this section of the PTI.

***EUFIREPUMP***

I. Emission Limits

Special Conditions (SC) I.1 through I.3 limit emissions of NMHC+NOx, CO and PM from the fire pump engine in accordance with Table 4 of 40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). The initial PTI application for the facility (for PTI No. 42-15) includes a description of the fire pump engine (it is described as a 177 kW Clarke Fire Pump with a John Deere diesel fired engine), and a copy of the engine specification sheet for the engine. The engine is classified as an EPA certified engine, and the specification sheet provides certified emissions information – HC+NOx = 3.8 g/kW-hr, CO = 1.2 g/kW-hr, and PM = 0.13 g/kW-hr. The manufacturer certified emission numbers are in compliance with the permitted limits. A copy of the specification sheet is attached to this report.

II. Material Limits

SC II.1 limits the facility to only firing diesel fuel in the fire pump having a maximum sulfur content of 15 ppm and a minimum Cetane index of 40. Magna samples every load of diesel fuel that is received at the facility, and they contract with Paragon Laboratories to have the fuel sampled. Garry provided me with a copy of the analysis that was performed in March 2018 for the last load of fuel that was received at the facility. The analysis provided a sulfur content of 5.5 ppm and a Cetane number of 50.2. A copy of the fuel analysis is attached to this report for reference.

III. Process/Operational Restrictions

SCs III.1 and 2 put forth monthly and 12 month rolling usage/hours restrictions on the engine. Garry showed me the monthly and 12 month rolling usage records that the facility has maintained since August 2015. These records tabulate the maintenance/test hours, the non-emergency hours, and the emergency use hours for each month, the total hours of usage for each month, and the 12-month rolling usage. A copy of the records is attached to this report. The facility is in compliance with the requirements of these conditions.

The facility is in compliance with SC III.3. The engine is a certified engine, and Magna operates and maintains the engine in accordance with the manufacturer's emission-related instructions.

SC III.4 is not applicable as the fire pump engine is a certified engine that is operated in a certified manner.

IV. Design/Equipment Parameters

The facility is in compliance with SCs IV.1 and 2. The engine is equipped with a non-resettable hour's meter, and the facility maintains the manufacturer's certification for the engine that includes the power rating of the engine.

V. Testing/Sampling

The facility meets the testing requirements in SC V.1 by having a certified engine, and by operating the engine in a certified manner.

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions (VI.1 through VI.4) in this section. Per SC VI.1, Magna maintains the required records in the required timeframes.

SC VI.2 requires that the facility maintain records of manufacturer certification documentation indicating that the fire pump meets the emission standards in Subpart IIII, and, if the engine becomes uncertified, the facility must keep records of a maintenance plan and associated maintenance activities. There is no indication that the fire pump engine has become uncertified, and the facility maintains records of the manufacturer certification documents. In addition, the facility has the manufacturer recommended maintenance inspection performed, and an engine test performed to establish a performance curve. Garry provided me with copies of the maintenance test reports for the last two years, the last maintenance test being performed on May 22, 2018. Copies of these two reports are attached to this report for reference.

The facility maintains engine usage/hours of operation records, on a monthly and 12 month rolling time period basis, in compliance with the requirements of SC VI.3. Magna also maintains records of fuel analyses for each delivery of diesel fuel to the facility, in compliance with the requirements of SC VI.4.

VII. Reporting

SC VII.1 requires that Magna submit a notification to DEQ-AQD that specifies whether the fire pump will be operated in a certified manner. Magna submitted correspondence dated April 6, 2016 stating that the fire pump will be operated in a certified manner. SC VII.2 is not applicable as the engine has not been operated for the purpose of contracted emergency power generation.

VIII. Stack/Vent Restrictions

SC VIII.1 puts forth a stack parameter of a minimum height of 1 foot above grade. The stack parameter was not verified during this site visit.

IX. Other Requirements

The facility appears to be in compliance with the applicable provisions of 40 CFR Part 60 Subpart IIII.

***FGCOATING***

This Flexible Group puts forth the permit special conditions for the EUANTI-FOG and EUHARDCOAT Emission Units.

I. Emission Limits

Special Conditions (SC) I.1 limits the VOC emissions from the two coating lines to 24.6 tons per year of VOC, based on a 12-month rolling time period. Garry provided me records during the site visit, including a spreadsheet titled "12 Month Rolling Total Emissions Data". This sheet provides the monthly VOC emission totals starting in August 2015 (when the facility began operations), and the 12 month rolling totals for each month. This spreadsheet shows that for June 2018, the 12 month rolling VOC emissions associated with FGCOATING were 8.9277 tons. The June 2018 total is the highest reported 12 month rolling VOC emission total since the facility began operating and keeping records. A copy of the spreadsheet is attached to this report. Compliance.

II. Material Limits

There are no material limits put forth for this Flexible Group in this PTI.

III. Process/Operational Restrictions

SC III.1 requires that the facility capture all waste materials and store them in closed containers, and dispose of waste materials in an acceptable manner. During the site visit, Garry explained that the waste anti-fog coating comes in 5 gallon buckets, while the waste hardcoat comes in 55 gallon drums. Recall that the overspray from the hardcoat line is captured to reclaim the paint solids, which are recycled for reuse and reapplication. The coating materials are mixed and have a set cure time, so they must be applied within a week. The coating that is left at the end of the week is collected and placed in a hazardous waste drum that has a flame-arrested flume that is closed to the ambient air. The waste paint is collected and taken offsite at the end of the month. Garry told me that the facility is classified as a conditionally exempt small quantity generator (CESQG).

SC III.2 requires that spent filters be disposed of in a responsible manner. The facility collects the spent filters, as well as rags, and stores them in a closed container. The collected material is collected and taken offsite at the end of the month, and it is sent to a waste to energy facility out of state.

SC III.3 requires that VOC and HAP containing materials must be handled to minimize air emissions. The facility mixes the coatings in a chemical dispensing room (they refer to it as a material mix closet), and the coating application is performed in enclosed booths.

SC III.4 addresses the capture of the hardcoat material to recycle the paint solids. Magna is using IPA to recycle the coating solids, and is in compliance with this condition.

IV. Design/Equipment Parameters

The facility is in compliance with SC IV.1; whenever the coating lines are used, a three-stage filter system is in operation to treat the booth air. Garry told me that the facility has a preventative maintenance plan for the booths and three-stage filter systems.

SC IV.2 requires that FGCOATING be equipped with HVLP applicators or comparable technology, and that for HVLP applicators, the facility keep test caps for pressure testing. The facility utilized HVLP applicators, and test caps are tested quarterly.

V. Testing/Sampling

SC V.1 requires that the facility maintain Method 24 information that demonstrates the VOC content, water content and density of the coating materials. Garry described to me how RTI Laboratories performs the Method 24 testing for the facility at least once per year (testing was done twice in 2017). Garry provided me with copies of the two Method 24 test reports from 2017, as well as the SDS for the hardcoat and the anti-fog coating. This information is attached to this report for reference.

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions (VI.1 through VI.3) in this section. Per SC VI.1, Magna maintains the required records in the required timeframes.

SC VI.2 requires that the facility maintain a current listing of the chemical composition of each coating-related material. Garry showed me all of this information, in the form of Safety Data Sheets (SDS), for the materials used in association with FGCOATING. Garry provided me with copies of the SDS for the coating materials, which is attached to this report.

SC VI.3 requires that daily records be kept for the amount of coating and associated materials used, the VOC content of these materials, the monthly VOC mass emissions, and the 12 month rolling VOC emissions. One of the spreadsheets that Garry provided me with, titled "Emission Estimates for FGCOATING", provides daily coating usage records for June 2018. This spreadsheet presents the amount of coating and associated materials used, the VOC content of the materials, and the monthly VOC emissions. The "12 Month Rolling Total Emissions Data" spreadsheet presents the monthly and 12 month rolling VOC emissions for FGCOATING.

VII. Reporting

There are no reporting requirements put forth in this PTI.

VIII. Stack/Vent Restrictions

The stack parameters specified in the PTI for FGCOATING were not verified during the site visit.

IX. Other Requirements

There are no conditions in this section of the PTI.

***FGFACILITY***

This Flexible Group puts forth source-wide HAP and VOC opt-out emission limits for the Magna facility.

I. Emission Limits

Special Conditions (SC) I.1 limits the individual HAP emissions for the facility to less than 9.0 tons per year, SC I.2 limits the aggregate HAP emissions from the facility to less than 22.5 tons per year, and SC I.3 limits the VOC emissions from all plastic parts coating lines at the facility to less than 30 tons per year. The facility's "12 Month Rolling Total Emissions Data" spreadsheet tracks the 12-month rolling time period emission totals associated with FGFACILITY. The 12 month rolling totals for June 2018 show 9.255 tons of VOC, and 0.1885 tons of total HAPs. Compliance.

II. Material Limits

There are no material limits put forth for this Flexible Group in this PTI.

III. Process/Operational Restrictions

There are no process/operational restrictions for this Flexible Group.

IV. Design/Equipment Parameters

There are no design/equipment parameter permit conditions for this Flexible Group.

V. Testing/Sampling

SC V.1 requires that the HAP content of the materials used at the facility be determined using manufacturer's formulation data. Garry showed and provided me with SDS for several of the materials that are used at the facility. The SDS include HAP content. Compliance.

SC V.2 requires that the facility maintain Method 24 information that demonstrates the VOC content, water content and density of the coating materials. As described for FGCOATINGS, Magna contracts with RTI Laboratories to performs the Method 24 testing for the facility at least once per year. I was provided with copies of the two Method 24 test reports from 2017, as well as the SDS for the hardcoat and the anti-fog coating. This information is attached to this report for reference. Compliance.

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions (VI.1 through VI.4) in this section. Per SC VI.1, Magna maintains the required records in the required timeframes.

SC VI.2 requires that the facility maintain a current listing of the chemical composition of each coating-related material. As described in the write up for FGCOATING, the facility maintains Safety Data Sheets for the materials used at the facility that contains this information.

SC VI.3 requires the monthly records be kept for the amount of HAP containing materials used at the facility, the HAP content of these materials, the individual and aggregate HAP mass emissions, and the 12-month rolling individual and aggregate HAP emissions. Similarly, SC VI.4 requires that daily records be kept for the amount of VOC containing coatings used, the VOC content of these materials, the monthly VOC mass emissions, and the 12 month rolling VOC emissions. As described in the discussion for FGCOATING, this information is presented in two recordkeeping spreadsheets that are maintained by the facility - one titled "Emission Estimates for FGCOATING", and one titled "12 Month Rolling Total Emissions Data".

VII. Reporting

There are no reporting requirements put forth for this Flexible Group in the PTI.

VIII. Stack/Vent Restrictions

There are no stack parameters specified in the PTI for FGFACILITY.

IX. Other Requirements

There are no conditions in this section of the PTI.

**Regulations**
The terms and conditions of PTI NO. 42-15B serve to limit potential emissions of VOC and HAPs to below major source thresholds. For the purposes of HAP emissions, the Magna facility is an area source. Combustion related emissions from the facility are relatively small, well below major source thresholds.

As mentioned previously in this report, the fire pump engine that is addressed in the facility's PTI as EUFIREPUMP is subject to 40 CFR Part 60, Subpart IIII.

**Compliance Determination**

Based upon the results of the July 20, 2018 site visit and a review of the facility's compliance records, the Magna facility in Plymouth Township appears to be **in compliance** with applicable rules and regulations, including with the terms and conditions of Permit to Install No. 42-15B.

Attachments to this report: copies of recordkeeping spreadsheets that are maintained by the facility to track required recordkeeping parameters for EUMOLDING, EUFIREPUMP, FGCOATING and FGFACILITY; Safety Data Sheets for two of the materials that are used in association with EUMOLDING; the specification sheet for the fire pump engine; a copy of the most recent analysis of the diesel fuel that is used in the fire pump engine; copies of the two most recent maintenance inspection reports for the fire pump engine; copies of two Method 24 analysis reports for the coating materials used in FGCOATING, and copies of the SDS sheets for the coatings.

NAME Steve Wes DATE 9/24/18 SUPERVISOR JK