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

A449340150

FACILITY: Valassis Manufacturing Company		SRN / ID: A4493
LOCATION: 35955 SCHOOLCRAFT RD, LIVONIA		DISTRICT: Detroit
CITY: LIVONIA		COUNTY: WAYNE
CONTACT: Kalena Livingston , Plant Engineer		ACTIVITY DATE: 06/02/2017
STAFF: Stephen Weis	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Compliance inspection of the Valassis Manufacturing Company facility in Livonia. The Valassis facility is scheduled for inspection in FY 2017.		
RESOLVED COMPLAINTS:		

Location:

Valassis Manufacturing Company (SRN A4493)
Anderson Printing Division
35955 Schoolcraft Road
Livonia 48150

Date of Activity:

Friday, June 2, 2017

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
KaLena Livingston, Engineering Manager, Parts/Purchasing, Valassis Anderson Printing Division
Jeff Gilmour, Senior Manager, Technical Services, Valassis Anderson Printing Division

Purpose of Activity

A self-initiated inspection of the Valassis Manufacturing Company - Anderson Printing Division facility (hereinafter "Valassis", or "Valassis facility") was conducted on Friday, June 2, 2017. The Valassis facility was on my list of sources targeted for an inspection during FY 2017. The purpose of this inspection was to determine compliance of operations at the Valassis facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control), applicable Federal standards, and any applicable permits. The facility is currently subject to the terms and conditions of DEQ-AQD Permit to Install No. 249-06B.

Facility Description

The Valassis facility is located on the south side of Schoolcraft Road (accessible via the eastbound lanes of Schoolcraft) approximately ¼ mile east of Levan Road. The area around the facility on the south side of Schoolcraft Road consists of a mix of commercial, light industrial and industrial properties. Much of the land in Livonia between Schoolcraft Road/Interstate 96 and Plymouth Road is used for these purposes. The area on the north side of Schoolcraft Road is a residential area, with the closest residences located approximately 150 yards to the north of Valassis' north property line.

Valassis Manufacturing Company, formerly known as Valassis Communications, Inc., provides media and marketing services. Valassis was sold in 2014, and now operates as a private company and wholly-owned subsidiary of Harland Clarke Holdings Corp. The company is headquartered in Livonia, Michigan. Valassis produces direct mail, newspaper inserts and digital advertising. According to the company's website (www.valassis.com), Valassis advertising products reach 100 million households per week, including 9 out of 10 households by mail each week, and the company has a network of 58,000 national, regional and local advertisers.

The Valassis Anderson Printing Division facility in Livonia is one of Valassis' manufacturing plants. The facility prints direct mail advertisements, coupons and newspaper inserts. The printing is done via six offset lithographic

printing presses.

Facility Operations

The Valassis facility operates on a 24 hour per day, 7 days per week production schedule. Operations at the facility are typically scheduled to be down for 9 holidays throughout the year, and during preventative maintenance activities associated with the regenerative thermal oxidizer. I was told during the site visit that there are currently around 200 employees at the facility.

As mentioned in the last section, the Valassis facility is a production facility that prints direct mail advertisements, coupons and newspaper inserts. One of the Valassis product lines, Red Plum, is a sheet that wraps around other coupons and advertisements as a part of direct mailings. I was told during the site visit that 80% of the Red Plum sheets that are mailed around the United States are printed at the Valassis Livonia facility. After printing, the sheets are sent to Valassis' 16 shared mail distribution facilities around the country.

The printing at the Valassis facility takes place in six printing presses. The operation of the printing presses is regulated by the terms and conditions of DEQ-AQD Permit to Install (PTI) No. 249-06B, which was issued on July 13, 2016. This permit was issued to address the installation of a new printing press at the facility. The press, a Goss Sunday unit, was moved to the Livonia location from the Valassis plant in Wichita, Kansas. The PTI includes a listing of all of the printing presses that is summarized below.

- EU-HEIDELBERG-01 - This is a Heidelberg Harris M600 printing press that is referred to at the facility as Press #12. It is a heatset web fed offset lithographic printing press with a 38 inch web width, and utilizes 6 colors. The press was installed on April 1, 1998
- EU-HEIDELBERG-02 - This is a Heidelberg Harris M600 printing press that is referred to at the facility as Press #15. It is a heatset web fed offset lithographic printing press with a 38 inch web width, and utilizes 6 colors. The press was installed on September 1, 1994.
- EU-HEIDELBERG-03 - This is a Heidelberg Harris N9000D printing press that is referred to at the facility as Press #17. It is a heatset web fed offset lithographic printing press with a 75 inch web width, and utilizes 4 colors. The press was installed on March 1, 1989.
- EU-GOSS-02 - This is a Goss Sunday 2000 printing press that is referred to at the facility as Press #16. It is a heatset web fed offset lithographic printing press with a 57 inch web width, and utilizes 4 colors. The press was installed on February 1, 2007.
- EU-GOSS-03 - This is a Goss Sunday 2000/24 printing press that is referred to at the facility as Press #13. It is a heatset web fed offset lithographic printing press with a 57 inch web width, and utilizes 4 colors. The press was installed on April 1, 2005.
- EU-GOSS-04 - This is the newest printing press at the facility, and was moved to the facility from the Valassis facility in Wichita. The unit is a Goss Sunday 2000/24 printing press that is referred to at the facility as Press #11. It is a heatset web fed offset lithographic printing press with a 57 inch web width, and utilizes 6 colors. I was told during the site visit that the press was installed at the Livonia facility in the Fall of 2016.

I was told during the site visit that EU-HEIDELBERG-03 has been decommissioned.

All of the printing presses exhaust to a common regenerative thermal oxidizer (RTO) to control VOC emissions from the printing process. The RTO is a Megtec Cleanswitch RTO System, and it operates outside on the east side of the building. The RTO was installed in the Fall of 2006, replacing another RTO. PTI No. 249-06 was issued in part to address the installation and operation of the new RTO. The RTO discharges to the ambient air 50 feet above grade.

The printing process involves roll coating ink onto a paper substrate in the six printing presses. The presses utilize various inks, fountain solutions and cleaners during the printing process. Paper is loaded into the printing presses and sent via conveyerized rollers into the press. During the site visit, I was told that the facility uses one 2,500 pound roll of paper per hour, and that there are 10 to 12 million pounds of paper inventoried on site. As the paper is spooled through the press, it comes in contact with a printing plate. As it was explained to me, printing

plates arrive at the facility with a polymer coating. Each plate goes to an "imager", which laser etches an image on the plate, and hardens a portion of the polymer. Ink, fountain solution and water are applied to the plate. In the places where the polymer coating on the plate hardened, ink sticks to the surface, while water does not. In the other portions of the plate, fountain solution and water will stick, but ink will not. This defines the image, which is transferred from the plate to the blanket of paper for coating.

After the paper has been coated, it is run through a dryer to remove solvents and water from the paper. The emissions from the dryers associated with the six presses are vented to the RTO to abate the volatiles that have been removed from the paper. After running through the dryers, the printed paper is run through chilled rollers to lower the temperature of the paper. Once cooled, the printed paper is then sent for final processing – it is cut, sliced or folded to customer specifications, after which it is packaged for off-site shipment.

The plant and office areas of the facility are heated by means of permit exempt unit heaters (60,000 BTU/hour), and building HVAC systems. There are also three boilers at the facility. Two of the boilers are used to provide building heat. They are both Ajax model WGH900S units, with a maximum rated heat input capacity of 900,000 BTU/hour; they were installed in 1985. The third boiler is located in the facility's employee fitness center, and it is used to provide steam heat for the hot tub. The unit is a Lattner model, rated at 255,000 BTU/hour, and installed in 2007.

Inspection Narrative

I arrived at the facility at 1:05pm. I checked in at the main entrance, and I was met by KaLena Livingston. She led me to a conference room in the office area of the facility, where we were met by Jeff Gilmour.

We began the site visit by talking about the background of the facility. We talked about the issuance of PTI No. 249-06B, and the installation of the new Goss printing press. I was told that the printing press was moved to the facility from Valassis' Wichita, KS facility. I was also told that the printing press designated as EU-HEILDELBERG-03 has been decommissioned.

Jeff provided me with the operating schedule for the facility, and the number of employees. We also talked about the products produced at the facility. Jeff and KaLena then described the printing process to me, including how the printing plates are etched, and how the image is transferred from the plate to the paper.

We then discussed the terms and conditions of the PTI, and how the facility demonstrates compliance. We went through the conditions in the EU-GOSS-04 Emission Unit table, and the conditions in the FG00FFSETLITHO Flexible Group, which addresses the other printing presses. I looked at records, and I was provided with some copies of information. The Valassis facility's compliance with the terms and conditions of PTI No. 249-06B is discussed in the next section of this report. While discussing the PTI, we also discussed some questions that I had regarding the 2016 MAERS report for the facility, which we were able to resolve.

After discussing the PTI, we then walked around the facility to see the process. We began by walking out to the printing press area. Jeff and I walked along one of the presses while he described the various processes that were occurring. When we arrived at the end of the press, I observed the printed paper roll being cut to produce the final product (in this case a direct mail coupon). As we walked back towards the front of the presses, Jeff pointed out the paper rolls, and he described the on-site inventory. There were many large rolls of paper stacked in the north part of the processing part of the building. Jeff told me that there is typically 10 to 12 million pounds of paper kept on site. He showed me the numerous totes of ink and fountain solution located adjacent to the paper rolls. I was told that the facility uses one tote of each color of ink per day, with each tote holding 2,500 pounds of ink.

We then walked outside and looked at the RTO. There are two chambers in the RTO, A & B. I was told that when more printing presses are operating, sending more VOC laden air to the RTO, the unit uses less gas as the VOC, itself becomes a fuel, supplanting some of the gas. The RTO manufacturer performs preventative maintenance on the unit once a year. We took a look at the control panel inside of the small control room attached to the RTO. I took a picture of the temperature read out, which showed a combustion chamber temperature of 1558° F. A print out of the picture is attached to this report. Back in the building, I was shown a data logger for the RTO that is located just inside of the building, through which one is able to access some information about the RTO from the data logger. The unit has operated for 92,908 hours since it was installed, and for about 16,000 of those hours, natural gas was not needed to maintain temperature.

We then walked around the facility to take a look at the boilers. I took a look at all three, and I wrote down the information from the boiler plates. Based on the maximum rated heat input capacities, all three units are exempt from DEQ-AQD permitting requirements. We then walked back to the conference room to close out the site visit.

I left the facility at 2:55pm.

Permits/Orders/Regulations

Permits

As previously mentioned in this report, the Valassis facility is subject to the terms and conditions of **PTI No. 249-06B**, which was issued on July 13, 2016. This permit was applied for and issued to address the installation of a new printing press at the facility.

The following is a summary of the compliance status of the operations at the Valassis facility with the terms and conditions of PTI No. 249-06B.

For EU-GOSS-04

I. Emission Limits

Special Condition (SC) I.1 – **Compliance**. The facility keeps records of the amount of materials (i.e. inks, solvents, fountain solutions) used at the facility, and the corresponding VOC emissions. During my conversation with the facility regarding their 2016 MAERS submittal, we discussed the VOC records that the facility keeps, and KaLena and Jeff went over the inputs to their internal spreadsheet. For the purposes of this site visit, I decided to use the information that was submitted by Valassis as supplemental information to their MAERS submittal to help in demonstrating compliance. This information shows that this Emission Unit, identified as Press 11, emitted 1,871.36 lbs of VOC in 2016. Recall that this press was installed in the Fall of 2016.

II. Material Limits

SC II.1 limits the VOC content of the fountain solution that is used in the printing presses to 5.0% by weight, with a limitation that no alcohol can be used. Valassis tracks this information via Safety Data Sheets for each material and other manufacturer's data. The supplemental information that was included with the facility's 2016 MAERS report provides that the Method 24 VOC content of the etch solution (aka fountain solution) was 0.83 pounds of VOC per gallon. I was told that there are no alcohols in the fountain solution. **Compliance**.

Process/Operational Restrictions

SC III.1 and III.2 – **Compliance**. All unused/waste liquid materials are directed to 55 gallon drums. For inks, the ink supplier picks the unused/waste ink up to reprocess/re-use it. Rags (shop towels) are kept in bins, and an outside company picks them up for disposal. I was told that as drums are filled, the lid is clamped on it until the drums are taken offsite. I was told during the site visit that the heat set materials that are used at Valassis have a low evaporation rate. Cold set materials have a higher evaporation rate, and these types of materials are not used at this facility.

SC III.3 – **Compliance**. The cleaning solvents that are used at the facility have vapor pressures less than 10 mmHg.

SC III.4 – The facility maintains a Malfunction Abatement Plan (MAP). KaLena and Jeff described how the plan that the facility follows addresses the requirements in paragraphs a through d of this SC. I was told that the old RTO at the facility had a bypass key, which would allow emissions to bypass the control equipment in case of a malfunction. The current CleanSwitch RTO unit does not have a bypass option. If there is any kind of malfunction of the RTO, the presses are automatically shut down. **Compliance**.

IV. Design/Equipment Parameters

SC IV.1 – **Compliance**. Valassis only operates the press when its associated dryer is installed and maintained properly. The SC goes on to require that satisfactory operation of the dryers requires that they operate at negative pressure. During the site visit, I was told that there are two types of dryers used at the facility – Megtec

and Connie Web. The Megtec dryers operate at -0.2 inches pressure, and the Connie Web units operated at -0.5 inches pressure. For each dryer, the dryer box pressure is monitored every 15 minutes that the dryer is in operation. If a loss in negative pressure is detected, the dryer is programmed to shut its associated printing press down and cease operation.

SC IV.2 – **Compliance.** Valassis stated that they only operate the printing press when the RTO is operational. As mentioned previously, if there is a malfunction of the RTO, the press is automatically shut down.

SC IV.3 – **Compliance.** There is an Arjay Automation temperature monitoring device that is built into the CleanSwitch RTO unit. I was told that the temperature monitoring device takes continuous readings. I observed the temperature monitor during my site visit. I observed a temperature of 1558° F. A copy of a picture that I took of the readout is attached to this report.

V. Testing/Sampling

SC V.1 – **Compliance.** Valassis verifies the VOC content of materials. Their material supplier, Flint Ink, tracks the inventory of materials at the facility, and they provide Method 24 data for Valassis.

SC V.2 – **Compliance.** Valassis last had the VOC destruction efficiency of the RTO tested on July 7, 2015. A copy of the executive summary page from the test report is attached to this report for reference. The test results show a three test average of 99.1% destruction efficiency.

VI. Monitoring/Recordkeeping

SC VI.1 – **Compliance.** The facility completes the required calculations on a monthly basis.

SC VI.2 – **Compliance.** Valassis monitors and records the temperature in the combustion chamber of the RTO.

SC VI.3 – **Compliance.** The facility maintains current listings of the manufacturer's information of all the materials used as part of the printing process.

SC VI.4 – **Compliance.** The facility demonstrated that the records in paragraphs a through d are being kept. The information is kept in internal spreadsheets. KaLena showed me examples of the records that are being kept relating to the SC.

SV VI.5 – **Compliance.** I was told that Valassis works with the material supplied to calculate the VOC content of the fountain solution/etch solution.

SC VI.6 – **Compliance.** The facility keeps records of the air pressure within the dryers. I was provided with some examples of the records that are being kept for the printing press #12 and #15 dryers. This information is attached to this report for reference.

VII. Reporting

The facility told me that they notified AQD staff when the installation of the relocated Goss printing press (press #11) was complete.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit.

IX. Other Requirements

Compliance. All of the printing presses and associated equipment at the facility is labeled.

For FG-OFFSETLITHO

This Flexible Group addresses the permit requirements for the other printing presses at the facility – EU-Heidelberg-01, EU-Heidelberg-02, EU-Heidelberg-03, EU-Goss-02 and EU-Goss-03.

I. Emission Limits

Special Condition (SC) I.1 – **Compliance.** The facility keeps records of the amount of materials (i.e. inks,

solvents, fountain solutions) used at the facility, and the corresponding VOC emissions. As mentioned in the discussion for the facility's compliance with EU-Goss-04, I discussed the 2016 MAERS submittal with facility staff. We discussed the VOC records that the facility keeps, and KaLena and Jeff went over the inputs to their internal spreadsheet. For the purposes of this site visit, I decided to use the information that was submitted by Valassis as supplemental information to their MAERS submittal to help in demonstrating compliance. This information shows that the total VOC emissions reported for the facility in 2016 was 10.71 tons, and for the 5 printing presses that make up this Flexible Group, the reported VOC emissions were 9.84 tons.

II. Material Limits

SC II.1 limits the VOC content of the fountain solution that is used in the printing presses to 5.0% by weight, with a limitation that no alcohol can be used. Valassis tracks this information via Safety Data Sheets for each material and other manufacturer's data. The supplemental information that was included with the facility's 2016 MAERS report provides that the Method 24 VOC content of the etch solution (aka fountain solution) was 0.83 pounds of VOC per gallon. I was told that there are no alcohols in the fountain solution. **Compliance.**

Process/Operational Restrictions

SC III.1 and III.2 – **Compliance.** Just as was described for this same SC in EU-Goss-04, all unused/waste liquid materials are directed to 55 gallon drums. For inks, the ink supplier picks the unused/waste ink up to reprocess/re-use it. Rags (shop towels) are kept in bins, and an outside company picks them up for disposal. I was told that as drums are filled, the lid is clamped on it until the drums are taken offsite. I was told during the site visit that the heat set materials that are used at Valassis have a low evaporation rate. Cold set materials have a higher evaporation rate, and these types of materials are not used at this facility.

SC III.3 – **Compliance.** The cleaning solvents that are used at the facility have vapor pressures less than 10 mmHg.

SC III.4 – The facility maintains a Malfunction Abatement Plan (MAP). KaLena and Jeff described how the plan that the facility follows addresses the requirements in paragraphs a through d of this SC. I was told that the old RTO at the facility had a bypass key, which would allow emissions to bypass the control equipment in case of a malfunction. The current CleanSwitch RTO unit does not have a bypass option. If there is any kind of malfunction of the RTO, the presses are automatically shut down. **Compliance.**

IV. Design/Equipment Parameters

SC IV.1 – **Compliance.** Valassis only operates the presses in FG-OFFSETLITHO when the dryers associated with each press are installed and maintained properly. The SC goes on to require that satisfactory operation of the dryers requires that they operate at negative pressure. During the site visit, I was told that there are two types of dryers used at the facility – Megtec and Connie Web. The Megtec dryers operate at -0.2 inches pressure, and the Connie Web units operated at -0.5 inches pressure. For each dryer, the dryer box pressure is monitored every 15 minutes that the dryer is in operation. If a loss in negative pressure is detected, the dryer is programmed to shut its associated printing press down and cease operation.

SC IV.2 – **Compliance.** Valassis stated that they only operate the printing presses when the RTO is operational. As mentioned previously, if there is a malfunction of the RTO, the press is automatically shut down.

SC IV.3 – **Compliance.** There is an Arjay Automation temperature monitoring device that is built into the CleanSwitch RTO unit. I was told that the temperature monitoring device takes continuous readings. I observed the temperature monitor during my site visit. I observed a temperature of 1558° F. A copy of a picture that I took of the readout is attached to this report.

V. Testing/Sampling

SC V.1 – **Compliance.** Valassis verifies the VOC content of materials. Their material supplier, Flint Ink, tracks the inventory of materials at the facility, and they provide Method 24 data for Valassis.

SC V.2 – **Compliance.** Valassis last had the VOC destruction efficiency of the RTO tested on July 7, 2015 after EU-Heidelberg-03 was installed. A copy of the executive summary page from the test report is attached to this report for reference. The test results show a three test average of 99.1% destruction efficiency.

VI. Monitoring/Recordkeeping

SC VI.1 – **Compliance.** The facility completes the required calculations on a monthly basis.

SC VI.2 – **Compliance.** Valassis maintains records of the chemical composition of all materials that are used in the printing process.

SC VI.3 – **Compliance.** The facility demonstrated that the records in paragraphs a through d are being kept. The information is kept in internal spreadsheets. KaLena showed me examples of the records that are being kept relating to the SC.

SV VI.4 – **Compliance.** I was told that Valassis works with the material supplied to calculate the VOC content of the fountain solution/etch solution.

SC VI.5 – **Compliance.** The facility keeps records of the air pressure within the dryers. I was provided with some examples of the records that are being kept for the printing press # 12 and #15 dryers. This information is attached to this report for reference.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit.

IX. Other Requirements

Compliance. All of the printing presses and associated equipment at the facility is labeled.

FGFACILITY

This Flexible Group covers the entire facility, and places source-wide emission limits on hazardous air pollutants (HAPs).

Valassis staff showed me some records from their inks and cleaners. I was provided with copies of Safety Data Sheets for the roller/blanket wash materials that are used at the facility, which are attached to this report. Valassis tracks the amount of materials used at the facility, which of them contains HAPs, and they perform emission calculations. I was shown the spreadsheet that the facility maintains to track the track material usage and emission calculations, which showed that the HAP emissions are below the permitted levels.

Federal Regulations

There are no Federal regulations that are currently applicable to the Valassis facility. There are two Federal regulations at 40 CFR Part 60, Subpart QQ and Subpart FFF, that apply to rotogravure printing processes. The printing presses at the Valassis facility are lithographic printing processes, not rotogravure, so these regulations do not apply.

Compliance Determination

Based upon the results of the June 2, 2017 site visit and subsequent records review, the Valassis Manufacturing Company facility in Livonia appears to be in compliance with all of the terms and conditions of the facility's Permit to Install, as well as applicable State and Federal regulations.

Attachments to this report: information from the PTI application for PTI No. 249-06B that provides a process and emission unit description, information relating to the operating schedule for the facility, the amount and type of materials used in the printing process, and a schematic of the facility, including exhaust information; a copy of the executive summary page from the most recent RTO VOC destruction efficiency test; a printout of the dryer data for Press 12 and 15; copies of Safety Data Sheets for two of the roller and blanket washes used at the facility; a printout of a picture of the RTO temperature monitoring data display panel, taken during the site visit.

NAME Steph Weiss

DATE 9/25/17

SUPERVISOR JK