

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

N083033405

|   |                               |                           |
|---|-------------------------------|---------------------------|
| FACILITY: QG Printing II Corp.                |                               | SRN / ID: N0830           |
| LOCATION: 1321 Van Deinse Street, GREENVILLE  |                               | DISTRICT: Grand Rapids    |
| CITY: GREENVILLE                              |                               | COUNTY: MONTCALM          |
| CONTACT: Dan Nichols, Maintenance Manager     |                               | ACTIVITY DATE: 02/18/2016 |
| STAFF: Steve Lachance                         | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT  |
| SUBJECT: Scheduled Inspection for FY '016 FCE |                               |                           |
| RESOLVED COMPLAINTS:                          |                               |                           |

Steve Lachance (SL) of MDEQ-AQD conducted a scheduled inspection at the QG Printing II Corp. facility located in Greenville, Michigan on Thursday, February 18, 2016. Weather conditions upon SL's arrival in the site vicinity at about 9:45 AM were clear and sunny, about 20 degrees F, with mild but increasing southerly winds. Mild "burnt plastic" odors were noted on the roadway to the north of the facility, but these seemed normal for a printing operation in SL's experience. This area is zoned for industrial activities and no complaints against the facility have been received to date. The noted odors were of low intensity. No opacity was observed from any facility stacks. SL met with maintenance manager Mr. Dan Nichols for the inspection, starting at about 10 AM. Mr. Nichols connected Ms. Lacey Schucht, QG Regional Environmental Compliance Manager out of Sussex, Wisconsin via telephone (414-566-7614) for the duration of office discussions at the start of the inspection.

After preliminary introductions, SL shared the DEQ's "Environmental Inspections: Rights and Responsibilities" brochure. SL announced his intention to complete an air inspection, especially with respect to the recent MAERS submittal and opt-out Permit to Install (PTI) No. 598-96.

#### **FACILITY DESCRIPTION**

This printing facility uses 4-color (black, blue, red, yellow) offset color printing processes to produce TV guides, ads and other materials commonly to be used as mailers and newspaper inserts. These are web offset printers (rather than sheet-fed) that use heatset inks. (Elevated temperatures are briefly required to set the ink onto paper.) Offset printing refers to a process in which the ink adheres to a plate only in the spots necessary, then transfers that ink to a "blanket". The blanket then transfers the ink to the paper. This transfer process improves the longevity of the plates last. Blankets are washed when plates are switched.

Multiple brands of solvents are used to wash the blankets. They usually have at least two kinds of solvents, one for automatic washing, the other for hand washing.

Four colors of ink are used, each one having a "coated" and "uncoated" version, depending on the properties of the paper being printed on.

#### **EU400 - 400 Printing Line**

This is a printer controlled by a catalytic oxidizer. The "400" press line has a smaller paper width and is considered a duplex, in that it is two separate lines that can be operated independently or in tandem, with the ability to combine two separate pages into one insert. A natural gas-fired dryer provides the required temperature for the inks to set. The permit establishes 85% VOC control for this line.

#### **EUABC - A,B,C printing lines**

These are three "triplex" printing lines all controlled by one catalytic oxidizer. Any combination of the three printing lines can be in operation at any given time. A natural gas-fired dryer provides the required temperature for the inks to set. The permit establishes 95% VOC control for this line.

#### **EUDEF - D,E,F printing lines**

These are three "triplex" printing lines all controlled by one catalytic oxidizer. Any combination of the three printing lines can be in operation at any given time. A natural gas-fired dryer provides the required temperature for the inks to set. The permit establishes 95% VOC control for this line.

**FGFACILITY (EUABC, EUDEF, EU400)**

All printing press emissions are controlled by catalytic oxidizers.

**Compliance Evaluation**

All three emission units and the facility wide conditions are all addressed in opt-out PTI No. 598-96.

At the time of the inspection, EU400 and EUABC were operating; EUDEF had come down that morning in preparation of in-kind replacement of the catalytic oxidizer; see discussion, below.

**S.C. 13. Emission limits**

| Pollutant | Limit  | Limit Met | Documented value / Comments        |
|-----------|--------|-----------|------------------------------------|
| VOC       | 90 tpy | Yes       | 39 tpy as of December 2015 (MAERS) |

Comments: These emissions presume 95% and 85% control as included in the permit and retention of a stated portion of the ink VOCs within the final substrate; see discussion, below, especially with respect to recordkeeping and material VOC content.

**14. Emission limits**

|     | Pollutant | Limit    | Limit Met | Documented value / Comments                |
|-----|-----------|----------|-----------|--|
| (a) | HAP       | 9 tpy    | Yes       | 0.12 tpy (glycol ether) as of January 2016 |
| (b) | HAP       | 22.5 tpy | Yes       | 0.49 tpy as of December 2015               |

Comments: These emissions also presume 95% and 85% control; see discussion, below, especially with respect to recordkeeping and material VOC content.

**15. Emission limits -** Shall not exceed 5% opacity in 6 min avg.

Comments: No visible emissions were observed and Mr. Nichols was aware of the 6-minute averaging period for this; no visible emissions are expected as part of normal operations.

**16. Testing –** Stack testing for VOC's upon request of AQD

Comments: Historically, testing has not been required based on acceptable material use records, operational records and documented pro-active maintenance activities. The facility uses a contractor (MEGTEC) to help ensure the catalytic oxidizers are properly maintained. As part of this maintenance, the company periodically submits samples of the catalyst for testing. Every few years, as needed the media is replaced entirely. Recent inspection results (attached) identified a heat exchanger (efficiency problem; not a performance problem unless temperatures are not maintained) and the facility is currently undertaking an in-kind replacement of the oxidizer; this is allowed per exemption 285(d).

**17. Recordkeeping/Reporting/Notification –** Maintain records of inks and fountain and clean-up

Comments: Material volumes are recorded and reconciled on a monthly basis according to on-site inventories. See attached. Material Data Sheets for all requested materials were readily available. See attached for high-volume inks. Volumes and material characteristics are incorporated into Excel Spreadsheets on a monthly basis; these are the basis for required emissions records, below.

Records were current and readily available through January 2016.

Prior to the inspection, SL had familiarized himself with these records via the attachments provided in the EI2015

MAERS submittal. These appeared to be complete, however during this on-site inspection, SL attempted to validate the %VOC of the most widely-used/emitting inks. SL noted apparent substantial discrepancy between the MDS and spreadsheet %VOC. Company personnel were initially unable to deduce the source of the spreadsheet %VOC values, beyond stating that these fields were "hard keyed" and not calculated values.

SL made clear that the integrity of the records and resulting emissions estimates were based on correct %VOC values; and so continued the on-site assessment while putting this issue/these calculations temporarily aside. SL requested that further information about the origin/value of these %VOC cells (at least on an interim basis) be provided by Monday, February 22, 2016.

In a February 22 phone call with Ms Schucht and Mr. Nichols, it was stated that 40% VOC is used for all inks, and this is based on worst-case Method 24 results per the Material Data Sheets provided. The same 40% VOC content is assumed for all inks; the individual VOC cells discussed above are misleading.

On February 26, 2016, SL went back into the MAERS spreadsheets (attached) and was able to duplicate selected VOC calculations. However, SL had to use knowledge outside the spreadsheet contents (40% VOC, % ink retain in paper, % destruction efficiency allowed per line by permit) to duplicate these calculations. The spreadsheets were, in fact, misleading, but arrived at a reasonably reproducible end point. SL spoke with Ms. Schucht on this date and she agreed to "clean up" the spreadsheets (indeed, simplify them) to the point where the assumptions are clearly and accurately incorporated into the spreadsheet, allowing for easy replication by AQD.

In the end, this confusion did not affect the conclusions that the facility is complying with the emission limits stated above. Continued work by the facility/company will clean up these records and make them more understandable and maintainable.

#### **18. Recordkeeping/Reporting/Notification** – Maintain records of emissions

Comments: These records were in an acceptable format and were current and readily available, but note the discussion above pertaining to %VOC and the importance of accuracy for this value for each material used in calculating correct VOC emissions.

#### **19. Testing** – Facility must use Method 24 for raw materials or have manufacturer's formulation data with prior approval.

Comments: Based on previous inspections of the facility, it appears that actual formulation data was used to create certain MDS, while other suppliers indicated Method 24 data was used. Previous inspection documentation indicates approval of this documentation. However, the MDS originally supplied as part of this inspection indicate wide ranges of VOC, not expected for batch formulations. The facility itself has changed ownership since that 2012 inspection, and the personnel involved in the inspection process have also changed. Further review of the supplied MDS (attached) does indicate a range of VOC value based on Method 24 analyses. Further discussion with facility personnel on 2/22/16 indicated the following; Worst Case values of 40% VOC are used for all inks; and the %VOC cells on the spreadsheet are not actually used in calculating/presenting mass VOC estimates. See discussion, above.

#### **20. Process/Operational Limits** – Shall not operate unless catalytic incinerator is above 650F and operated properly (95% for ABC, DEF; 85% for 400)

Comments: As discussed with Mr. Nichols, the operating systems for the presses and oxidizers are interlocked such that printing cannot take place at temperatures below 650 F. Records support this.

#### **21. Equipment** – Permittee shall monitor and record temperature

Comments: Circle charts were readily available, annotated and reviewed at the time of the inspection.

#### **22. Process/Operational Limits** – Pressure inside dryers must be negative to prevent fugitive

Comments: Facility staff indicated printing would not take place without a fan engaged that creates negative pressure in the ovens. This is a safety feature that is hard wired/programmed in.

#### **23. Process/Operational Limits** – Preventative maintenance program for incinerators

Comments: The facility seems to have implemented a good Preventative Maintenance Plan and works in conjunction with an outside expert contractor (MEGTEC.) Regular and routine maintenance is performed by onsite staff, but most major maintenance is performed by MEGTEC, who then supplies the facility with a report. A copy of the most recent report is attached; and the facility appears to act on the recommendations of the reports (in this case, replacing the oxidizer based on heat exchange damage.)

**25. Stack/Vent Restrictions** – 36" x 26" maximum dimensions, 35' minimum height, unobstructed vertically upward

Comments: All stacks appeared to be properly sized and oriented (from ground level.)

### Miscellaneous

Label Printing (jet ink printing) can be integrated into certain of the printing lines; this incurs negligible emissions and is incorporated into MAERS.

A large paper baler was installed to address clients that require more scrap be cut from paper. The baghouse is vented internally and is maintained as part of a PM plan. It appeared to be in good working condition; the surrounding area was clean of dust. The facility is using a Rule 285(l)(vi)(C) exemption because it is vented internally and has a baghouse control.

Two cold cleaners were observed; tops were down when not in use as observed at the inspection. Each is a small Safety-Kleen unit; SL supplied DEQ's orange stickers for operational requirements of such units for possible posting near each unit.

### COMPLIANCE SUMMARY

Once the confusion about the presentation of the VOC records and emissions was addressed to SL's satisfaction (and to be verified through future inspection or MAERS review), SL concludes that the facility is in compliance with applicable air use requirements.

### Attachments:

2015 MEGTEC Catalytic Oxidizer Reports

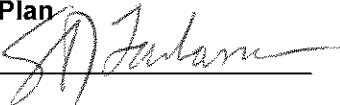
January 2016 Monthly Material Usage Memo

Safety Data Sheets for high-use Inks (Includes Method 24 VOC results)

January 2016 Usage and Emissions Records

Attachments to EI2015 MAERS Report

QG Site Plan

NAME 

DATE 2/26/15

SUPERVISOR PAB