

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

N123726057

FACILITY: GEORGIA PACIFIC CHEMICALS LLC		SRN / ID: N1237
LOCATION: 4113 W Four Mile Rd, GRAYLING		DISTRICT: Cadillac
CITY: GRAYLING		COUNTY: CRAWFORD
CONTACT: Robert Morely, Q & EA Supervisor		ACTIVITY DATE: 06/12/2014
STAFF: Caryn Owens	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Field Inspection and Records Review		
RESOLVED COMPLAINTS:		

On June 12, 2014 Caryn Owens and Rob Dickman of the DEQ-AQD inspected Georgia Pacific (N1237), located at 4113 West Four Mile Road in Grayling, Crawford County, Michigan. The purpose of the inspection was to determine compliance with permit to install (PTIs) 488-95 and 363-89C. It should be noted that PTI 363-89C is the most current PTI, and the special conditions in PTI 488-95 are covered in PTI 363-89C. DEQ was escorted by Bob Morley, the Quality & Environmental Assurance Supervisor of Georgia Pacific. An inspection brochure detailing the DEQ's inspection process was handed to Mr. Morley at the time of the inspection.

Georgia Pacific is a facility that manufactures two types of resins, phenol-formaldehyde resin and urea-formaldehyde resin. The facility is subject to NSPS Standards of Performance for volatile organic compound (VOC) emissions from the synthetic organic chemical manufacturing industry (SOCMI) air oxidation unit processes (40 CFR Part 60 Subpart III); NSPS Standards of Performance for VOC liquid storage vessels (including petroleum liquid storage vessels) for which construction, reconstruction, or modification commenced after July 23, 1984 (40 CFR Part 60 Subpart Kb), NSPS Standards of Performance for equipment leaks of VOC in the synthetic organic chemicals manufacturing industry for which construction, reconstruction, or modification commenced after January 5, 1981, and on or before November 7, 2006 (40 CFR Part 60 Subpart VV); and National Emission Standards for Hazardous Air Pollutants for chemical manufacturing area sources (40 CFR Part 63 Subpart VVVVV).

During the inspection, methanol was flowing at a rate of 19 gallons per minute which flowed to a vaporizer, then into a superheater that was at a temperature of 150°C (302°F), which flows to a converter vessel where the exit temperature was 287°C, then flows to an aftercooler which was at a temperature of 144°C. From the aftercooler, the methanol flows into three absorbers, then flows to formaldehyde storage with the product at 51% formaldehyde. During the inspection the converter vessel was at 7.4 psi, and ranged from 295°C to 342°C. The burner inlet to the catalytic oxidizer was at 615°F, and the outlet temperature was at 899°F. The change in temperature was 285°F. The production of formaldehyde is an exothermic reaction that puts off steam which is used to heat the facility. The catalytic oxidizer is changed out every 2 to 3 years, and serviced semi-annually.

The facility has a methanol storage tank outside on the southern portion of the site, which uses a condenser to control the methanol vapors, which appeared to be operating properly during the inspection. The inlet temperature of the chilled water was at 2.5°C and the outlet temperature was at 1.6°C.

The manufacturing of the resins is produced in kettles in batches. At the time of the inspection the kettles were not in operation. All the resin storage tanks are connected to a vapor recovery unit that is connected to the catalytic oxidizer. During load out of the formaldehyde, the load out has vapor recovery for the trucks or rails transporting the materials. The vapor recovery unit is connected to the catalytic oxidizer. An acid quench tank is used for emergencies at the facility.

### Compliance Evaluation

The facility has three flexible groups to incorporate the emission units. EUFORMALDEHYDE and EUMETHSTORAGE are included under FGFORMALDEHYDE. EUUREAFORMALDEHYDE and EUPHENOLFORMALDEHYDE are included in FGRESIN. All the equipment at the facility is included in FGFACILITY.

### FGFORMALDEHYDE and FGRESIN

**Emission Limits:** Emission limits for FGFORMALDEHYDE and FGRESIN are 0.04 pounds per hour (pph) for formaldehyde, 0.006 pph for fugitive formaldehyde, and 1.8pph for volatile organic compounds (VOCs).

Emission limits for EUMETHSTORAGE is 0.039 pph. The most recent performance test completed November 13, 2012, indicated the actual formaldehyde emissions were 0.004 pph tested at the high load. VOCs were 0.034 and 0.072 pph tested at the high load for formaldehyde and resin, respectively. The emissions reported during testing at the low load were less than the high load emissions.

**Process/Operational Limits:** During the field inspection, the monitoring devices seemed to be operating properly. A Leak Detection and Malfunction Abatement Plan was submitted to the DEQ on July 17, 2006. At the time of the inspection the inlet temperature of the catalytic oxidizer was 615°F, which is greater than the minimum inlet temperature of 550°F. The temperature is recorded at the inlet and outlet areas of the catalytic oxidizer on a continuous basis. The 3-hour average of the temperature was within 80% of the performance testing temperature while the plant was in operation.

**Equipment:** During the field inspection, it appeared that all the equipment was installed and operating properly. All the vapor recovery systems go through the catalytic oxidizer.

As previously stated, the inlet temperature of the catalytic oxidizer was 615°F and the outlet temperature was 899°F. The pumps, valves, connectors, pressure relief devices, and sampling connection lines are monitored monthly, and reported to the DEQ in semi-annual reports which are discussed below in more detail.

**Recordkeeping/Reporting/Notification:** Based on the records reviewed for the month of May 2014, the before and after catalyst temperatures were continuously recorded as well as the 3-hour average temperatures. The facility indicated the last two dates the catalytic oxidizer was shut down and serviced were November 13, 2013 and April 23, 2014. The thermocouples on the oxidation catalyst were last replaced on November 12, 2014, and the most recent date the methanol mass flow meter was calibrated was May 5, 2014. The DEQ reviewed a list of each VOC liquid storage tank with a capacity of 40 cubic meters or greater, which is attached.

The facility reported two low inlet temperatures of the catalytic oxidizer from May 2013 through May 2014. The occurrence was reported to the DEQ within the appropriate time limits, and corrective actions were taken.

The facility records the amount of formaldehyde and urea formaldehyde concentrate that is produced on a daily basis. The concentrates produced for the month of May 2014 are attached.

Based on observations during the field inspection, the stack heights for SVMETHVENT, SVCATINC, SVDOWTHERNVENT and SVRELIEFVENT appeared to be within the permitted stack height limits.

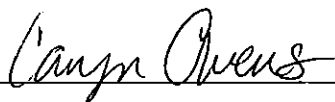
#### **FGFACILITY**

Based on the records reviewed, the individual HAPS from the facility were less than 1 ton per year between May 2013 to May 2014. The total HAPS calculated ranged between 0.48 to 0.84 tons per year from May 2013 to May 2014, which are less than the permitted limits of 9 tons per year for individual HAPs and 22.5 tons per year total HAPs, based on a 12-month rolling time period.

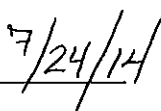
#### **Evaluation Summary:**

Based on the field inspection and records review, the facility is in compliance with PTIs 488-95 and 363-89C, and 40 CFR Part 60 Subparts III, Kb, and VV. No further actions are necessary at this time.

NAME



DATE



SUPERVISOR

