

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

B870725684

FACILITY: Springs Window Fashions, LLC		SRN / ID: B8707
LOCATION: 2669 Industrial Drive, GRAYLING		DISTRICT: Cadillac
CITY: GRAYLING		COUNTY: CRAWFORD
CONTACT: Lee Ballard , Human Resources Mgr.		ACTIVITY DATE: 05/15/2014
STAFF: Caryn Owens	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Field Inspection and Records Review		
RESOLVED COMPLAINTS:		

On Thursday May, 15, 2014, Caryn Owens of the DEQ-AQD inspected Springs Window Fashions (SRN: B8707) located at 2669 Industrial Drive in Grayling, Crawford County, Michigan. The site is located on the east side of Industrial Drive, approximately 1/2 mile south of South Down River Road (Business M-72). The field inspection and records review was an unscheduled inspection, but was conducted to determine compliance with permit to install 140-04A after hearing about a fire that was potentially located at the facility. The site is currently an opt-out source for particulate matter by taking emission limits under the threshold for a major source. An inspection brochure was not given to Springs Window Fashions at the time of the inspection.

DEQ met with Lee Ballard, the Human Resources Manager, and Brian Boehlke the Wood Production Manager, of Springs Window Fashions who escorted DEQ through the facility. The facility processes wood for window blinds and shutters. The operation consists of the wood coming onto the site, and graded and sorted. Once sorted, the wood is pre-dried in a building that typically stays at 86°F. The wood will stay in the pre-dryer for about one week to 30 days, and then it will be moved to the kilns where the temperature and humidity are closely monitored. The wood will stay in the kilns from one day up to 20 days until the moisture content of the wood is at the right specification. The kilns are steam heated from the onsite wood fired boiler. Following the kilns, the wood is transferred to the staging area for the wood working process within the main building at the site. DEQ observed the grading and sorting area, the pre-dryers, kilns, extra storage area, boiler system, and cutting and sanding areas. The site uses mostly basswood and occasionally some poplar wood.

DEQ heard about a potential fire at Springs Window Fashions, but was not sure about the date of the fire. According to Mr. Ballard and Mr. Boehlke, a fire did take place at the facility on May 10, 2013 about 10:15pm starting in a sander in EU-4 location. The fire started by built up dust accumulating and igniting from a sander. The fire quickly traveled through the duct work and spread to the baghouse and sawdust hopper. The ductwork contained a fire suppression system that was activated to control the fire, and the fire department extinguished the fire in the baghouse and hoppers upon arrival. The sander machine and duct work were not damaged from the fire. The baghouse had new bags installed, and the exterior was repainted. The area in the sander that initially caused the fire, had a new cleanout installed so this doesn't happen again. The report of the fire, and steps taken so this doesn't occur again are attached.

**COMPLIANCE EVALUATION:**

**A. EU-1, EU-3, and EU-4**

Emission units EU-1, EU-3, and EU-4 have generally the same permit requirements. The emission units consist of sawing, molding, planing, grinding, and/or sanding dried wood material. The wood working equipment is controlled by associated baghouses.

Emission limits for EU-1 are 2.4 pounds per hour, 2.2 pounds per hour for EU-3, and 1.7 pounds per hour for EU-4 particulate matter (PM)<sub>10</sub> and all three emission units have emission limits of 0.01 pounds per 1000 pounds exhaust gas for PM. The baghouses controlling EU-1, EU-3, and EU-4 appeared to be installed and operating properly.

The emission limits are monitored by the pressure drop of the baghouses. A digital read-out was installed that continuously displayed the pressure drop of each baghouse. At the time of the field inspection, the pressure drop was 1.25 inches of water column (wc) in EU-1 baghouse, 0.75 inches wc in EU-3 baghouse, and 1.2 inches wc in EU-4 baghouse.

The facility records the pressure drop on the baghouse daily during operation. DEQ reviewed the records from April 2013 to April 2014, and the pressure drop in EU-1 baghouse ranged between 0.1 and 0.9 inches wc, EU-3 ranged from 0.3 to 1.2 inches wc, and EU-4 ranged between 0.4 to 3.8 inches wc over the course of the year. DEQ observed transcription errors in the Pressure Drop Daily Record logs, Mr. Boehlke corrected the discrepancies and relayed the data to the DEQ. The DEQ explained to Springs Window Fashions that it is

necessary to retain the daily field logs the maintenance staff records for at least five years to clear up any transposition errors that may occur while entering records electronically, and be made available to the Department upon request.

The stack heights for EU-1, EU-3, and EU-4 appeared to be consistent with permitted limits for the stacks of the baghouses.

#### **B. EU-2**

This emission unit consists of three finger joiners, adhesive application, and different types of saws for the wood working processes, which is controlled by EU-2 baghouse.

Emission limits for EU-2 are 500 pounds of VOCs per year based on a 12-month rolling time period for the finger joiner portion of EU-2. Additionally, EU-2 has emission limits of 1.2 pounds per hour for PM10 and 0.01 pounds per 1000 pounds exhaust gas. The baghouse controlling EU-2 appeared to be installed and operating properly.

The emission limits are monitored by the pressure drop of the EU-2 baghouse. A digital read-out was installed that continuously displays the pressure drop of the baghouse. At the time of the field inspection, the pressure drop was 0.5 inches wc.

DEQ was able to receive records indicating the facility uses two separate adhesives, and they contain 0.1 percent VOC content and the density of the adhesives are 8.94 and 9.31 pounds per gallon.

The facility uses manufacturer's formulation data onsite for the VOC emissions calculations. DEQ reviewed monthly records that included the following information for EU-2: gallons (with water) of each coating and/or adhesive; VOC content (with water) of each coating and/or adhesive; VOC mass emission calculations determining the monthly emission rate in pounds per month; and mass emission calculations determining the annual emission rate in pounds per 12-month rolling time period. DEQ chose to review the records for February 2014, and based on the records reviewed, adhesives were used 14 out of the 28 days for the month of February and the usage ranged between 1 to 8 gallons per day. The monthly emission rate from April 2013 through April 2014 ranged between 0.00 to 1.00 pounds per month. The annual emission rate ranged between 9.58 to 19.05 pounds per 12-month rolling time period, which is below the 500 pound per 12-month rolling time period emission limit for EU-2.

The facility records the pressure drop on the baghouse daily during operation. DEQ reviewed the records for April 2013 through April 2014, and the pressure drop in EU-2 baghouse ranged between 0.2 to 1.4 inches wc.

The stack height for EU-2 baghouse appeared to be at least 36 feet above ground surface, and less than 67 inches in diameter. This is consistent with permitted limits for the stack of the baghouse.

#### **C. EU-GLUER**

This emission unit consisted of an edge gluer used for adhesive application. This system is vented inside the facility. The emission limits for EU-GLUER are 125 ~~tons~~<sup>lbs</sup> of VOCs per year, based on a 12-month rolling time period.

The adhesive waste materials are captured and stored in covered containers to be properly disposed of.

The facility uses manufacturer's formulation data for the adhesives used at the facility. The records indicated the facility uses two separate adhesives, and they contain 0.1 percent VOC content and the density of the adhesives are 8.94 and 9.31 pounds per gallon.

DEQ reviewed monthly records that included the following information for EU-GLUER: gallons (with water) of each coating and/or adhesive; VOC content (with water) of each coating and/or adhesive; VOC mass emission calculations determining the monthly emission rate in pounds per month; and mass emission calculations determining the annual emission rate in pounds per 12-month rolling time period. DEQ chose to review the records for February 2014, and based on the records reviewed, adhesives were used 15 out of the 28 days for the month of February and the usage ranged between 4 to 25 gallons per day. The monthly emission rate for April 2013 through April 2014 ranged between 0.00 to 2.75 pounds per month. The annual emission rate ranged between 22.61 to 46.69 pounds per 12-month rolling time period, which is below the 125 pound per 12-month rolling time period emission limit for EU-GLUER.

#### **D. EU-BOILER1**

The facility has one 15.5 MMBTU per hour wood and natural gas fired boiler with a multi-clone collector that provides steam to the pre-dryers and kilns. The boiler is rated at 300 horsepower. The saw dust waste from the wood working processes at the facility is used to fuel the boiler system.

DEQ observed the wood used as fuel which appeared to be seasoned wood without any painted or treated wood with preservatives. A malfunction abatement plan was submitted to the DEQ in April 2004, which indicates EU-BOILER1 will be shut-down and inspected at least annually. According to Mr. Ballard, the boiler system is inspected and maintained annually. Additionally, the MAP indicates the normal pressure drop of the multi-clone should be between 2.0 and 8.0 inches wc. During the field inspection, the magnahelic gauge ranged between 2.0 and 6.0 inches wc. If a malfunction of the boiler occurs, the facility will attempt to fix the problem. If the problem cannot be fixed, EU-BOILER1 will be operated on natural gas. Ash generated from EU-BOILER1 is collected in a hopper and disposed of every 10 to 12 weeks. EU-BOILER1 starts up using only natural gas, and continuously runs, even when the facility is not operating. A security service contractor monitors the boiler system, buildings, and kilns when the facility is not operating.

The multi-clone appeared to be installed and operating properly during the field inspection. The wood used as fuel is recorded on a daily basis. DEQ observed the wood fuel usage records and requested a print for February 2014. Based on February's records, the amount of wood used ranged from 3,842.41 pounds to 7,547.14 pounds, and averaging about 5,619.76 pounds per month. The facility records the average hourly PM using the total wood fuel usage rate and daily hours of operation of EU-BOILER. The average hourly PM ranged between 0.6345 to 1.0063 pounds of PM per hour, averaging 0.7493 pounds of PM per hour per month.

The stack for EU-BOILER1 appeared to be at least 45 feet above ground surface, and less than 30 inches in diameter. This is consistent with permitted limits for the stack of EU-BOILER1.

#### **E. FG-WOODDRY**

FG-WOODDRY combines emission units EU-PREDRYING and EU-KILNDRYING. EU-PREDRYING consists of two steam heated pre-dryers to dry wood prior to kiln drying, that operate at 95°F and EU-KILNDRYING consists of eight steam heated kilns to dry the wood to the correct moisture content prior to the woodworking processes. The temperature ranges for EU-KILNDRYING should range between 140°F and 160°F. The facility has four older kilns; only two are operational. The two inoperable kilns are planned to be removed from the site. There are also four newer kilns at the facility, two of which began operation within the last two months. The newer kilns are continuously monitored to keep a constant temperature, and control humidity by damper systems, which cut the amount of drying time in the kilns in half. The stacks to FG-WOODDRY are in the horizontal direction along the roof lines. After reviewing records for EU-KILNDRYING, it appears an initial permit was issued to install four kilns at the facility on September 2, 2005. Two of the four permitted kilns were installed immediately following issuance of the permit, the construction of the remaining two permitted kilns was put on hold due to economic conditions. An extension of 18 months was granted by the DEQ on March 2, 2007, for constructing the remaining two kilns, however; the facility was not able to construct the kilns within that time period. The two newest kilns at the facility finished construction in early 2014. The facility should have applied for a new PTI to construct the newest kilns at the facility. A Violation Notice, dated June 17, 2014, was sent to Springs Window Fashions, LLC regarding the newer kilns in EU-KILNDRYING.

The emission limits for FG-WOODDRY are 30 tons per year (tpy) of VOCs based on a 12-month rolling time period. The facility shall not process more than 195,000 board feet per day. Based on the records reviewed for the month of February 2014, the facility processed 10,000 to 57,880 board feet per day in FG-WOODDRY. The wood usage is not loaded into FG-WOODDRY on a daily basis. For the month of February, 9 of the 28 days recorded wood usage. The remainder of the days, which were recorded as 0 board feet per day, was when the wood was drying in either EU-PREDRYING or EU-KILNDRYING.

The VOC content of the hardwoods processed in FG-WOODDRY shall stay below 0.84 lb/1000 board feet. Based on the records reviewed, the VOC of the hardwood used is 0.12 lb/1000 board feet.

A thermostat has been installed in EU-PREDRYING to monitor the temperature of the buildings. The temperature of EU-PREDRYING shall not exceed 120°F. During the field inspection, EU-PREDRYING is controlled at 86°F.

Based on a letter from the DEQ, dated June 26, 2006, it was determined that performance testing on the full scale kilns was not technically feasible. The DEQ accepts laboratory testing completed on small scale kilns that mimic the large scale kilns. The VOC content from the basswood and poplar wood were reported as 0.115 lb/1000 board feet), and the density of basswood was reported as 26 pounds per cubic feet, and Poplar density was 30 pounds per cubic foot.

The facility records the following information on a monthly basis: the amount and type of raw wood board feet processed per day; the amount and type of raw wood processed in pounds per calendar month; the VOC emission factor for each type of raw wood processed; VOC mass emission calculations determining the monthly

emission rate in tons per month; and VOC emission calculations determining the annual emission rate in tons per 12-month rolling time period. VOC mass emission calculations from April 2013 through April 2014 ranged between 0.02 to 0.05 tons per month, and the emissions ranged between 0.03 to 0.44 tons per year based on a 12-month rolling time period, which is below the permitted limit of 30 tons per year limit.

EU-PREDRYING is now connected to an automated system that keeps the EU-PREDRYING buildings at a constant 86°F. Therefore the daily readings of the temperature are no longer recorded. According to Mr. Boehlke, the automated system is checked at least 3 to 4 days per week to observe that the system is operating properly.

Based on the building heights at the facility, the stack/vent heights appeared to be in compliance with permitted conditions.

**Summary:**

Based on the field inspection and records review, the facility is out of compliance with regards to the two kilns installed after the commencement timeline outlined in PTI 140-04A. DEQ sent a Violation Notice to Springs Window Fashions, LLC, dated June 17, 2014.

NAME Caryn Owens DATE 6/12/14 SUPERVISOR 