

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N228152662

FACILITY: CRANBROOK ACADEMY OF ART		SRN / ID: N2281
LOCATION: 500 LONE PINE RD, BLOOMFELD HLS		DISTRICT: Warren
CITY: BLOOMFELD HLS		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 11/21/2019
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 2020 scheduled inspection of Cranbrook Educational Community ("Cranbrook")		
RESOLVED COMPLAINTS:		

Cranbrook Educational Community (N2281)

39221 Woodward Avenue

P.O. Box 801

Bloomfield Hills, Michigan 48303-0801

PTIs: Permit-to-Install (PTI) No. 114-15 dated June 4, 2015, to become a synthetic minor for MACT (FG-FACILITY, I.1 & I.2 limits: 9 tpy Single HAP and 22.5 tpy Aggregate HAPs). The MACT Synthetic Minor FG-FACILITY limits for currently existing five (5) spray booths were recommended by AQD (Zhu) based upon January 21, 2015, inspection. Also, there is an existing PTI No. 660-89 dated September 1, 1989, for maintenance booth. However, based upon less than 200 gallons of coatings usage per month per booth, the booths are exempt from Rule 201 permit pursuant to 336.1287.

CO: Consent Order AQD No. 18-1999 for asbestos renovation. Settlement = \$0.00.

On November 21, 2019, I conducted a level-2 **FY 2020 scheduled** inspection of Cranbrook Educational Community ("Cranbrook"), located at 39221 Woodward Avenue, Bloomfield Hills, Michigan. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994, PA 451; and Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules.

During the inspection, Mr. John Malewicz (Phone: 248-645-3268; Cell: Fax: 248-770-0713; E-mail: jMalewicz@Cranbrook.Edu), Superintendent of HVAC & Maintenance, Academy of Art, Art Museum, Institute of Science Schools, assisted me. Also Mr. Tony Dematteis (Cell: 248-808-1526), Skilled Mechanic, assisted me concerning inspection of the booths and equipment.

Mr. Gene Hunt, Superintendent for Building Maintenance HVAC & Electric Services, retired about June 2017. Mr. Al Beeman transferred to a different position at Cranbrook.

The Cranbrook Educational Community is an education, research, and public museum complex in Bloomfield Hills, Michigan. This National Historic Landmark was founded in the early 20th century by newspaper mogul George Gough Booth. It consists of Cranbrook Schools, Cranbrook Academy of Art, Cranbrook Art Museum, Cranbrook Institute of

Science, and Cranbrook House and Gardens. The Cranbrook Academy of Art, one of the nation's leading graduate schools for architecture, art and design, was founded by George Booth and Ellen Scripps Booth in 1932. The school currently confers two graduate degrees: Master of Fine Arts and Master of Architecture. Both national and international students attend the pricy graduate school. Cranbrook Academy of Art was recently ranked sixth in the nation among fine art graduate programs by U.S. News & World Report.

There are six (6) natural gas fired boilers for space heating of the buildings; three (3) of six (6) boilers are for backup / standby purpose. The booths (5) are in Academy of Art, Art Museum, Institute of Science Schools. The school offers graduate degrees: Master of Arts and Master of Architecture. Cranbrook occupies 319-acre campus: K-12, Natural History, Science Museum, Arts Museum, etc.

In all, there are five (5) spray booths on campus. One is in the design building; one, painting building; two, sculpture building; & one in the maintenance building. During the inspection none of the booths was under operation.

Carpenter Shop Maintenance

One maintenance booth (PTI No. 660-89) is equipped with backdraft Andrea filters. CY 2019 paint / coating usage is less than 10 gallons per year.

Art Academy Buildings (Central Materials Labs)

Two (2) identical TECOR, Inc. (800-999-1881) booths (10 ft. * 10 ft. * 10 ft.) equipped with backdraft filters are present. Intake air filters are also present for product finish quality. One of these two booths may be used for light sanding before painting. CY 2019 paint / coating usage is less than 48 gallons per year.

3-D lab (basement)

One booth (4 ft. H * 8 ft. W * 4 ft. D) equipped with backdraft filters is present. No intake filters. Only spray cans are used. No intake filters. CY 2019 paint / coating usage is less than 7 gallons per year.

Art Academy Toxic Room

One TECOR, Inc. (800-999-1881) booth (10 ft. H * 10 ft. W * 10 ft. D) equipped with backdraft filters is present. Intake filters are present as well. CY 2019 paint / coating usage is less than 10 gallons per year.

As stated above, CY 2019 aggregate paint / coating usage is less than 75 gallons per year for all five booths put together. Assuming coatings contain 7.36 (presumptive solvent density per US EPA) pounds of volatile organic compounds (VOC) per gallon, 552 pounds of VOC per year = 0.28 ton of VOC per year is emitted (PTI No. 114-15, FG-FACILITY, I.1 & I.2 limits: 9 tpy Each Individual HAP and 22.5 tpy Aggregate HAPs; PTI No. 660-89, SC 10 limit: 0.6 pound of VOC per hour & 0.8 ton of VOC per year); maximum VOC emissions possible from a coating with practically no coating solids. All filters were installed properly.

Natural gas fired boilers (< 10 million BTU per hour) are exempt from permit. Pursuant to Rule 336.1282((2)b), the boilers burning sweet natural gas (up to 50 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install). In addition, Pursuant to Rule 336.1282 (2)(b), the fuel oil fired boilers (up to 20 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install) subject to the condition that fuel oil (limited to No.1 and No.2) burnt has sulfur content no greater than 0.40 percent by mass. It may be noted that NSPS Dc allows sulfur content up to 0.50 percent sulfur by mass (0.5 pounds of sulfur dioxide per million BTU heat input).

Carpenter house

Six (6) wood cutting, grinding, table saw, plainer, etc. machines are present. Saw dust particles are captured from each machine and ducted to a common manifold and delivered to eight (8) bags (each bag: 10 feet H * 1 feet Dia)

Art Academy Buildings Wood Shop

Seven (7) table saw, plainer, surface sander, etc. machines are present. Saw dust particles are captured from each machine and ducted to a common manifold and delivered to four (4) bags (each bag: 6 feet H * 1 feet Dia).

The machines such as saw, plainer, surface sander, etc. are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l) provided the bag filters are operated properly.

Conclusion

Cranbrook is in compliance with its permits; actually, all equipment are exempt from Rule 201.

NAME *J S Mcninchall*

DATE December 30, 2020

SUPERVISOR *Joyce*