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

N798267849

FACILITY: LEADING EDGE FIBERGLASS POOL		**SRN / ID:** N7982
LOCATION: 3090 W COOK RD, GRAND BLANC		**DISTRICT:** Lansing
CITY: GRAND BLANC		**COUNTY:** GENESEE
CONTACT: Scott Hoover , President		**ACTIVITY DATE:** 06/07/2023
STAFF: Julie Brunner	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled Inspection to determine compliance with PTI 53-08B. The VOC emission limit of 10.0 tpy (SC I.1) for FGFIBERGLASS on PTI 53-08B was exceeded.		
RESOLVED COMPLAINTS:		

On June 7, 2023, I conducted a scheduled inspection of Leading Edge Fiberglass Pools (N7982) in Grand Blanc. The last inspection of this facility was on July 20, 2020.

Arrived: 9:15 AM

Weather: 57°F, UV Index 2 low, and wind S 6 MPH

Departed: 11:40 AM

Contacts:

Mr. Scott Hoover, President, 877-450-7665, midwestpoolsinc@gmail.com, Shoover@midwestpools.com

Facility Description and Regulatory Overview:

Leading Edge Fiberglass Pools (established 2008) is a subsidiary of Midwest Pools. Both companies are at the same geographic site located almost equal distance between Flint, Grand Blanc, and Fenton. The location is adjacent to U.S. 23 approximately ½ mile west of Case Lake. Citizens Disposal, Inc., a municipal waste landfill is located northeast of the facility. The area is rural and mostly agricultural with some recreational, commercial, and residential mixed in.

Leading Edge Fiberglass Pools is a minor source with a potential to emit of less than 250 tons per year (tpy) of any regulated air contaminant. The facility is considered a synthetic minor source for emissions of hazardous air pollutants (HAP) with opt-out limits of less than 9.0 tpy of any single HAP, and 22.5 tpy of aggregate HAPs. With these restrictions, the facility has opted out of the Title V - Renewable Operating Permit (ROP) Program and is not subject to 40 CFR 63, Subpart WWWW Reinforced Plastic Composites Production.

Leading Edge Fiberglass Pools has one active Permit to Install (PTI) No. 53-08B issued August 31, 2016. The following emission units (EU) and flexible groups (FG) are on the PTI:

EU/FG ID	Emission Unit Description (Process Equipment & Control Devices)
EUBAY1 (build bay)	One dry filter spray booth (bay) and atomized applicator(s) for application of resin, gelcoat, catalyst material(s), mold release, mold cleaner (other than acetone), wax, additives, etc.
EUBAY2 (build bay)	One dry filter spray booth (bay) and atomized applicator(s) for application of resin, gelcoat, catalyst material(s), mold release, mold cleaner (other than acetone), wax, additives, etc.
EUCLEANUP	Miscellaneous cleanup activities using acetone.
FGFIBERGLASS	Fiberglass pooling manufacturing process with spray application of resin(s), gelcoat(s), catalyst material(s), and usage of mold release, mold cleaner (other than acetone), wax, and additives. Also, includes miscellaneous cleanup activities using acetone.
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.

There is also a prep-bay located in a separate building from the build bays where a finish coat can be sprayed on the pool.

MAERS:
The facility reports to MAERS. The following emissions were reported for 2022:

VOC – 19060 lb (9.53 tpy)
Styrene – 15440 lb (7.72 tpy)
Acetone – 3220 lb (1.61 tpy)

Inspection:
No odors were identified from the spray booths (build bays) from the parking lot of the facility. Even when spraying, odors were very faint to negligible in the yard. There were no visible emissions from the stacks that could be viewed from the parking lot.

A pre-inspection meeting was conducted with Scott Hoover. The facility operations were discussed. They were very busy last year trying to fill orders for pools and Scott is expecting to be a little slower this year. The facility is still operating one shift per day, but Scott has run two (2) shifts per day in the past. They are currently producing 2 to 3 pools per week. Working hours are 5 days per week from 5:30 am to 2:30 pm with some if needed on Saturdays until noon. A facility tour was then taken.

Fiberglass Lay-Up (PTI 53-08B):
Leading Edge Fiberglass Pools produces pools using a fiberglass lay-up process. Gelcoats and resins mixed with catalysts are sprayed and manually applied over molds. (The molds are made in-house using the same process.) Fiberglass mats or fiberglass fibers mixed with resin are laid over the molds. Moisture barrier coats are sprayed between certain layers of the fiberglass process. After the layers are cured, they are removed from the mold in the form of a swimming pool. Some changes that have been made to the process include using an acrylic paint (airless spray application) as a topcoat replacing some gelcoat usage and a new mold release which provides a slick surface with less mold release used.

Pool Making Process -
Pool Mold => mold release spray application => gelcoat spray application => barrier coat spray application => chopped fiberglass spray application (hand rolling after spray application) => resin spray application => fiber mat with resin spray application => chopped fiberglass spray application (hand rolling after spray application)

It takes 40-man hours (8-hours with 5 people) to make a pool. Per pool, about 220 lbs. of gelcoat and 1400 lbs. of resin is used, and less than ½ gallon of mold release is used. Acetone is used for cleaning guns and brushes in 5-gallon pails. Scott estimates that about 400 lbs. of acetone is used per month. They have added a detergent washer to replace acetone cleaning for guns and brushes which isn't as effective as cleaning with acetone. The washer/cleaner is located in one build bay and is housed in a tarped enclosure. The technical data sheet for the detergent used was provided (Aquawash™ Resin Emulsifier) and it contains no reportable VOCs. The detergent washer appears to meet the definition of an aqueous based parts washer and is exempt rule per Rule 281(1)(k).

During the inspection, the process was operating and gelcoat spray application to a pool was observed. Generally, one person sprays, and up to 4 people roll the materials. PPE (Tyvek, respirators, gloves, and covered safety toed shoes) are worn by the operators when laying up a pool. The permit allows for the installation of two lay-up build bays and the use of atomized applicator(s). Both bays are currently used.

A third bay is used as a prep-bay and was currently housing a new pool mold. Finish coat is also spray applied in the prep-bay. The finish coat contains less than 100 gm/liter of VOC max and a permit exemption for this process needs to be reviewed (below). Since the prep-bay does not have particulate control for overspray as required by exemption Rule 287(2)(c), exemption Rules 290 to 291 were explored.

Resin and gelcoat material is pumped directly from barrels in the coating room/areas to the spray guns. The coating delivery system has a material measurement device and is located right beside the bay. The gelcoat guns used are external mix and the chopper guns used are internal mix.

The exhaust systems appeared to meet the restrictions in the permit and the filters were in good shape. The filters are changed about once a month based on whether airflow through the filter system is restricted. Assuming 2 to 3 pools are built a week then 8 pools are made before a filter change is needed. They do build new pool molds and the spraying and sanding needed to build a mold increases how often the filters need to be changed.

Heating in the bays is done using radiant heaters (natural gas/propane) which are exempt per Rule 282(2)(b)(i).

Records:
Records requested for inspection:

1. Production logs for January through May 2023.
2. Safety Data Sheets (SDS) of the most commonly used resins, gelcoats and mold release.
3. VOC (styrene & MMA) emission calculations determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period for the last 12 months. (2020, 2021 (materials listing included), 2022, January to May 2023)
4. Acetone emission calculations determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period for the last 12 months. (2020, 2021 (materials listing included), 2022, January to May 2023)

Production logs (Build Sheets) for January through May 2023 were obtained. A production log for each pool tracks the type of material used, amount of materials, and the personnel that made the pool as part of the recordkeeping system.

For PTI 53-08B, resins are restricted to 45% by weight of styrene, 47% by weight of VOC, and 2% by weight of MMA, and gelcoats are restricted to 39% by weight of styrene, 42% by weight of VOC, and 10% by weight of MMA. A survey of materials used was conducted and it appears there is compliance with the material limits. Below is a summary of the SDS for the most commonly used resins and gelcoats that were provided with the inspection.

Resins – H884-IVA-20 Polyester Resin Solution (32.0% styrene)

Gelcoats – High Definition MW Blue Gel Coat (38.0% styrene, 4% methyl methacrylate)

The resin used in the last 12-months had a max styrene content of 32.0% in the records. The gelcoats used in the last 12-months had a max styrene content of 38%, max MMA content of 4%, and max VOC content of 42% in the records.

Compliance with Special Conditions (SC) II.1, II.2, II.3, and II.4 of PTI 53-08B is demonstrated by the records.

For the recordkeeping of emissions, the emission factors (EF) for styrene and MMA from Appendix A - Unified Emission Factors of Open Molding of Composites (July 23, 2001) are used to calculate emissions of VOC (mainly due to styrene and MMA). The UEF factors for "Mechanical Atomized" are used for spray application. Other VOCs from catalyst and mold release are included to demonstrate compliance with the permitted VOC limit of 10.0 tpy in the records. As of May 2023, emissions of VOC were 10.1 tpy (12-month rolling), exceeding the 10.0 tpy VOC limit. Total HAP emissions coming from gelcoat and resin usage were 7.8 tons in May 2023. If all HAPs were styrene, then emissions of styrene were below the 9.0 tpy HAP emission limit.

Emissions of acetone are limited to 3.0 tpy per SC I.2. There was 1.5 tpy (12-month rolling) of acetone emissions as of May 2023 which is below the permit limit.

12-Month Rolling Totals for Each Month

Month - Year	VOC (tpy)	Acetone (tpy)	Styrene & MMA (tpy)
June-2022	8.6	1.5	7.0

July-2022	8.5	1.6	6.9
August-2022	8.1	1.6	6.5
September-2022	8.4	1.6	6.8
October-2022	9.1	1.7	7.3
November-2022	9.5	1.5	7.7
December-2022	9.5	1.6	7.7
January-2023	9.8	1.6	8.0
February-2023	10.0	1.6	7.9
March-2023	9.9	1.6	7.9
April-2023	10.0	1.6	7.8
May-2023	10.1	1.5	7.8

Prep-Bay Finish Coating Exemption Determination:

Spray gun capable of 2 gals/min.

4 gallons used per pool and takes 15 mins to finish coat a pool.

At max, 2 to 3 pools per week are spray coated.

Finish Coating SDS – Ethylene Glycol (CAS No. 107-21-1), 0 – 5 weight %, ITSL - 4700 ug/m3 (1-hr)

Max VOC content - 100 gm/liter or 0.834 lb/gal

VOC emissions allowed under Rule 291 need to be less than the 5 tpy potential. Rule 290 allows up to 1000 lbs./month of noncarcinogenic VOCs.

PTE for VOC from finish coating: 4 gal/pool x 0.834 VOC lb/gal x 3 pools/week x 52 weeks/yr x 1 ton/2000 lb = 0.26 tpy OR 43 lb/month.

Rule 291 could be used because the PTE from finish coating is less than 5 tpy of VOC. Also, Rule 290 could be used but records per Rule 290(2)(d) of material use and calculations identifying the quality, nature, and quantity of air contaminant emissions

will need to be maintained in sufficient detail to demonstrate that the VOC emissions meet the emission limits outlined in Rule 290.

The copies of the SDS for the materials used in the process, production logs, and emission calculation records are located at: S:\@District Facilities\N7982 \Records\Inspection 6-7-2023.

Summary:
The facility appeared to be in compliance with all applicable rules and regulations, and PTI 53-08B with the exception of the VOC emission limit of 10.0 tpy (SC I.1) for FGFIBERGLASS. A violation notice for exceedance of the VOC emission limit of 10.0 tpy (SC I.1) for FGFIBERGLASS on PTI 53-08B will be sent.

Image 1(487) : Pool in build bay

Image 2(488) : Filters in build bay

Image 3(495) : Aqueous based parts washer

NAME Julie L. Brunner DATE 6/30/2023 SUPERVISOR RB