

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

B720566973

FACILITY: Knauf Insulation, Inc.		SRN / ID: B7205
LOCATION: 1000 E NORTH ST, ALBION		DISTRICT: Kalamazoo
CITY: ALBION		COUNTY: CALHOUN
CONTACT: Kevin Mault , HSE Manager		ACTIVITY DATE: 03/24/2023
STAFF: Amanda Cross	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On March 24, 2023 Air Quality Division's (AQD's) Amanda Cross (staff) completed an onsite inspection of Knauf Insulation (State Registration Number SRN: B7205) located at 1000 E. North Street, Albion Michigan 49224. This source is located in Calhoun County. The purpose of the inspection was to determine compliance with the Federal Clean Air Act, Article II, Part 55, Air Pollution Control Rules, of the Natural Resources and Environmental Protection Act, 1995 PA 451, as amended (Act 451); AQD administrative rules; and Renewable Operating Permit No. MI-ROP-B7205-2021a.

I arrived on-site and contacted the on-site Health, Safety, and Environmental contact, Mr. Kevin Mault who was not on site. I then was directed, via phone, by Mr. Adam Estes, Technical Specialist, Corporate Health, Safety, and Environmental to contact Mr. Robbie Burns, Production Manager. Mr. Burns retrieved me from the lobby and we went to speak in his office. I gave him an overview of the inspection process and he started the facility tour, until Mr. Mault was able to join us. A full facility tour was completed and a records review in the conference room following the tour. The following report will include operation descriptions as well as emissions records evaluation.

Knauf Insulation LLC is a manufacturer of wool fiberglass insulation. They have approximately 120 employees and operate 24-7. The facility uses four electric melters to make molten glass from raw materials and recycled glass. The molten glass is then spun into glass fibers. Some of the material is sprayed with resin and some is left non-resinated. These lines are controlled with a variety of high efficiency wet scrubbers, venturi scrubbers, and wet electrostatic precipitators.

All the equipment on site has been fully convert to Knauf technology from Guardian Insulation technology. This occurred during the previous ROP process. This process included changing to a different binder that no longer contains any hazardous air pollutants (HAPs). Because of this 2015 change, the facility is no longer a major source of HAPs and is not subject to 40 CFR Part 63, Subpart NNN, National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing.

The facility maintains a Human Machine Interface (HMI) system on-site which is accessible offsite as well. This HMI monitors and records the glass pull rate for each line and well as operating parameters of the pollution control devices on site including dust collectors or baghouses, scrubbers, and wet electrostatic precipitators. Glass pull rates are taken once per minute and averaged based on the tons produced to come up with a PM10 lbs/ton of glass pulled. The system also records alarms for the associated monitoring parameters for the pollution control devices. Alarms are set based on the most recent stack tests. Alarms include information like the

time, date, and duration of the alarm, probable causes or reason for the alarm, and corrective measures taken.

Source Wide Conditions

All process equipment at the stationary source including equipment covered by other permits, grandfathered equipment, and exempt equipment. (PTI No. 282-02B)

The facility is required to maintain a 24-hour reporting system for local residents with the phone number in published and maintained in local phone book. Mr. Mault and I googled "Guardian Fiberglass Action Line" which is (517) 629-4792 and maintained in the local phone book.

The facility is also required to track the HAP emissions, source wide. Knauf is tracking the pounds of each HAP containing material used on site, monthly. The HAP content in the raw material is also identified in the recordkeeping. HAP emissions 1,4 dioxane, ethylene oxide, chromium, hexavalent chromium, and acrylamide. Highest HAP emissions were in January 2022 and were 0.6 tpy for total HAPs.

EU-MATHAND

Equipment used for raw material receiving, conveying, weighing, mixing, storing, and feeding to FG-FURNACE 1, 3 and 4; and EU-FURNACE#2, that utilizes internally and externally vented baghouse controls. (PTI No. 26-15A)

Raw materials stored on site and used in the process are cullet, soda lime, syenite sand, soda ash, aplite sand, and borax. All of these are weighed separately and then conveyed to one of the 4 furnaces on site to produce the fiberglass. Raw materials are delivered by truck and rail. Cullet is delivered 10-12 times a day. Other materials are delivered 1-2 times a week. Cullet and dust collected in the dust collectors is reused at the facility. The dust collectors at the top of the raw material storage silos are constantly run to collect dust during deliveries. The area is cleaned a few times a week to clear it of loose raw materials.

The facility is tracking all materials both monthly and on a 12-month rolling basis. They are also keeping weekly non-certified visible emissions checks. If the person does not have certification, they are trained in Method 22 observation techniques. The weekly visible emission records were reviewed. Mr. Mault typically conducts the visible emissions testing and he is certified in Method 9. Method 22 is used unless there are emissions noted, in which case Method 9 is used. All records showed no abnormal visible emissions.

EU-FURNACE#2

This emission unit is one refractory lined electric melt furnace controlled with an externally vented baghouse that discharges molten glass to a refractory lined natural gas fired forehearth and then to EU-ML2ALBFORMING. (PTI No. 26-15A)

This emission unit has PM10 emission limits: 0.23 lb/ton of glass pulled and 0.92 pounds per hour (pph). The facility tested this emission unit in May of 2022 and showed compliance with these emission limits.

In 2021 Vitroflow vision system was installed on WBW3 during its' construction and proved to be extremely consistent and reliable compared to our old GFM camera vision system. As a result of the reliability, this technology was installed for our other three lines in 2022. Each day, manual pull rates are taken to ensure the accuracy of the equipment for all four lines - WBW1, WBW2, WBW3, and ML2. ML2's are verified once per shift or twice daily. WBW1, WBW2, and WBW3's are verified twice per shift or four times daily. Each week, our day process technicians and Process Engineering Manager audit this system with the deck operators to ensure accurate testing and calibration.

The hourly glass pull rate, as determined by the Vitroflow system, is maintained on the facility's HMI system. Glass pull rates are taken once per minute and averaged, based on the tons produced to come up with a PM10 lbs/ton of glass pulled. The furnace was operating during the inspection.

The baghouse that controls this furnace is the only bag leak detection that doesn't connect to the HMI system. Any alarms from this baghouse are tracked on written forms on a daily basis and are filed per our Recordkeeping spreadsheet. The facility monitors and ensures that when alarms are listed, they are responded to consistent with our air response procedures and to ensure emissions exceedance evaluations are not required.

Each September, the bag leak detection system will prompt for a calibration. This is performed by the Process Engineering Manager. The last calibration for all BLDs on-site was September 2022. The bag houses are also visibly inspected with a glow in the dark powder to inspect for any possible bag filter leaks.

All dust collectors on site have daily and weekly inspections completed, in house. A third-party is contacted if there is a problem identified. Daily inspections include differential pressure, pulse air PSI, if the pulse system is on, auger check, exhaust check, and operating temperature. The acceptable ranges are identified on the checklist. Weekly checklist and maintenance include cleaning the air vents, inspecting the fan belts, lube and inspection the rotary drive chain, inspect the air pulse hoses, and other required maintenance. Any repairs needed and completed are noted as well.

Emissions for EU-FURNACE#2 are as follows:

Pollutant	Limit	Time Period/Operating Scenario	Records
VOC	NA	12-Month Rolling	Less than 4 tpy March 2022

EU-FACESIZEPKG

This emission unit contains sizing and packaging operations for the resinated fiberglass production line consisting of one or more of the following processes: trimming, rolling, dicing, and packaging operations. Associated cleanup activities to be included. Operations utilize an internally vented bag filter followed by internally vented particulate controls or vent to the general in plant environment. (PTI No. 26-15A)

The resinated fiberglass is sent through an oven to cure. Once cured, the matted fiber glass had the adhesive applied, which is on a roll and adhered to the mat using infrared light. The fiberglass is then chopped into size, folded, and visually inspected before its packaged. The adhesive rolls are stored in the warehouse and the waste is disposed of in the trash. There is no liquid adhesive on site. As identified in the previous inspection, based on the use of asphalt adhesive, used on an estimated 5% of products, the facility had likely been overreporting VOCs for the asphalt adhesive for EU-FACESIZEPKG. The facility believes that the asphalt adhesive contains no VOCs and emissions from adhesive are negligible.

The facility is maintaining a list of the chemical composition of each product, ink, adhesive, and cleaning material including weight percent of VOC, density, and specific gravity. The tracking identifies where the VOC information was obtained which includes manufacturing data, SDS, and EPA fire data. Monthly usage of each VOC containing material is tracked.

Emissions from EU-FACESIZEPKG are as follows:

Pollutant	Limit	Time Period/Operating Scenario	Records
VOC	31.0 tpy	12-Month Rolling	Less than 1 tpy January 2022

EU-WBW3ALBFORMING

Non-resinated fiberglass forming and collection process fed by EU-FURNACE#1 consisting of natural gas-fired dual module forming section with one forming/fan zone and three product fiberizers in each module. The process is equipped with a wet scrubber for each module followed by a shared wet electrostatic precipitator (WESP) for control. Fluids, including de-dusting agent, are applied at various locations in the process. The product bagging process is controlled by two dust collectors that exhaust inside the building. (PTI No. 132-19B)

The line was running during the inspection. The process for the WBW lines are identical. Raw materials are added into the melters. Once melted, the molten glass has dedusting agent added to it, and it falls down through the fiberizers, creating fiberglass. This fiberglass is then inspected and packaged as loose fiberglass. In their master recordkeeping spreadsheet, the facility maintains a list of the chemical composition of each raw ingredient, product, ink, adhesive, and

cleaning material including weight percent of VOC, density, and specific gravity. The tracking identifies where the VOC information was obtained which includes manufacturing data and SDS. This is for every material required to be tracked, on site.

The facility completed testing to show compliance with emission limits on May 10, 2022 and submitted test results to the Department on June 22, 2022. Stack testing results showed compliance with the PM/10/2.5 emission limits for pounds per ton of glass pulled (limit: 2.34 lb/ton glass pulled) and PM emission limits for a 2-hour average of lb/ton glass pulled (limit: 11.00 lb/ton glass pulled).

The line is controlled by two wet scrubbers in parallel followed by a WESP. The product bagging process is controlled by two dust collectors that exhaust inside the building. The pollution control equipment had devices installed which monitored the pressure drop, liquid flow rate, primary and secondary current and voltage, and inlet water flow rate, as appropriate for each device. The pollution control equipment was operating with the following parameters:

	Dust Collector A	Dust Collector B	Scrubber A	Scrubber B
Pressure Drop	2.0" H2O	1.0" H2O	7.2" H2O	7.1" H2O
Liquid Flow Rate	NA	NA	257 gpm	224 gpm
Calibration Date	NA	NA	3/17/23	3/17/23

	WESP Side 1	WESP Side 2
Inlet H2O Flow Rate	75.8 gpm	68.2 gpm
Voltage	201 V	140 V
Amperage	105 Amp	52 Amp
Milliamp (mA)	388 mA	111 mA
Calibration Date	3/16/23	3/16/23

The permit requires that the pressure drop, and liquid flow rate be maintained within ±30% of the last performance test, as required by 40 CFR Part 60, Subpart PPP. For the WESP, the permit

also requires the facility maintain the primary and secondary current and voltage to within $\pm 30\%$ of last performance test, as required by 40 CFR Part 60, Subpart PPP. The HMI system is set with alarms, based on the last performance test, to alarm if the pressure drop and liquid flow rate fall outside of the $\pm 30\%$ parameters. The HMI system and alarm logging capability are discussed above.

The facility is tracking the following for EU-WBW3ALBFORMING, FG-ML2ALB, and FG-WBWALBFORMING, as required by the permit: daily weight of glass pulled in tons, annual weight of glass pulled monthly and on a 12-month rolling basis, weight of de-dusting oil used monthly, logs of pollution control alarms, a listing of the chemical composition of each raw material used, and PM, PM10, PM2.5, VOC, and/or ammonia emissions.

Emissions for EU-WBW3ALBFORMING are as follows:

Pollutant	Limit	Time Period/Operating Scenario	Records
VOC	43.74 tpy	12-Month Rolling	Less than 5 tpy November 2022
PM10/PM2.5	As required by Appendix 10	Annual Emissions	Yes Highest – October 2022
Material	Limit	Time Period/Operating Scenario	Records
De-Dusting Agent	0.17 lb/lb glass pulled	Calendar Day Average	Less than 0.17 lb/lb glass pulled
Glass Pulled	110 Tons	Calendar Day	Less than 110 tons/day
Glass Pulled	40,150 Tons	12-Month Rolling	Less than 40,150 tons/12-month rolling

For this emission unit, facility is also tracking the total daily solids (TDS) in the water for the WESP. These records were also reviewed as part of this emission unit.

EU-BINDERMIX

The binder mixing system includes ECOSE ingredient storage tanks, ECOSE binder mix tanks, and process water tanks. (PTI No. 26-15A)

The facility does not store or use any phenol/formaldehyde containing binders which exempts them from 40 CFR Part 63, Subpart NNN. The facility also maintains a list of all the raw materials, including chemicals in the binder mix, in their records. This information includes weight percent of VOC, density, and specific gravity. The tracking identifies where the VOC information was obtained which includes manufacturing data and SDS.

This emission unit is part of the FG-ML2ALB process. The facility adds ingredients to two of the tanks manually and the other tanks are filled automatically. The resin is mixed automatically and injected into the spinners which is then baked into the mats. Since the formulation change to a non-HAP containing binder, the facility is now a minor source of HAPs.

FG-ML2ALB

Consists of EU-ML2ALBFORMING, EU-ML2ALBCURING

Resinated fiberglass forming and collection process consisting of natural gas-fired rotary spin fiberizers, one conveyORIZED collection screen, and binder and de-dusting agent/wax spray applicators as well as one conveyor-fed natural gas fired curing oven with cooling section. This equipment is controlled by four high efficiency wet scrubber control systems. (PTI No. 26-15D)

The process on this line is the same as the WBW lines, except that binder mix is added to the molten glass before it goes through the fiberizers. Once through, it lands on a belt where it is cured in natural gas ovens, creating a mat. This is what the adhesive roll is added to before it's cut and then packaged to certain specifications.

The facility completed testing on this line in March 2019 to show compliance with the PM, PM10, PM2.5 emission limits. These emission limits are in pounds per ton of glass pulled (limit 5.59 lb/ton glass pulled), 2-hour averages (limit 11.00 lb/ton glass pulled) and pounds per hour (limit: 25.19 pph). There is an ammonia limit for this emission unit of 5.2 lb/ton of glass pulled. Testing showed compliance with these limits.

The pollution control equipment was operating with the following parameters:

	Scrubber 1	Scrubber 2	Scrubber 3	Cooling Section
Pressure Drop	6.45" H2O	6.68" H2O	4.97" H2O	Not Evaluated
Liquid Flow Rate	275 gpm	225 gpm	251 gpm	Not Evaluated
Calibration Date	3/16/23	3/16/23	3/16/23	3/16/23

Emissions for FG-ML2ALB are as follows:

Pollutant	Limit	Time Period/Operating Scenario	Records
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VOC	79 tpy	12-Month Rolling	Less than 5 tpy May 2022
Material	Limit	Time Period/Operating Scenario	Records
De-Dusting Agent	100 lb/ton of glass pulled	Calendar Day Average	Less than 100 lb/ton of glass pulled
Glass Pulled	108 Tons	Calendar Day	Less than 108* tons/day

According to the records, the 108 tons per day of glass pulled was exceeded on: June 6, 7, 8, 9, 12, 13, 20, 21, 22, 24, 25, 27, 28, and 30, totaling 14 days of exceedances. Mr. Mault and I pulled up the alarm log in the HMI system to June. It appeared there were several days where the pull rate monitors were malfunctioning, or the cameras were inoperable and needed to be repaired and the number had to be calculated manually. I requested he go back and look at the records and let me know if those exceedances were accurate or if there were calculations or over estimation errors. No other days in 2022 or 2023 had exceedances.

Mr. Mault provided updated daily pull rate information in an email sent on 3/31/23. He pulled the data for the fiberized pounds from June that were over the permit limit and found some discrepancies with the information. He went back through the entire month of June and found some other numbers that were incorrect. These have been updated to reflect the correct information. Looking at the data for the other lines it looks like this was only ML2 and only June. The corrected data doesn't show any exceedances in the daily pull rate.

The permit requires that the pressure drop, and liquid flow rate be maintained within ±30% of the last performance test, as required by 40 CFR Part 60, Subpart PPP. This is done through scrubber alarms, set within the HMI system, and tracked, as discussed above.

FG-WBWALBFORMING

Consists of EU-WBW1ALBFORMING, EU-WBW2ALBFORMING

Two non-resinated fiberglass forming and collection processes consisting of natural gas-fired rotary spin fiberizers and conveyORIZED collection screens that utilize four externally vented venturi scrubbers. The lines also include a dicing operation with fugitive emissions from the use of an anti-static additive, silicone and/or de-dusting oil application that utilizes internally vented particulate controls. (PTI No. 26-15D)

This line was in operation during the inspection. The facility completed testing on this line in March 2019 to show compliance with the PM, PM10, PM2.5 emission limits. These emission limits are in pounds per ton of glass pulled (limit 5.33 lb/ton glass pulled), 2-hour averages (limit

11.00 lb/ton glass pulled) and pounds per hour (limit: 23.98 pph). Testing showed compliance with these limits.

The pollution control equipment was operating with the following parameters:

	Scrubber 1A	Scrubber 1B	Scrubber 1C	Scrubber 2
Pressure Drop	5.9" H2O	6.34" H2O	3.72" H2O	7.3" H2O
Liquid Flow Rate	275 gpm	238 gpm	251 gpm	249 gpm
Calibration Date	3/16/23	3/16/23	3/16/23	3/16/23

	Internally Vented Baghouse North 1-2	Internally Vented Baghouse North 3-4
Pressure Drop	0.5" H2O	0.7" H2O

Emissions for FG-WBWALBFORMING are as follows:

Pollutant	Limit	Time Period/Operating Scenario	Records
VOC	50.0 tpy	12-Month Rolling	Less than 5 tpy
Material	Limit	Time Period/Operating Scenario	Records
Glass Pulled	119 Tons	Calendar Day	Less than 119 tons/day
Glass Pulled	39,420 Tons	12-Month Rolling	Less than 39,420 tons per year 12-month rolling

The permit requires that the pressure drop, and liquid flow rate be maintained within ±30% of the last performance test, as required by 40 CFR Part 60, Subpart PPP. This is done through scrubber alarms, set within the HMI system, and tracked, as discussed above.

FG-FURNACE1,3 and 4

Consists of – EU-FURNACE#3, EU-FURNACE#4, EU-FURNACE#1

A flexible group that includes melters associated with EU-WBW3ALBFORMING and FG-WBWALBFORMING, which are all vented to existing baghouses and stack. (PTI No. 26-15A)

The melters were in operation during the inspection. EU-FURNACE#1 provides molten glass to EU-WBW3ALBFORMING and EU-FURNACE# and EU-FURNACE#4 provide molten glass to EU-WBW1ALBFORMING and EU-WBW2ALBFORMING. Raw material takes about 6 hours to melt before it goes to the fiberizers. Baghouses operate continuously. Bag leak detection gauges fluctuate based on the phase the baghouse is in.

	Baghouse North	Baghouse South
Bag Leak Detection	141 mA	2.1 mA
Calibration Date	September 2022	September 2022

This emission unit has PM10 emission limits: 0.46 lb/ton of glass pulled and 2.08 pounds per hour (pph). The facility tested this emission unit in May of 2022 and showed compliance with these emission limits. The Vitroflow glass pull rate monitoring system is discussed above. The hourly glass pull rate is maintained on the facility’s HMI system. Glass pull rates are taken once per minute and averaged based on the tons produced to come up with a PM10 lbs/ton of glass pulled. The furnace was operating during the inspection.

Emissions for FG-FURNACE1,3 and 4 are as follows:

Pollutant	Limit	Time Period/Operating Scenario	Records
VOC	NA	12-Month Rolling	Less than 10 tpy December 2022

Baghouse alarms, like scrubber alarms, are tracked and logged on the HMI system, which is discussed above.

FG-COOLTOWERS

Consists of - EU-COOLTOWER, EU-COOLTOWER2, EU-COOLTOWER3

Three cooling towers. (PTI Nos. 26-15D and 132-19B)

Emissions for FG-COOLTOWERS are as follows:

Pollutant	Limit	Time Period/Operating Scenario	Records
PM/10/2.5	0.39 tpy	12-month rolling EU-COOLTOWER	Less than 0.39 tpy
PM/10/2.5	0.019 pph	Hourly (testing) EU-COOLTOWER2 and EU-COOLTOWER3	NA – testing has not been required for drift loss
Material	Limit	Time Period/Operating Scenario	Records
TDS	2,200 ppmw	Monthly EU-COOLTOWER	Less than 2,200 ppmw*
TDS	1,980 ppmw	Monthly for EU-COOLINGTOWER2 and EU-COOLINGTOWER3	Less than 1,980 ppmw

The vendor certification for EU-COOLTOWER is being maintained in the facility's main recordkeeping document. The manufacturer shows that the drift rate is 0.005%. The drift rate for EU-COOLTOWER2 and EU-COOLTOWER3 is required to be 0.002% or less. The main recordkeeping document states that the cooling towers 2 and 3 meet the standards for ASHRE and California Title 24 requirements, which satisfies the 0.002% drift rate.

Records showed that there were two months the TDS was above 2,200 ppmw, July 2022 was 2293 TDS and October 2022 was 4119 TDS.

In the follow-up email on 3/31/23, Mr. Mault provided the following information. The TDS was higher in July as noted by the email communication in the provided spreadsheet. A blowdown was conducted to decrease the TDS. While the limit was exceeded, the documentation and calculation of the PM showed no emission exceedance occurred. When reviewing the documentation for October's average it was determined the information entered into the formula was transposed. The numbers were changed to what it should have been and the average for the month calculated to 1774.17 ppmw.

FG-RULE290

This flexible group includes any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a, and Rule 290. Emission units installed/modified before December 20, 2016, may show compliance with Rule 290 in effect at the time of installation/modification.

When Rule 290 is used, the facility tracks each material, each component of the material, if the material is carcinogenic or non-carcinogenic, and the associated ITLS or IRSI is applicable. This is

most frequently used for trials of new chemical additions to existing products. During each of the trials, emissions in pounds per hour are monitored. Recordkeeping from the trials shows that the amount of emissions from both carcinogenic and non-carcinogenic materials were below the allowed 10 lbs/month and 1,000 lbs/month uncontrolled respectively.

FG-COLDCLEANERS

This flexible group includes any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, Rule 278a and Rule 281(2)(h) or Rule 285(2)(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

The two cold cleaners on site. The cold cleaners have operational instructions posted clearly on the lids. Crystal Clean services the cleaners quarterly.

FG-EXTRICEMACT<500bhp

Consists of – EU-DETROITDSL1, EU-DETROITDSL2

40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at an area source of HAP emissions, existing emergency, compression ignition (CI) RICE equal to or less than 500 brake hp. A RICE is existing if the date of installation is before June 12, 2006.

None of the engines were running during the inspection. All engines are equipped with a non-resettable hours meter. EU-DETROITDSL1 read 648 hours and EU-DETROITDSL2 read 625 hours.

Weekly maintenance records are sent to the HSE personnel including date of maintenance, hours meter reading, reason for running, hours spent for an emergency, hours spent for maintenance and testing, hours spent for non-emergency, fuel level, annual service, and notes. Engines run for approximately 30 minutes per week for readiness testing. Temperature, fuel level, oil pressure, RMP during running, leaking fuel or coolant, battery, and many other parameters are checked during weekly maintenance by employees on site.

Annual preventative maintenance for all the generators is completed in house. The annual inspections and PMs are stored in SAP and are auto generated each December. When the work order is created for the annual PM, the oil and oil filters are changed during that time. The facility was the victim of a cyber-attack in 2022 and temporarily lost access to our SAP maintenance PMs. Only recently has the system and PM's been restored. The PM for the generators is currently in the massive backlog and is scheduled to be completed in April.

Total hours of operation are tracked using both the weekly hours meter and a 12-month rolling formula to show the yearly hours operated. The facility is running the engines less than the allowed 100 hours per calendar year for maintenance checks. The fuel usage is also tracked based on hours run and worst-case scenario load based on the manufacturer specifications. Bill of lading, supplied via email after the inspection, identified the fuel as 15 ppm of less of sulfur.

FG-EXTRICEMACT>500bhp

Consists of – EU-ML2GEN

40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at an area source of HAP emissions, existing emergency, compression ignition (CI) RICE greater than 500 brake hp. A RICE is existing if the date of installation is before June 12, 2006.

The engine was not running during the inspection. Non-resettable hours meter read 735 hours. See the above discussion of records maintained for this flexible group.

FG-NSPSIII

Consists of – EU-ALLEYGEN

A 900 HP (671 kilowatts (kW)) new emergency compression ignition (diesel fuel fired) RICE engine located at an area source of HAP emissions, subject to MACT ZZZZ. The permittee is required to demonstrate compliance with the MACT by complying with the NSPS III. Engine manufactured after April 1, 2006.

Manufacturer certification documentation was provided for EU-ALLEYGEN during the ROP renewal process. The engine is an EPA certified Tier 2 engine built in August 2006. The facility is following the manufacturer's emission-related written instructions for required maintenance and maintaining records of maintenance performed. The engine was not running during the inspection. The non-resettable hours meter read 363.7 hours. See the above discussion of records maintained for this flexible group.

FG-CAMUNITS

The equipment in this flexible group is subject to Compliance Assurance Monitoring, 40 CFR 64.6. Equipment in this flexible group includes:

Consists of – EU-ML2ALBFORMING, EU-WBW1ALBFORMING, EU-WBW2ALBFORMING, EU-WBW3ALBFORMING, EU-ML2ALBFORMING – Fisher Klosterman Venturi Scrubbers, a mix of 650, 850 and 1100's.

EU-WBW1ALBFORMING – Venturi Scrubbers (3); cyclone with internally vented screen room and bag filters
EU-WBW2ALBFORMING – Venturi Scrubber (1); cyclone with internally vented screen room and bag filters

EU-WBW3ALBFORMING – Venturi Scrubbers (2); Wet Electrostatic Precipitator

The facility tracks the scrubber pressure drop and liquid flow rate continuously using their HMI system. The averaging period is every four hours. The indicator range was established during the

last performance test. The facility tracks all alarms on site and maintains records of maintenance performed, both preventative and as required by alarms on site.

FG-FIBERIZATION

Consists of - EU-ML2ALBFORMING, EU-ML2ALBCURING, EU-WBW1ALBFORMING, EU-WBW2ALBFORMING

All process equipment associated with the conversion of the existing fiberization process to the Knauf fiberization process. (PTI No. 26-15A)

Annual emissions of PM2.5 and PM10 in tons/calendar year per Appendix 9 are being tracked. PM10 and PM2.5 emission factors from stack testing are used to determine emission rates of PM10/2.5 monthly. Highest emission rates are in May 2022 for PM10/2.5. The condition in the ROP states that this calculation needs to be completed through calendar year 2021. It is likely the facility no longer needs to track these emissions, but records should be maintained for at least 5 years.

ROP Reports and Certifications

The facility is submitting the required ROP annual and semi-annual certifications in a timely manner. In 2022, the facility experienced a cyber attack and lost access to all data stored on the internal systems. In this event, the facility submitted an ROP certification, but was unable to provide the required data to verify compliance. This ROP certification was resubmitted when the information was recovered, and the facility could verify compliance.

The facility is also submitting the required New Source Performance Standard (NSPS) Part 60, Subpart PPP certifications with deviation reporting. The facility has submitted their annual MAERS report in a timely manner. EGLE staff evaluated the submitted MAERS report as part of the compliance determination. The MAERS reported emissions appeared to be accurate and in line with previously reported emissions. The certification for MAERS was received on 3/8/23.

Compliance Determination

Based on the on-site inspection and records review, the facility appears to be in compliance with the Federal Clean Air Act, Article II, Part 55, Air Pollution Control Rules, of the Natural Resources and Environmental Protection Act, 1995 PA 451, as amended (Act 451); AQD administrative rules; and Renewable Operating Permit No. MI-ROP-B7205-2021a.

NAME Aimee Cross

DATE 4/10/23

SUPERVISOR RIL 4/6/23