

M4777
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DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

M477764320

FACILITY: BASF CORP		SRN / ID: M4777
LOCATION: 1609 BIDDLE AVE, WYANDOTTE		DISTRICT: Detroit
CITY: WYANDOTTE		COUNTY: WAYNE
CONTACT: Bryan Hughes , EHS Team Leader		ACTIVITY DATE: 08/31/2022
STAFF: Samuel Liveson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On-site inspection of a Title V source.		
RESOLVED COMPLAINTS:		

On August 31, 2022, AQD staff Sam Liveson conducted an announced, scheduled inspection of BASF Corporation – Plastics Plants (BASF Plastics) located at 1609 Biddle Avenue in Wyandotte, Michigan. The purpose of the inspection was to determine the facility’s compliance with the federal Clean Air Act; Part 55, Air Pollution Control, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; the Michigan Air Pollution Control Rules; and the conditions of Renewable Operating Permit (ROP) No. MI-ROP-M4777-2015a; and the conditions of Permit to Install (PTI) No. 88-17.

Pre-Inspection Meeting and Facility Overview

1. Scheduling, Arrival, and Safety Overview

Due to the ongoing COVID pandemic, this inspection was announced. I called Bryan Hughes, EHS Team Leader, on August 23, 2022 about visiting the following week.

On August 31, 2022, I arrived at the facility at 9:05 AM. Weather was 68 degrees Fahrenheit and sunny. I drove into the facility entrance and turned left to park in the visitor’s oval parking area south of the Main Administration Building. I walked to the front entrance of the Main Administration Building and met with Bryan Hughes, Environment, Health, and Safety (EHS) Team Leader, and Cole Gladioux, EHS Intern, and received a visitor’s badge. I stated the purpose of my visit.

Personal protection equipment to have on site includes long sleeves, safety shoes, a hard hat, safety glasses, a safety vest, and earmuff hearing protection. Ear plugs are available at all plants if needed; however double hearing protection is required on the roof of Engineering Plastics Compounding (EPC) (plugs and muffs).

2. General Facility Overview

BASF Plastics is one of three separate stationary sources that make up BASF’s Wyandotte operations. The other two sources are BASF Corporation – Chemical Plants (State Registration Number B4359) and BASF Corporation – Labs and Applications Centers (SRN M4808).

2.1. Stationary Source Determination

Under the AQD administrative rules at R 336.1119(r), a stationary source is defined, in part, as “all buildings ... which are located at 1 or more contiguous or adjacent properties, which are under the control of the same person, and which have the same 2-digit [SIC] major group code associated with their primary activity.” Based on this definition and AQD’s Policy and Procedure AQD-011: Stationary Source Determinations, the Wyandotte site is split into three stationary sources based on their SIC codes:

Facility	SRN	SIC Major grouping
BASF Corporation – Chemical Plants	B4359	28
BASF Corporation – Plastics Plants	M4777	30
BASF Corporation – Research and Development	M4808	87

Regarding HAPs, 40 CFR Part 63 Subpart A, 63.1(a)(1) discusses how “Terms used throughout this part are defined in § 63.2 or in the Clean Air Act (Act) as amended in 1990, except that individual subparts of this part may include specific definitions in addition to or that supersede definitions in § 63.2.” Under §

63.2, "Major source means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants..." Per this definition, SIC code is not a criterion in determining a major source of hazardous air pollutants.

Under § 63.2, "Area source means any stationary source of hazardous air pollutants that is not a major source as defined in this part." Also under § 63.2, "Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant."

Based on definitions in § 63.2, it appears stationary sources B4359, M4777, and M4808 are considered one source when evaluated for HAP applicability.

2.2. Major Source Determination

Prior to February 7, 2006, the group of stationary sources at BASF Wyandotte were considered a major source for HAPs. BASF operates polyether polyols manufacturing process units at B4359 that became an existing affected source under 40 CFR Part 63, Subpart PPP – NESHAP for Polyether Polyols Production on the initial compliance date of June 1, 2002 (40 CFR 63.1422(c)). BASF Wyandotte operates a flexible polyurethane foam process at M4777 that became an existing affected source under 40 CFR Part 63, Subpart III – NESHAP for Flexible Polyurethane Foam Production on the initial compliance date of October 8, 2001 (40 CFR 63.1291(a)).

On February 7, 2006, BASF obtained legal, enforceable permit limits (Permits to Install Nos. 289-05 for B4359, 314-05 for M4808, and 315-05 for M4777) for the group of stationary sources to restrict the potential to emit of any single HAP to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year so that each stationary source at BASF Wyandotte is an area source of HAPs. BASF has yet to inform the AQD of an intent to reclassify to an area source of HAPs for MACTs PPP and III. Until such time, the group of stationary sources remains major for these two MACT standards; therefore, the individual stationary source BASF Plastics (M4777) must obtain and continue to operate in compliance with an ROP.

3. Compliance Background

There have been no recent complaints for this facility.

On June 17, 2014 a violation notice was issued to BASF Plastics for failure to submit a renewal application to MI-ROP-M4777-2009 by the June 10, 2014 deadline. As a result, Consent Order No. 47-2014 (effective date October 2, 2014) was issued. It appears the facility has complied with the requirements in paragraph 9 of the consent order. From follow-up discussions, it appears BASF will request that Consent Order No. 47-2014 be terminated.

4. Outstanding Violations

There are no outstanding violations for this facility.

Facility Walkthrough: Process Overview and Compliance Status

1. Cellasto Plant – MI-ROP-M4777-2015a Section 2

Bryan drove Cole and me to the Cellasto Plant, where we met with Evan Rinke, EHS Specialist. Evan provided a tour of the Cellasto Plant and explained equipment and operations.

1.1. Cellasto Plant Overview

The Cellasto Plant produces jounce bumpers for the automotive industry. These foam rubber bumpers are added to a vehicle's suspension shock absorbers to prevent metal from hitting metal during compression of the suspension. The foam parts are produced by the reaction injection molding (RIM) of polyol and naphthalene diisocyanate (NDI). There is a reactor room with reactors (FGELAREACTOR) and molds for RIM (EUELAMOLDING); curing ovens (EUELAOVEN101-109); and deburring (EUELADEBURRING). N-methyl-2-pyrrolidone (NMP) is stored outside. Equipment is subject to 40 CFR Part 63 Subpart III – NESHAP for Flexible Polyurethane Foam Production (FGELAMACTS).

1.2. NMP Storage Tanks No. 111 and 112 – Rule 290

I observed the two NMP above-ground storage tanks located near the Cellasto Plant entrance. These are tanks 111 and 112. NMP is used to clean reactors (FGELAREACTOR). Vapor balance and vapor recovery don't occur during filling of these tanks. To control emissions of displaced vapors during filling of the two tanks, each storage tank has an associated 55-gallon carbon adsorption drum to capture volatile organic compounds (VOCs). To monitor the carbon drums for breakthrough, each drum has an associated "saturation indicator" on top that is purple in color and turns brown as carbon is expired. Evan explained that a carbon change is scheduled if ¾ of the indicator length is brown. Staff look at the indicators monthly. AQD observed that both saturation indicators had several inches of purple color so that the carbon was not expired. Carbon is changed in each tank annually regardless of if it is expired. There is also a nitrogen pad on these tanks so that as vapor is displaced, nitrogen is what is exhausted.

1.3. Prepolymer Reactors - FGELAREACTOR, Rule 290

I visited north reactors 240 and 250 and a knockout pot for condensibles, as well as south reactors 210, 220, and 230. Reactors all appear to be a similar size except that reactor 230 is a smaller reactor for smaller batches. Reactors react polyol with NDI to produce a prepolymer used in the RIM lines.

Each of the five reactors has a carbon adsorption drum to control emissions, similarly to the outdoor NMP storage tanks. The knockout pot also has a carbon adsorption drum. Carbon drums have saturation indicators on top that are initially purple and turn brown as carbon is exhausted. Evan explained that carbon is changed every 6 months on reactors, unlike annually for the outdoor NMP tanks, because these carbon drums are smaller. The facility assumes a control efficiency on these carbon canisters in emissions calculations.

I observed raw material storage. The storage area generally looks well maintained. NDI and white oil are stored. NDI is a powder. Polyol is stored in the tank farm at the facility. According to staff, the initial addition of materials into the reactors is not dusty. NDI containers are placed into the base of the reactor and then opened instead of being poured in from the top of the reactor. To transfer the reacted product to the RIM lines, transfer vessels are used. I observed a transfer vessel. They are closed. They are wheeled over to the reactor and hooked up. Per the previous staff report, displaced air from the transfer vessel is exhausted to the in-plant environment.

1.3.1. FGELAREACTOR Special Conditions and Compliance Status

SC(s)	Brief Condition Summary	Determination	Explanation
I.1, III.1, VI.1	0.5 lbs VOC per 1000 pounds resin produced; do not operate unless VOC emission limit is met; keep records demonstrating VOC limit is met.	Compliance	On September 29, 2022, BASF provided records of the monthly VOC emissions per pounds of resin produced. The highest monthly VOC emission rate was 0.146 pounds VOC per 1000 pounds resin, which is below the emission limit of 0.5 pounds VOC per 1000 pounds resin.
IV.1	Install, operate, and maintain carbon adsorption units	Compliance	I observed six carbon adsorption units and that saturation indicators were mostly purple. All carbon drums appeared to be labeled "June 22". Evan explained that carbon is changed every 6 months on reactors. The drums would be changed again in December.

1.4. RIM Lines – EUELAMOLDING - Rule 286(2)(a)

Reacted material is transferred to RIM lines. The lines are numbered C1-C9 and H1-H3, with "pairings" being C2/C3, C4/C5, C6/C7, C8/C9, H1/H2, and H3/C1 in order from north to south. Walking through the area, I observed the ovens on C8, and also observed line H1. We walked along line C9, which was operating. I observed the removal of a finished part and saw mold release sprayed onto the mold automatically. Curing ovens are electric. From observing ventilation and talking with staff, RIM lines don't appear to exhaust to ambient air.

1.5. Ovens, Demisters, and Deburring – *EUELAOVEN101-112 and EUELADEBURRING* - Rule 290 Parts created from RIM are put into one of 12 electric ovens, numbered 101 through 112, for curing the parts. According to the facility ROP renewal application received December 18, 2019, ovens 110, 111, and 112 were installed in March and April of 2018.

The twelve ovens have two mist eliminators (demisters). Each demister contains a screen filter and a bag filter to control condensable VOC and particulate emissions before they exhaust to ambient air. One demister controls the first bank of ovens (101 through 106), and the second demister controls the second bank of ovens (107 through 112). Pressure drop across the filters is measured and the process is interlocked with pressure sensors. If pressure is outside of the set parameters, the whole process shuts down. We visited each demister. They are located on the upper “mezzanine” level. Both were operating during the inspection. On the bank #1 demister, I observed that the pressure drop across the screen filter was 0.1 inch water, and the pressure drop across the bag filter was 0.4 inches water. From talking with staff on site, the range is 1 inch. The second demister is newer and does not display pressure drop readings. According to staff on site, the pressure drop range appears to be 0.5 inches to 2 inches water.

To remove any burrs from the parts, there are three deburring machines numbered 3, 4, and 5. These use metal beads and nitrogen to knock off extraneous material from the molds. The knocked-off pieces are collected. Deburrers number 1 and 2 were taken offline. There are not filter socks associated with deburring. According to deburring particulate emissions records, deburring units vent individually to the outside atmosphere.

There is also some cutting equipment associated with the molds, as well as presses to add plastic rings to the jounce bumper depending on the customer requirement. No adhesive or coating is required when adding the plastic ring onto the jounce bumper.

1.6. FGELAMACTS Special Conditions and Compliance Status

SC(s)	Brief Condition Summary	Determination	Explanation
III.1, VI.1	Do not use HAPs to clean equipment.	Compliance	The facility certified that methylene chloride is not used in cleaning equipment per 40 CFR Part 63 Subpart OOOOOO – National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources 63.11416(c)(1). Because the facility is subject to the Major source NESHAP Subpart III, they are not subject to the area source NESHAP OOOOOO at this time. AQD requested that in the future, the facility certify that no HAPs are used as an equipment cleaner per the major source standard Subpart III (63.1300(a)) rather than certifying no methylene chloride per Subpart OOOOOO (63.11416(c)(1)). The cleaners used are NMP and white mineral oils. Safety datasheets (SDS) were provided for both materials. According to SDSs, the materials contain no HAPs.
III.2, VI.2	Do not use HAPs in the mold release.	Compliance	The facility certified that methylene chloride is not used in the molded foam process. AQD requested that in the future, the facility certify per the major source NESHAP Subpart III (40 CFR 63.1300(b)) rather than the minor source NESHAP Subpart OOOOOO. The facility provided the MSDS for mold release agent 621/E7. It contains isotridecanol, which is not a HAP.
IX.1	Comply with applicable provisions	Compliance	Applicable requirements are included in the flexible group special conditions.

of 40 CFR Part 63
Subparts A and III.

1.7. FGELARULE290 Special Conditions and Compliance Status

SC(s)	Brief Condition Summary	Determination	Explanation
I.1	Noncarcinogenic VOC emissions below 500 pounds per month for each emission unit. ¹	Compliance	Monthly emissions records from January 2021 through July 2022 indicate that mold lines (FGELAMOULDS) emitted a maximum of 183 pounds in April of 2021. This is less than the limit of 500 pounds VOC per month.
I.2.a	Noncarcinogenic air contaminants limited to 500 pounds per month. (PM may fall into this category.) ^{1, 2}	Compliance	Monthly emissions records from January 2021 through July 2022 indicate that curing ovens emit 426 pounds VOC per month; reactors emit less than 500 pounds of combined PM and VOC per month; and deburrers emit 1.1 pounds PM per month. These emissions are each below the limit of 500 pounds of air contaminants per month.
I.3.a	Particulate emissions controlled via fabric filter or equivalent control system. ²	Not evaluated	Curing ovens have demisters which are fabric filter control. Deburrer emissions are controlled by a knockout box. Records indicate that Clayton stack testing performed 8/21/03 yielded results of 0.00059 lbs PM per hour for these deburring machines. However AQD did not request additional information to determine if PM exhaust from deburrers meets concentration and flow rate criteria in I.3.a.
I.3.b	Visible emissions less than 5% opacity. ²	Compliance	Records of monthly opacity monitoring at Cellasto stacks indicate that no visible emissions have been observed. I did not notice visible emissions while on site.
VI.1.e	Keep records to demonstrate compliance with Rule 290	Compliance	On September 29, 2022, BASF provided records of Rule 290 emissions for January of 2021 through July 2022 as requested by AQD.
VI.3	Perform monthly visible emission observations for emission units that emit particulate.	Compliance	On September 29, 2022, BASF provided monthly records of visible emission observations for January 2022 through August of 2022 as requested by AQD.

¹ Facility records indicate that emissions include MDI (CAS #101-68-8, 24-hr ITSL of 0.6 micrograms per cubic meter[ug/m3]), NDI (CAS #3173-72-6, no current screening level), DIPPI (CAS #28178-42-9, no current screening level), NMP (CAS #872-50-4, 24-hr ITSL of 5600 ug/m3), and DIPA (CAS #110-97-4, annual ITSL of 4 ug/m3). Screening levels indicate that each pollutant category (1) noncarcinogenic VOC and (2) other noncarcinogenic air contaminants are limited to 500 pounds per month controlled.

² Regarding particulate emissions, Rule 290 requires compliance with either (1) the pounds per month emission limit in FGELARULE290 290 SC I.2 (Rule 290(2)(a)(ii)); or (2) particulate exhaust concentration and opacity requirements (no pounds/month emission limit) in FGELARULE290 290 SC I.3 (Rule 290(2)(a)(iii)). BASF records indicate that the facility complies with both of these compliance methods, with the exception of curing ovens. Considering the 12 curing ovens as one emission unit, they comply with Rule 290 particulate requirements via SC I.3; not via SC I.2 because combined VOC and PM emissions are greater than 500 pounds per month.

1.8. Cellasto Cold Cleaners – FGELACOLDCLEANERS

According to staff, the Cellasto cold cleaner was removed so that there are currently no cold cleaners at Cellasto.

2. Engineering Plastics Compounding (EPC) – MI-ROP-M4777-2015a Section 1 - Rule 286(2)(a) and Rule 290

Chris Livernois, Operations Coordinator, and Jordan Thompson, Senior EHS Specialist, provided a tour of EPC and explained equipment and operations.

EPC operates a plastic extrusion process. The plant consists of seven extruders. The extruding process starts with seven silos of raw material such as resin, fiberglass, powder minerals, ultraviolet powder, stabilizers (waxes), and pigment (carbon). Silos are controlled via filter houses on top of the silos. Raw materials are received via rail car. These raw materials are conveyed pneumatically to enclosed loss-in-weight feeders, and then to hoppers associated with the extruder lines. At the extruder lines, raw material is extruded into thin wires via electric heating at 250 degrees Celsius and via shear/friction forces. The wires are cooled via water and the strand is rotary cut into pellets. Finally, the pellets are conveyed pneumatically to be packaged as the finished product.

EPC is divided into two sub-plants, EPC II and EPC III, each operating with its own extruders, dust collectors, and water scrubber. EPC II consists of three small extruders 4,5, and 6 installed in 1994; EPC III consists of four large extruders 7, 8, 9, and 10 installed in 1999. They are numbered sequentially from west to east. EPC 1 extruders (1,2, and 3) were removed many years ago.

2.1. EPC Extruding - Rule 286(2)(a)

The extruding lines and plastic storage silos are considered exempt from obtaining a PTI per Rule 286(2)(a) for plastic extrusion and associated plastic resin handling, storage, and drying equipment. The water venturi scrubbers and associated vents and duct cleaning systems were installed with the extruders under the same exemption.

I visited extruder lines 4, 5, 6, which were all operating. Steam could be observed coming off the extruder lines. I also visited extruder line 8, which was operating. I observed two hoods on extruder line 8 that appeared to be collecting steam vapors coming off of the extruder line. This appears to be the setup on each extruder. These hoods ventilate to one of the two water scrubbers on site before exhausting to ambient air.

I observed the water venturi scrubber for EPC II and was able to hear water flowing and observe water in the base of the scrubber. At 12:01 PM, the scrubber flow rate appeared to be 167 liters per minute. Most of the water in the scrubber is recirculated.

I observed the EPC III venturi scrubber, which was operating. I was able to observe the open bottom to the scrubber. Water is the solution used in each scrubber. There doesn't appear to be a flow rate gauge. Staff explained the scrubber seems to have a set flow rate without gauges. Water is mostly recirculated with some makeup water. Jordan explained that some bleach is also added to the water for cleanliness.

2.2. EPC Filler Material Handling - EUEPCFILLERHNDLG – Rule 290

Particulate emissions from activities associated with the extrusion process but not exempted under Rule 286(2)(a) are considered exempt from obtaining a PTI per Rule 290. This appears to include storage silos of materials other than plastics, and mixing and feeding of materials.

I observed the EPC II hoppers and their dust collectors. EPC II includes hopper dust collectors F-405Z-1, F-1040Z-3, F-1040Z-4 and F-1060Z-2. Chris explained that hopper dust collectors have their filters replaced every 6 months as preventative maintenance. Dust collectors have pulse jets to remove particulate cakes from the filter. I visited the roof to observe fabric filters installed on top of storage silos. This roof requires double hearing protection. I did not notice any issues with the filters. I was not able to view pressure drop across filters.

Blue mineral station dust collectors were also observed. These exhaust vertically above the roof, from facility discussions.

I also observed EPC III additive scales room on the main floor. These scales appeared to be controlled by a rectangular dust collector which exhausted out the side wall vertically. There also appear to be dust collectors that exhaust to the in-plant environment.

2.2.1 EUEPCFILLERHNDLG - FGEPGRULE 290 Special Conditions and Compliance Status

SC(s)	Brief Condition Summary	Determination	Explanation
I.1	Non-carcinogenic VOC emissions below 500 pounds per month.	Compliance	EUEPCFILLERHNDLG does not have VOC emissions.
I.2.a	Noncarcinogenic air contaminants limited to 500 pounds per month. (PM may fall into this category.) ¹	Compliance	EUEPCFILLERHNDLG PM emissions are controlled by dust collectors. Monthly emissions records from January 2021 through July 2022 show that the maximum PM emissions from EUEPCFILLERHNDLG were 20.7 pounds in January 2021. This is below the limit of 500 pounds PM per month.
I.3.a	Particulate emissions controlled via fabric filter or equivalent control system. ¹	Compliance	EUEPCFILLERHNDLG operations are controlled by fabric filter dust collectors.
I.3.b	Visible emissions less than 5% opacity. ¹	Compliance	Records of monthly opacity monitoring indicate that no visible emissions have been observed for EUEPCFILLERHNDLNG. I did not notice visible emissions while on site.
VI.1.e	Keep records to demonstrate compliance with Rule 290	Compliance	On September 29, 2022, BASF provided records of Rule 290 emissions for January of 2021 through July 2022 as requested by AQD.
VI.3	Perform monthly visible emission observations for emission units that emit particulate.	Compliance	On September 29, 2022, BASF provided monthly records of visible emission observations for January 2022 through July of 2022 as requested by AQD. EPC II hopper dust collectors correspond to stacks 13-16 on the provided monthly forms.

¹ Regarding particulate emissions, Rule 290 requires compliance with either (1) the pounds per month emission limit in FGEPGRULE 290 SC I.2 (Rule 290(2)(a)(ii)); or (2) particulate exhaust concentration and opacity requirements (no pounds/month emission limit) in FGEPGRULE 290 SC I.3 (Rule 290(2)(a)(iii)). BASF records indicate that the facility complies with both of these compliance methods; however only one of these compliance methods is required for particulate emissions under Rule 290.

2.3. Burn-off Oven – EUEPCOVEN - FGEPGRULE 290

EPC has a natural gas burn-off oven. It burns off plastic from parts. It services both EPC II and III. According to staff, it is operated about two times a week. I observed the oven during the inspection, and it happened to be operating. It appears to have an afterburner. I observed the following oven temperatures:

Time	Oven Temperature	Afterburner Temperature
12:04 PM	879 degrees Fahrenheit	1519 degrees Fahrenheit

BASF Plastics considers the burn-off oven exempt from obtaining a PTI per Rule 290 according to MAERS. According to the facility ROP, the oven was installed in 2009, so that it is subject to Rule 290 requirements at that time.

2.3.1. EUEPCOVEN - FGEPCCRULE 290 Applicable Special Conditions and Compliance Status

SC(s)	Brief Condition Summary	Determination	Explanation
I.1	Non-carcinogenic VOC emissions limited to 500 pounds per month.	Compliance	EUEPCOVEN VOC emissions are controlled by the oven afterburner. BASF calculates that 0.45 pounds VOCs are emitted monthly from the burn-off oven. These VOCs are from both natural gas and plastic combustion. 0.45 pounds VOCs per month is below the limit of 500 pounds VOCs per month.
I.2.a	Noncarcinogenic air contaminants limited to 500 pounds per month. (PM may fall into this category.) ¹	Compliance	EUEPCOVEN PM emissions are controlled by the oven afterburner. BASF calculates that 0.35 pounds PM are emitted monthly from the burn-off oven. 0.35 pounds PM per month is below the limit of 500 pounds PM per month.
I.3.a	Particulate emissions controlled via fabric filter or equivalent control system. ¹	Compliance	The afterburner for EUEPCOVEN provides control for particulate matter per an EPA fact sheet on afterburners. AQD did not request exhaust gas concentration and flow rate because opacity was not observed.
I.3.b	Visible emissions less than 5% opacity. ¹	Compliance	Records of monthly opacity monitoring indicate that no visible emissions have been observed for EUEPCOVEN.
VI.1.e	Keep records to demonstrate compliance with Rule 290	Compliance	On September 29, 2022, BASF provided records of Rule 290 emissions for January of 2021 through July 2022 as requested by AQD.
VI.3	Perform monthly visible emission observations for emission units that emit particulate.	Compliance	On September 29, 2022, BASF provided monthly records of visible emission observations for January 2022 through July of 2022 as requested by AQD.
<p>¹ Regarding particulate emissions, Rule 290 requires compliance with either (1) the pounds per month emission limit in FGEPCCRULE 290 SC I.2 for all air contaminants (Rule 290(2)(a)(ii)); or (2) particulate exhaust concentration and opacity requirements (no pounds/month emission limit) in FGEPCCRULE 290 SC I.3 (Rule 290(2)(a)(iii)). BASF records indicate that the facility complies with both of these compliance methods; however only one of these compliance methods is required for particulate emissions under Rule 290.</p>			

2.4. EPC Cold Cleaners – FGEPCCOLDCLEANERS

From discussions with facility staff, EPC does not appear to have any cold cleaners. The previous AQD staff report indicates the EPC cold cleaner was removed in April 2019.

3. Expanded Thermoplastic Urethane (ETPU) Operations – PTI No. 88-17

Bryan drove me to the ETPU plant, where we walked through the facility to the control room with screens displaying information about the ETPU operations and the regenerative thermal oxidizer (RTO) unit.

Talking with BASF staff, ETPU is in a long-term shutdown. Butane collection and hold tanks, tanks 780 and 880, are empty. The raw butane tank is empty. Per BASF staff, there has been no liquid butane since November of 2021.

The RTO is for the degassing silos, but there is nothing in these silos. As such, the RTO has no need to be up to temperature. AQD observed the temperature was ambient air or 76.6 degrees Fahrenheit. The condenser, which has a maximum operating temperature of -184 degrees Fahrenheit when operating, had the temperature of ambient air, or 72 degrees Fahrenheit.

Dust collectors F780, F880, and F841 were not operating.

Bryan drove me to the RTO, where I observed that the RTO stack exhausts unobstructed vertically to ambient air.

3.1. FGETPU Special Conditions and Compliance Status

SC(s)	Brief Condition Summary	Determination	Explanation
I.1, VI.1, 10, 11	VOC emissions limited to 70 tpy for warehouse super sacks, drying lines, and fugitives from both ETPU production lines.	Compliance	On September 29, 2022, BASF provided monthly VOC emissions calculations from January 2021 through July 2022, so that 12-month rolling records were available from December 2021 through July 2022 as requested by AQD. Maximum 12-month rolling VOC emissions were 1.32 tons VOC in December of 2021 and January of 2022.
I.2, VI.1, 10, 11	VOC emissions limited to 82 tpy for point source and fugitive emissions from both ETPU production lines.	Compliance	From BASF records, the maximum 12-month rolling VOC emissions were 1.33 tons VOC in December of 2021 and January of 2022. Records indicate butane was last used in May of 2021.
II.1, VI.10	Fresh butane limited to 875 tons per year.	Compliance	From BASF records, the maximum 12-month rolling butane consumption from December 2021 through July 2022 was 1.83 tons in December of 2021 and January of 2022. Records indicate butane was last used in May of 2021.
III.1-5	Do not operate EUETPUI&II and EUETPURAWMATERIAL unless operating procedures are implemented and maintained for the dust collector, butane collection system, condensation system, and RTO.	Compliance	EUETPUI, EUETPUII, and EUETPURAWMATERIAL have not been operated because ETPU is in a long-term shutdown. AQD did not request operating procedures.
IV.1-7	Do not operate EUETPUI&II and EUETPURAWMATERIAL unless dust collectors, butane hold tanks, condensation system, RTO, and RTO monitoring device are installed, maintained, and operated satisfactorily. RTO bypass valves can be installed as allowed by IV.7.	Compliance	EUETPUI, EUETPUII, and EUETPURAWMATERIAL have not been operated because ETPU is in a long-term shutdown.
V.1 and VI.4	Stack testing of RTO for VOC destruction efficiency; readily accessible records of test information.	Compliance	Stack testing occurred on October 16, 2019. The stack test report was received by AQD December 2, 2019. Destruction efficiency was 98.8% and RTO combustion zone temperature average was 1550.17 degrees Fahrenheit.
VI.2-3, 5-9, 12, 13	Monitor RTO combustion temperature; inspect RTO; maintain retention time demonstration; monitor pressure drop; record thermal oxidizer temperature and pressure drop of dust collectors; record RTO temperature exceedances; record condenser temperature	Not evaluated	AQD did not request records of this monitoring because ETPU is in a long-term shutdown.

	and instances where butane is not captured.		
IX.1	PTI 88-17 will become void if the RTO is not installed and operating by December 31, 2018	Compliance	BASF notified AQD on December 14, 2018 that the RTO was installed and operating.
III.1, IV.1, VI.6 and 8	Do not operate ETPUI, ETPUII, or raw material storage unless control equipment operated properly	Compliance	AQD did not request records of control equipment operation. Control equipment does not need to be operated while ETPUI, ETPUII, and raw material storage are in their current long-term shutdown.

3.2. Rule 290 Equipment - FGETPURULE290

From the previous Air Quality inspection report in October of 2019, there were not Rule 290 units associated with the ETPU plant. AQD did not evaluate FGETPURULE290 for compliance because ETPU is in a long-term shutdown.

3.3. ETPU Cold Cleaners - FGETPUCOLDCLEANER

Bryan confirmed the ETPU facility does not contain a cold cleaner.

4. Site-Wide Regulatory Discussion

4.1. MI-ROP-M4777-2015a, Sections 1 through 3, General Conditions

These general conditions (GC) are listed in each ROP section and are addressed here in total.

GC(s)	Brief Condition Summary	Determination	Explanation
9, 10	Collected air contaminants shall be removed to maintain controls at required collection efficiency; air cleaning devices installed and operated in a satisfactory manner.	Compliance	Controls appeared to be installed and operated properly.
11	Visible emissions limited to 20% over a six-minute average, with the exception of one 27% opacity per hour.	Compliance	Visible emissions were not observed during the inspection.
12	Nuisance emissions prohibited.	Compliance	There have been no Rule 901 violations for the BASF Wyandotte operations in the period since the last inspection.
19-23, 25 (and individual EU/FG tables at SCs VII.1-3)	Certification of reports and prompt reporting of deviations.	Compliance	Annual certifications and semiannual deviation reports were received timely.
24	Annual emissions inventory submittal.	Compliance	AQD received BASF Plastics' emissions inventory timely on March 24, 2022. The deadline was extended to March 25, 2022.

4.2. MI-ROP-M4777-2015a, Sections 1 through 3, SOURCE-WIDE

These plant-wide special conditions are repeated at the beginning of each ROP section and are addressed here in total.

SC(s)	Brief Condition Summary	Determination	Explanation
I.1 and 2, VI.1-3	Hazardous Air Pollutant (HAP) emissions limited to less than 10.0 tons per 12-month rolling time period for each individual HAP and	Compliance	BASF provided monthly and 12-month rolling site-wide HAP emission totals for the time period of January 2021 through July of

	<p>25.0 tons per 12-month rolling time period for combined HAPs; records; these requirements apply to the three stationary sources B4359, M4777, and M4808 combined.</p>	<p>2022. Records indicate that the highest 12-month rolling individual HAP emissions were 2.6 tons of acrylic acid for each month from January 2021 through July of 2022. The highest 12-month rolling aggregate HAP emissions were 13.97 tons in September of 2021. These emissions are below the facility emission limits.</p>
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Conclusion

The facility appears to be in compliance with applicable state and federal regulations.

NAME 

DATE 1/30/23

SUPERVISOR JK