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

N143658879

FACILITY: FCA US LLC - Chrysler Technology Center		**SRN / ID:** N1436
LOCATION: 800 Chrysler Drive, AUBURN HILLS		**DISTRICT:** Warren
CITY: AUBURN HILLS		**COUNTY:** OAKLAND
CONTACT: Stuart Weiss , Air Compliance Specialist		**ACTIVITY DATE:** 05/06/2021
STAFF: Adam Bognar	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On Thursday, May 6, 2021, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) employee Adam Bognar conducted a scheduled inspection of FCA US LLC – Chrysler Technology Center (the "Facility" or "FCA Tech Center") located at 800 Chrysler Drive, Auburn Hills, Michigan 48326. The purpose of the inspection was to determine the facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules; Renewable Operating Permit No. MI-ROP-N1436-2018; and Permit to Install No. 155-18.

Due to the Covid-19 Pandemic, all records were reviewed electronically. The on-site inspection conducted on May 6, 2021 was a facility-walk through only. We did not conduct any meetings and I did not collect any records during my on-site inspection. Mr. Weiss provided all records that I requested digitally.

The FCA US LLC – Chrysler Technology Center campus is comprised of approximately 5.5 million square feet of space. This large footprint makes this one of the largest buildings in the United States. FCA Tech Center performs research and development for automobile, light duty truck, and vehicle component manufacturing. Operations include dynamometer test cells, pilot assembly processes, test painting, and various lab activities. Prior to the COVID-19 pandemic, there were approximately 16,000 workers at this facility. This number was reduced to approximately 1500-2000 after re-opening after the Governor's "stay at home" order. The number of employees on-site is gradually increasing.

This facility is located in Oakland county which is currently designated as non-attainment for ozone based on the National Ambient Air Quality Standards (NAAQS). Oakland county is designated as attainment for all other criteria pollutants.

I arrived at the facility at 9 am. I met with Mr. Stuart Weiss, Air Compliance Specialist. I followed FCA Tech Center's Covid-19 Protocol, which included filling out a form at home prior to the inspection. The form indicated that I have not experienced any recent symptoms of Covid-19 and have not been exposed to someone who has tested positive or has symptoms. After submitting the form, my temperature was taken. After my temperature was taken, I was allowed into the facility. I identified myself and stated the purpose of the inspection.

MI-ROP-N1436-2018

EU-12HWG-1.07

This emission unit is one natural gas-fired boiler with a heat input of 40 million BTU/hour. This boiler utilizes natural gas exclusively and is equipped with low NOx burners. The boiler is subject to 40 CFR Part 60, Subpart Dc – New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units.

Section III – SC 1: States that the permittee shall only fire pipeline quality natural gas in the boiler. Mr. Weiss stated that natural gas is the only fuel fired in all boilers at FCA Tech Center. There is some amount of No. 2 fuel oil on site that could be used in an emergency but is otherwise not used. The records I reviewed indicate only natural gas usage in boilers.

Section VI – SC 1: States that the permittee shall monitor and record the fuel usage for EU-12HWG-1.07 on a monthly basis in a manner and with instrumentation acceptable to the AQD district supervisor. These records are maintained in accordance with this condition and 40 CFR Part 60, Subpart Dc. Total natural gas usage for all of 2020 was reported at 108MM SCF.

Section VI – SC 2: States that the permittee shall develop a boiler preventative maintenance program and log preventative maintenance. A preventative maintenance program is maintained. Mr. Weiss stated that no recent changes have been made to the boiler PM program.

Section IX – SC 1: States that the permittee shall comply with 40 CFR Part 60, Subpart A, 40 CFR Part 63, Subpart DDDDD, and 40 CFR Part 60, Subpart Dc. EU-12HWG-1.07 appears to be in compliance with these federal requirements. The requirements of Subpart DDDDD are discussed below under FG-BOILERMACT. The facility complies with 40 CFR Part 60, Subpart Dc by maintaining records of fuel usage and submitting bi-annual compliance certification reports.

FG-BOILERS

This flexible group consists of four (4) boilers using natural gas as primary fuel with fuel oil No. 2 as backup, and five (5) boilers using natural gas exclusively.

Section I – SC 1,2,3: Places limits on Sulfur Dioxide (SO_2) emissions. Sulfur Dioxide emissions from FG-BOILERS are limited to 104.7 lb/hr and 232.9 tons/year. Facility is in compliance with the annual emission limit based on the records I reviewed. In 2020, the facility reported a total of 0.099 tons of Sulfur Dioxide was emitted. The highest reported monthly sulfur emissions were in February 2020 at 0.019 tons, which corresponds to an average hourly emission rate of .054 lb/hour.

Section I – SC 4: Places a limit on the emission of Nitrogen Oxides (NOx) of 85.8 tons/year. The facility is in compliance with this emission limit based on the records I reviewed. In 2020, the facility reported a total of 16.44 tons of NOx. The highest reported emissions were during the 12-month rolling period ending in January 2020 at 20.26 tons.

Section II – SC 1,2: Limits natural gas usage in FG-BOILERS to 521.5 million cubic feet/year. Facility is in compliance with this emission limit based on the records I reviewed. In 2020, the facility reported natural gas usage in FG-BOILERS at 328.9 million cubic feet. The highest reported 12-month rolling total was in January 2020 at 405.4 million cubic feet. Fuel Oil No. 2 usage is restricted to 6,415,000 gallons/year. Based on the records I reviewed, Fuel Oil No. 2 has not been used in the past two years. 100 gallons of Fuel Oil No. 2 were used in EG-12 -1.03 in January 2019. No Fuel Oil has been used in boilers since then.

Section III – SC 1,2: States that the permittee shall only fire pipeline quality natural gas in the following boilers: 12-HWG-1.05, 12-HWG-1.06, 16-B4.01, 16-B-4.02 and 16-B-4.03. Additionally, these conditions state that the permittee shall only fire natural gas or Fuel Oil No. 2 in the following boilers: 12-HWG-1.01, 12- HWG-1.02, 12-HWG-1.03 and 12-HWG-1.04. These boilers are operated with the appropriate fuels based on the records I reviewed.

Section V – SC 1: States that the permittee shall determine the sulfur content of No. 2 fuel oil by fuel supplier certification or fuel sample test data for any fuel oil used in FG-BOILERS. The fuel oil was sampled in 2018 and found to contain 386.4 ppm sulfur.

Section VI – SC 1,2: Requires the permittee to monitor and record the quantity and type of each fuel used in each boiler on a monthly and 12-month rolling basis. For any Fuel Oil No. 2 shipment, the permittee must keep a record of sulfur content, heat content, and quantity received. These records are maintained. Fuel usage for each boiler is monitored and recorded separately for each 12-month rolling period.

Fuel Oil No. 2 is used very seldomly. The fuel oil currently on-site has been there for many years. The only time this fuel oil has been used in recent times was for a 100-gallon test conducted in 2019. The fuel oil used for the 100-gallon test was sampled in 2018 and found to contain 386.4 ppm sulfur.

Section VI – SC 3: States that the permittee shall monitor and record the boiler monthly hours of operation. The run-time hours are recorded for all boilers in FG-BOILERS combined. Run-time is reported at 8,784 hours in all of 2020.

Section VI – SC 4: States that the permittee shall keep a record of the average hourly and monthly 12-month rolling emissions of SO_2. These records are kept.

Section VI – SC 5: States that the permittee shall keep a record of the monthly and 12-month rolling emissions of NOx. NOx emissions from FG-BOILERS are recorded in this manner.

Section VI – SC 6: States that the permittee shall develop a boiler preventative maintenance program and log preventative maintenance. A preventative maintenance program is maintained. Mr. Weiss stated that no recent changes have been made to the boiler PM program.

Section IX – SC 1: Section IX – SC 1: States that the permittee shall comply with 40 CFR Part 60, Subpart A, 40 CFR Part 63, Subpart DDDDD, and 40 CFR Part 60, Subpart Dc. EU-12HWG-1.07 appears to be in compliance with these federal requirements. The requirements of Subpart DDDDD are discussed below under FG-BOILERMACT. The facility complies with 40 CFR Part 60, Subpart Dc by maintaining records of fuel usage and submitting bi-annual compliance certification reports.

FG-BOILERMACT

This flexible group contains four (4) boilers using natural gas as primary fuel with fuel oil No. 2 as backup, and eight (8) boilers using natural gas exclusively. This flexible group is applicable to the following emission units when operating as a “Unit designed to burn gas 1 subcategory.” This includes gaseous fuel boilers that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year and gaseous fuel boilers that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration.

Section II – SC 1: States that the permittee shall only burn fuels as allowed in the unit designed to burn gas 1 subcategory definition in 40 CFR 63.7575. The permittee only burns natural gas in these boilers based on the records I reviewed. Fuel oil #2 was briefly used as a short test run several years ago but has not been used since.

Section III – SC 1,2,3,4,5,6: Specifies process/operational restrictions for FG-BOILERMACT. The boilers in the central energy plant are equipped with oxygen trim systems. The boilers are considered existing units because they commenced construction before June 4, 2010. Tune ups are conducted at least once every five years in accordance with 40 CFR Part 63 Subpart DDDDD (Boiler MACT). I requested and received documentation for the most recent tune up of EG-12-HWG-1.03. Based on the documentation, this tune up was performed within the last five years (September 2020). Mr. Weiss also provided documentation from MACT DDDDD showing why boilers of this size with oxygen trim systems require tune ups every five years.

Section VI – SC 1,2,3,4,5: Specifies recordkeeping requirements for FG-BOILERMACT. FCA appears to be in compliance with recordkeeping requirements of FG-BOILERMACT. FCA maintains records of any alternative fuels used, performance tests completed, and all semi-annual/annual reports.

Section IX – Specifies other requirements for FG-BOILERMACT. The facility appears to be in compliance with 40 CFR Part 63, Subpart DDDDD based on the inspection and records that I reviewed. FCA Tech center performs tune -ups of boilers according to Subpart DDDDD.

FG-B/UP-TURBINES

This flexible group consists of two natural gas-fired turbine generators used for peaking.

Section I – SC 1,2: Establish emission limits for Nitrogen Oxides (NOx). NOx emissions are limited to 89.29 pounds per hour (pph) and 35.72 tons/year. This facility is not in compliance with these emission limits based on the records I reviewed. The 12-month period I reviewed with the highest emissions is June 2020 at 3.07 tons. NOx emissions were reported at 0.28 tons for all of 2020. The engines were operated for a total of 9.4 hours in 2020 and 2.9 hours in the first 3 months of 2021.

Based on the records I reviewed, the hourly NOx emission rate was exceeded by Unit 1 in September 2020 at 271 pph and in June 2021 at 451.2 pph. The hourly NOx emission rate was exceeded by Unit 2 in June 2021 at 143.5 pph. A violation notice was sent to FCA US LLC – Chrysler Technology Center to address this non-compliance.

Section I – SC 3,4: Establish emission limits for CO. CO emissions are limited to 16.23 lb/hour and 6.5 tons/year. The facility is not in compliance with these emission limits based on the records I reviewed. CO emissions were highest during the 12-month rolling period ending in June 2020 at 0.56 tons. CO emissions were reported at 0.05 tons for all of 2020.

Based on the records I reviewed, the hourly CO emission rate was exceeded by Unit 1 in September 2020 at 49.23 pph and in June 2021 at 81.82 pph. The hourly CO emission rate was exceeded by Unit 2 in June 2021 at 26.02 pph. A violation notice was sent to FCA US LLC – Chrysler Technology Center to address this non-compliance.

Section I – SC 5: Limits sulfur content in natural gas to 0.8%. Mr. Weiss stated that CMS Energy provides FCA-CTC with natural gas that meets Mich. Admin. Code R.460.2381(1) - 20 grains sulfur per 100 cubic feet. This equates to approximately 0.03%.

Section II – SC 1: Limits natural gas usage to 190.2 MM cubic feet/year for both turbines combined. In the 12-month periods ending in June 2020 & July 2020 the total natural gas use for both turbines combined is reported at 16.3 MM cubic feet. This is the highest reported 12-month rolling usage for the period I reviewed.

Section III – SC 1,2,3: Specifies process/operational restrictions for FG-B/UP-TURBINES. The turbines are only operated as needed during a power outage. The units burn only pipeline quality natural gas. The turbines were not operated for more than 400 hours based on a 12-month rolling time period. In 2020, Unit 1 was operated for a total of 4.9 hours and Unit 2 was operated for a total of 4.5 hours.

Section VI – SC 1: States that the permittee shall monitor and record the monthly hours of operation of each turbine. These records are maintained.

Section VI – SC 2,3: Requires the permittee to keep 12-month rolling records of fuel consumption, total NOx emissions, and total CO emissions. These records are maintained.

Section VI – SC 4: States that the permittee shall develop a turbine preventative maintenance program and log preventative maintenance. A PM program is maintained. Mr. Weiss stated that there have been no recent changes to the PM program.

FG-EMERGENCY-RICE

This flexible group includes existing emergency stationary reciprocating internal combustion engines that have a maximum site rating of 500 brake horsepower and less than 30 liters per cylinder located at a major source of hazardous air pollutants (EU-FIREPUMP-1 & EU-FIREPUMP-2).

Section III – SC 1,2,3,4,5,6,7,8,9: Specifies process/operational restrictions for FG-EMERGENCY-RICE. The permittee appears to comply with these process/operational restrictions. Maintenance records show that the oil filter on both units was changed in June 2020. The engines have not exceeded 100 hours for maintenance checks and readiness testing. CEP Fire Sprinkler and HQ Tower Fire Sprinkler operated for 27.9 and 29.6 hours, respectively, in 2020.

Section IV – SC 1: States that the permittee shall install a non-resettable hour meter on each engine. Both engines are equipped with a non-resettable hour meter. During my previous inspection in July 2020, the CEP Fire Sprinkler hour meter showed 808 hours and the HQ Tower Fire Sprinkler showed 594 hours. I did not verify engine hours during this inspection.

Section V – SC 1: NA since oil analysis program is not used.

Section VI – SC 1: Requires the permittee to keep records of the hours of operation of each engine using a non-resettable hour meter. Additionally, the permittee must differentiate and document how many of these hours are used for emergency operation, non-emergency operation, and demand response operation. For emergency operation, the permittee must document what classified the operation as emergency.

Since January 2019, these engines have not been operated for emergency or demand response purposes. Both engines are operated for around 2 hours per month for testing & maintenance purposes. Total operating hours in 2020 used for testing & maintenance of EU-FIREPUMP 1 & EU-FIREPUMP 2 are 27.9 hours and 29.6 hours, respectively.

Section VI – SC 2,3: Requires the permittee to keep records of the occurrence, duration, and steps taken to mitigate each malfunction of operation. Based on the records I reviewed there have been no malfunctions in FG-EMERGENCY-RICE since January 2019. FCA-CTC does its fire pump maintenance in accordance with NFPA25 with additional steps provided by FCA to the contractor.

Section VI – SC 4: Requires the permittee to keep records of the parameters that are analyzed in the oil analysis program. The oil analysis program is not used. An annual tune up is performed on both engines each year. The oil is changed during these tune ups. Mr. Weiss provided me with documentation indicating that engine tune-ups were performed in June 2020.

Section VI – SC 5: States that the permittee shall maintain maintenance records for FG-EMERGENCY-RICE. I verified that maintenance records are maintained for both engines in this flexible group.

Section VI – SC 6: Requires the permittee to keep records of the sulfur content of the diesel fuel used in FG-EMERGENCY-RICE. According to the diesel fuel supplier the fuel contains less than 15 ppm sulfur.

Section IX – SC 1,2: States that the permittee shall comply with 40 CFR Part 63, Subparts A – General Provisions, and ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. FCA appears to be in compliance with these standards.

Section 2 – Scientific Labs

EU-KIRKSITEFURN
This emission unit consists of an electrically heated melting furnace. Kirksite is a zinc-based metal casting formulation. Casting operation utilizes Pep Set sand mold. Processing of the mold and core is exempt under R 336.1282(2)(a)(iv).

Section V – SC 1: States that the permittee shall conduct and record visible emission readings on EU-KIRKSITEFURN once during each 5-year period. Mr. Weiss provided me with the test report for this test. This test was performed on October 12, 2017. No visible emissions were observed during the test. Visible opacity is not likely unless some contaminant ends up inside the furnace.

FG-TESTCELLSA
This flexible group contains fourteen engine dynamometer test cells located in Wing A. At the time of installation, these test cells were exempt from the requirements of R 336.1201 pursuant to R 336.1285(d) (currently R 336.1285(2)(g)).

Section I – SC 1: Limits SO2 emissions to 1.7 lb/MMBTU heat input of fuel oil. This limit only applies when the test cells are fired by fuel oil. No fuel oil has been used in these dynamometers since January 2019.
Section VI – SC 1: States that when the engines are fired by fuel oil, the permittee shall maintain a record of the fuel specifications. No fuel oil has been used in FG-TESTCELLSA since January 2019.

Section VI – SC 2: States that the permittee shall maintain a record of the date of installation for each engine test cell. All of these dynamometers were installed in October 1990 at the same time. FCA Maintains written correspondence with the AQD from the 1990's showing that these dynamometers were installed in October 1990.

Section VI – SC 3: Requires the permittee to record the types and amounts of fuel used per calendar year. These records are maintained. The total fuel consumption in 2020 was 63,702 gallons of gasoline.

FG-ENGPAINTSHOP
This flexible group consists of Surface coating and associated auxiliary coating equipment located at the engineering paint shop.

Section I – SC 1,2,3,4,5,6: These conditions establish several emission limits for VOC. VOC emissions are limited to 1185.6 lbs/day and 30.3 tons per year. The facility is in compliance with these emission limits based on the records I reviewed. Total VOC emissions for 2020 were reported at 3.3 tons. The highest 12-month rolling total during the period I reviewed was in January 2020 at 4.3 tons. The highest monthly emission rate was during March 2021 at 718.7 lbs. Based on the reported highest monthly emission rate, the daily VOC emission limit has not been exceeded.

Additionally, these conditions limit VOC content of coatings depending on the process the coatings are used in. VOC content minus water, as applied, is limited to 3.6 lb/gallon for plastic parts, 5.16 lb/gallon for primer/surfacer painting process, 5.44 lb/gallon for prime painting process, and 6.60 lb/gallon for top coat painting process. Painting is not done on plastic parts. Mr. Weiss provided manufacturers formulation data showing the VOC content for the above coating types. This data includes the VOC content of the raw coating as received, both with and without water. The facility appears to meet these VOC content restrictions. See table below for the facility's current maximum VOC formulations.

Coating Type	VOC Content (lb/gallon)	VOC Content minus water (lb/gallon)	Limit (lb/gallon)
Topcoat (65-950-4037 Bright White + reducer)	6.15	6.23	6.60
Primer/Surfacer (NCP-250 + NCX-255)	4.28	4.64	5.16
Primer Paint (DP-50-LF + DP-401-LF)	4.49	4.49	5.44

Section III – SC 1: States that the permittee shall not operate any spray booth unless the filters are installed and operating in a satisfactory manner. I observed that the filters were in place in 3 of the 4 booths; however, there was 1 filter square that had fallen out of place in Booth 4.

The booth operator explained that he does not know how/when the filter fell out. No painting was taking place during my inspection. This missing filter square likely amounts to 5% or less of the total filter size. To address this issue, I asked Mr. Weiss to implement an identical program in FG-ENGPAINTSHOP as that implemented in EU-PRODDSGNPAINT. Specifically, I requested that FCA staff check the filter system prior to painting each day and make a note of these checks in a daily log. Mr. Weiss agreed to implement this program.

AQD will not issue a violation notice for this issue. No painting was taking place during my inspection. Neither FCA nor AQD knows if painting took place while the filter was out of place. The missing filter square only accounts for a small percentage of the total filter size. FCA has implemented a program where booth filters will be checked each day prior to painting. If AQD notices filters out of place in future inspections, then a violation notice will be issued.

Section III – SC 2: States that waste coatings and solvents shall be stored in closed containers. I observed that waste coatings are stored in sealed containers outside of the paint booths.

Section VI – SC 1: Requires the permittee to keep a record of the identity of each coating and the coating category to which it belongs. These records are maintained. Coatings are classified by their coating category in the same database where coating usage is reported.

Section VI – SC 2: States that the permittee shall keep a daily usage rate for each coating, in gallons. These records are maintained. Daily coating usage is generally less than 10 gallons.

Section VI – SC 3,4,5: Requires the permittee to keep a record of the VOC content of each coating as received and as applied, both with and without water. These records are maintained.

Section VI – SC 6: Requires the permittee to record daily and 12-month rolling VOC emissions. These records are maintained.

Section VI – SC 7: Requires the permittee to determine the VOC content of coatings using Method 24. As an alternative, the VOC content may be determined from formulation data. VOC content is currently determined from formulation data.

FG-CNTRLDCELLS

This flexible group contains forty-six (46) engine dynamometer test cells located in Wing C, Wing D and Wing E (durability, transmission and catalyst test cells). The 46 engine dynamometer test cells house a total of 80 engine dynamometer test stands. Emissions from these test cells are controlled with thermal oxidizers. All Wing D test cells are controlled. Wings C and E have both controlled and uncontrolled test cells. Wings A and B are uncontrolled test cells.

Section I – SC 1,2: Establish emission limits for Nitrogen Oxides (NOx). NOx emissions are limited to 0.1049 lbs/gallon and 218.2 tons/year. The facility is in compliance with these emission limits based on the records I reviewed. NOx emissions were highest during the 12-month period ending in May 2021 at 83.6 tons. Based on the results of the most recent stack test, NOx emissions are 0.0838 lb/gallon.

Section I – SC 3,4: Establish emission limits for Carbon Monoxide (CO). CO emissions are limited to 0.01 lbs/gallon and 20.8 tons/year. The facility is in compliance with these emission limits based on the records I reviewed. CO emissions were highest during the 12-month period ending in May 2021 at 8 tons. Based on the results of the most recent stack test, CO emissions are 0.0024 lb/gallon.

Section I – SC 5,6: Establish emission limits for Volatile Organic Compounds (VOC). VOC emissions are limited to 0.006 lb/gallon and 12.5 tons per year. The facility is in compliance with these emission limits based on the records I reviewed. VOC emissions were highest during the 12-month period ending in May 2021 at 4.8 tons. Based on the results of the most recent stack test, VOC emissions are near zero/non-detect. VOC emissions are estimated using the 0.006lb/gallon limit as the emission factor.

Section I – SC 7: Limits Lead emissions to 0.58 tons/year. The facility is in compliance with this emission limit based on the records I reviewed. The facility is well below their lead emission limit based on the records I reviewed. Lead emissions were highest during the 12-month period ending in May 2021 at 0.007 tons.

Section II – SC 1,2,3: Establish material limits for fuels. Unleaded fuel use in FG-CNTRLDCELLS is limited to 4,160,700 gallons/year or 26,311 gallons/day. Leaded gasoline use is limited to 95,000 gallons/year for both FG-CNTRLDCELLS and FG-UNCNTRLDCELLS. The facility is in compliance with these material usage limits based on the records I reviewed. Unleaded fuel usage is reported highest during the 12-month period ending in May 2021 at 1,601,218 gallons. Facility reported that no leaded fuel was used for the period I reviewed.

Daily unleaded gasoline usage is reported as a monthly average. The total gallons used per month in each test cell is divided by the number of days the test cell operated to get an average daily usage for each test cell. The averages for each test cell are added together to obtain the total average daily usage. Average daily fuel use is reported between 4,973 gallons on the low end up to 11,187 gallons on the high end of usage.

Section III – SC 1: States that the permittee shall not operate the durability and transmission test cells unless the associated thermal oxidizers are installed, maintained, and operated in a satisfactory manner. Proper operation of the thermal oxidizers includes maintaining a 3-hour average minimum combustion chamber temperature of either 1400°F or the value established during the most recent stack test. The most recent stack test in April 2017 established a minimum combustion chamber temperature of 1500°F. The oxidizers must also have a retention time greater than 0.5 seconds. FCA is in compliance with these limits based on this inspection and record review. I collected temperature data during my inspection on all operating thermal oxidizers. Of the 11 total thermal oxidizers, 6 were operating during this inspection. See table below for temperature data collected during this inspection.

Wing	Oxidizer	Set Point (°F)	Temperature during inspection (°F)
C	91-THO-4.02	1515	1513
C	91-THO-4.03	1520	1515
D	92-THO-4.02	1515	1511
D	92-THO-4.03	1515	1539
D	92-THO-4.06	1515	1517
E	93-THO-4.01	1520	1513

Section V – 1,2,3: Specifies testing/sampling requirements for FG-CNTRLDCELLS. NOx, VOC, and CO testing has been performed in the past 5 years. NOx and CO stack testing was conducted on March 22, 2017. VOC stack testing was conducted on August 31, 2016. Facility submitted all required documentation.

Section VI – SC 1,2: States that the permittee shall monitor and record the fuel usage and the number of days operated for each test cell on a monthly basis. These records are maintained and used to calculate the daily average fuel usage required by Section VI – SC 3. These values are summed into 12-month rolling records required by Section VI – SC 4. Leaded fuel is accounted for in accordance with Section VI – SC 5.

Section VI – SC 6: States that the permittee shall keep records of the maximum lead content for each type of fuel used. These records are kept. Based on the records I reviewed the maximum lead content is 0.02 ppm for ultra-low sulfur diesel fuel and 0.05 grams/gallon in regular gasoline.

Section VI – SC 7,8,9,10: Require the permittee to maintain 12-month rolling emission records for NOx, CO, VOC, and Lead. These records are maintained.

Section VI – SC 11: States that the permittee shall install and maintain a device to monitor the temperature of the thermal oxidizer combustion chamber. This temperature monitor shall record average temperatures for every 3-hour period. These records are maintained. Based on the records I reviewed the oxidizers are operated at approximately 1550 degrees Fahrenheit. The data sheets provided to me showed average temperatures for every -15 minute period.

Section VI – SC 12: Requires stack test data be used for monthly emission calculations. Stack test data is used for these calculations.

Section IX – SC 1: States that the permittee shall comply with the approved written plan for the collection, analysis, and recording of data used to determine compliance with the fuel use limits. This plan has been

followed based on the records I reviewed. No recent changes have been made to this plan since the last ROP issuance.

Section IX – SC 2: States that a Malfunction Abatement Plan (MAP) shall be kept on file at the facility. I verified that a malfunction abatement plan is kept and has been updated to reflect recent changes.

FG-CAMTO

FG-CAMTO consists of 11 natural gas fired thermal oxidizers (TO) serving forty-six (46) dynamometer test cells. The 46 engine dynamometer test cells house a total of 80 engine dynamometer test stands.

Section VI – SC 1: Requires the permittee to utilize three thermocouples in each thermal oxidizer. FCA utilizes three thermocouples in each oxidizer – one on the inlet, and two located inside the combustion chamber. These thermocouples shall ensure that the combustion chamber temperature remains above 1400 degrees Fahrenheit, or the temperature established during the most recent stack test (1500°F), and that the thermal oxidizer will meet applicable emission limits. Based on the records I reviewed the temperature of the oxidizers is kept above 1500°F degrees when the oxidizer is operating. Not all thermal oxidizers operate simultaneously. Oxidizers are turned on as needed based on how many test cells are being utilized.

Section VI – SC 2: Requires the permittee to calibrate or install new thermocouples on an annual basis. The device that translates the thermocouple signal into temperature readout must also be calibrated annually. These maintenance activities are performed annually. Mr. Weiss provided me with work order numbers for these preventative maintenance activities. The work orders show that each thermal oxidizer was serviced once in 2020.

Section VI – SC 3: States that the permittee shall continuously record the TO temperature data when an engine is operating in FG-CNTRLDCELLS. Based on the TO temperature records I reviewed the data is recorded continuously.

Section VI – SC 4,5,6,7,8: Specifies CAM plan requirements. FCA Tech Center appears to be in compliance with the CAM rule requirements. The CAM plan includes provisions for maintaining necessary parts for routine repair of the monitoring system. Records of monitoring data for the thermal oxidizers are maintained. FCA submitted a CAM semi-annual report and a CAM Excursions/Exceedance report by March 15, 2021.

Section IX – SC 1,2,3,4: Specifies additional CAM requirements. Facility appears to be in compliance with the CAM rule requirements. No deviations were reported. There were no reported instances of monitor downtime for the period reviewed. Facility is not currently required to submit/maintain a Quality Improvement Plan (QIP).

FG-UNCNTRLDCELLS

FG-UNCNTRLDCELLS consists of thirty-four (34) engine dynamometer test cells (performance test cells) located in Wings B, C and E. The 34 engine dynamometer test cells house a total of 34 engine dynamometer test stands. Performance test cells do not have emission control equipment.

Section I – SC 1,2: Establish emission limits for Nitrogen Oxides (NOx). NOx emissions are limited to 32.1 tons/year using an emission factor of 0.2 lb/gallon fuel (ROP requires this emission factor to be used for emission calculations). The facility is in compliance with these emission limits based on the records I reviewed. NOx emissions were highest during the 12-month period ending in May 2021 at 24.2 tons. During the most recent stack test, NOx emissions were reported at 0.0012 lb/gallon. The maximum NOx lb/gallon limit from the permit is used for emission calculations, which is acceptable since the stack test values are even less than the permit limit.

Section I – SC 3,4: Establish emission limits for Carbon Monoxide (CO). CO emissions are limited to 501 tons/year with an emission factor of 3.12 lb CO/gallon fuel (ROP requires this emission factor to be used for emission calculations). The facility is in compliance with these emission limits based on the records I reviewed. CO emissions were reported highest during the 12-month period ending in May 2021 at 377 tons. During the most recent stack test, CO emissions were reported at 0.030 lb/gallon.

Section I – SC 5,6: Establish emission limits for Volatile Organic Compounds (VOC). VOC emissions are limited to 25.7 tons per year with an emission factor of 0.16 lb/gallon fuel (ROP requires this emission factor to be used for emission calculations). The facility is in compliance with these emission limits based on the records I reviewed. VOC emissions were reported highest during the 12-month period ending in May 2021 at 19.3 tons. During the most recent stack test, VOC emissions were reported at 0.030 lb/gallon.

Section I – SC 7: Limits Lead emissions to 0.37 tons/year. The facility is in compliance with this emission limit based on the records I reviewed. Lead emissions were reported highest during the 12-month period ending in May 2021 at 0.02 tons.

Section II – SC 1,2,3: Establish material limits for fuels. Unleaded fuel use in FG-UNCNTRLDCELLS is limited to 320,952 gallons/year and 2,362 gallons/day. Leaded gasoline emissions are limited to 95,000 gallons/year for both FG-CNTRLDCELLS and FG-UNCNTRLDCELLS. The facility is in compliance with these material usage limits based on the records I reviewed. Unleaded fuel usage is reported highest during the 12-month period ending in May 2021 at 241,640 gallons. Facility reported that no leaded fuel was in the period reviewed.

Daily unleaded gasoline usage is reported as an average. The total gallons used per month in each test cell is divided by the number of days that test cell operated to get an average daily usage for each test cell. The averages for each test cell are added together to obtain the total average daily usage. Average daily fuel use is reported between 667 gallons and 1112 gallons.

Section V – SC 1,2,3: Requires FCA Tech Center to verify NOx, CO, and VOC emission rates from a representative number of performance cells every 5 years. This test was last completed on August 31, 2016. Mr. Weiss informed me that FCA Tech Center is planning another stack test this year before the August 31, 2021 due date.

Section VI – SC 1,2: States that the permittee shall monitor and record the fuel usage and the number of days operated for each test cell on a monthly basis. These records are maintained and used to calculate the daily average fuel usage required by Section VI – SC 3. These values are summed into 12-month rolling records required by Section VI – SC 4. Leaded fuel is accounted for per Section VI – SC 5.

Section VI – SC 6: States that the permittee shall keep records of the maximum lead content for each type of fuel used. These records are kept. Based on the records I reviewed the maximum lead content is 0.02 ppm for ultra-low sulfur diesel fuel and 0.05 grams/gallon for regular gasoline.

Section VI – SC 7,8,9,10: Require the permittee to maintain 12-month rolling emission records for NOx, CO, VOC, and Lead. These records are maintained.

Section IX – SC 1: States that the permittee shall comply with the approved written plan for the collection, analysis, and recording of data used to determine compliance with the fuel use limits. This plan has been followed based on the records I reviewed. No changes have been made to this plan since the last ROP was issued in 2018.

FG-GASTANKS

This flexible group contains any existing or future emission unit that emits air contaminants that are exempt from the requirements of R 336.1201 pursuant to R 336.1284(2)(g)(i). FG-GASTANKS currently includes six (6) underground gasoline storage tanks for Wet Fuels Building, eighteen (18) underground gasoline storage tanks at the South Tank Farm and three (3) underground gasoline storage tanks at the North Tank Farm.

Section III – SC 1,2: States that the permittee shall not receive deliveries of gasoline in these storage tanks unless a submerged fill pipe and vapor balance system is present. I observed that a submerged fill pipe is present. Mr. Weiss sent me a photo of a recent gasoline delivery which showed that a vapor balance/recovery system was connected during the delivery.

Section IV – SC 1,2: States that the tanks shall have systems in place to ensure that the vapor-tight collection lines are connected before any gasoline is loaded. FCA Tech Center employees utilize a checklist for each gasoline delivery to ensure that the hoses are connected before unloading gasoline.

Section VI – SC 1: Requires the facility to keep records indicating the dimensions and storage capacity of gasoline storage tanks larger than 10,566 gallons but smaller than 19,810 gallons. These records are maintained.

Section IX – SC 1,2: States that the permittee shall comply with the applicable provisions of R 336.1703. Additionally, the permittee must maintain and utilize a written procedure and checklist to ensure that the vapor tight collection line is connected before any gasoline is loaded into the storage tanks. A written checklist is utilized during each delivery. Facility appears to comply with Rule 703 by having a vapor recovery system and vapor-tight collection lines.

FG-WETFUELSTEST

This flexible group contains equipment in the wet fuels area. Process and process equipment are exempt pursuant to R 336.1283(2)(a)(ii).

The wet fuels test area is used to remove gasoline from gas tanks, test carbon fuel canisters, and test fuel injectors. After the majority of the fuel is transferred out of a fuel tank, the remaining fuel is left out to evaporate. Several vacuum hoses capture evaporative gasoline emissions and vent them out through a stack. The bulk of the gasoline removed from tanks is transferred via pipe to an underground storage tank. Emissions from the carbon fuel canister and fuel injector testing are also vented though a stack.

Section III – SC 1: States that the testing equipment in the wet fuels area shall not be used for the production of a product for sale, market testing, or for the treatment of hazardous waste. Mr. Weiss stated that the wet fuels lab is never used for these purposes.

Section III – SC 2: States that new equipment installed in this flexible group may not be exempt from Rule 201 requirements if it is a major modification or has emissions above significance levels outlined in R 336.1119. There does not appear to be any new equipment installed in this flexible group.

Section VI – SC 1: States that the permittee shall monitor fuel usage on a monthly basis. These records are maintained. The records I reviewed show that in all of 2020, 90 gallons of gasoline was used. From January through April 2021, 65 gallons were used.

FG-RULE331

This flexible group contains existing or future emission units that emit air contaminants which are exempt from the requirements of R 336.1201 pursuant to R 336.1285(2)(l)(vi)(A) and R 336.1285(2)(l)(vi)(C). Flexible group includes any equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening or polishing metals, plastics, wood and wood products, and any exhaust system or collector exclusively serving the above equipment. Equipment is exhausted externally and used on a nonproduction basis.

Section I – SC 1: Limits particulate emissions from FG-RULE331 to 0.1lb/1000 lb of exhaust gases. This emission limit is verified by performing and maintaining a log of all routine and scheduled preventative maintenance for the dust control equipment. Based on the records I reviewed, preventative maintenance was performed on all five dust collectors in 2020/2021. The facility appears to comply with this emission limit.

Section VI – SC 1: States that the permittee shall keep an updated record of all emission units subject to R 336.1331 (a). Mr. Weiss provided me with these records. There are seven total emission units subject to these standards.

Section VI – SC 2: States that once per year the permittee shall conduct and log all routine and scheduled preventative maintenance. Based on the records I reviewed, preventative maintenance has been performed on all five emission units in 2020/2021.

FG-RULE290

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278, 278a and 290. Emission units installed/modified before December 20, 2016, may show compliance with Rule 290 in effect at the time of installation/modification.
There are currently no units operating under this flexible group.

FG-RULE287(2)(c)

This flexible group contains any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278, 278a and 287(2)(c). Emission units installed/modified before December 20, 2016, may show compliance with Rule 287 in effect at the time of installation/modification. Current emission units operating under this flexible group are EU-MAINTPAINTING, EU-PRODDSGNPAINT, EU-WOODSHOPPAINT.

Section II – SC 1: Limits the coatings used per emission unit to 200 gallons/month/emission unit. FCA Tech Center has not exceeded this usage limit based on the records I reviewed. The highest monthly usage is reported at 34 gallons for the design booth in February 2021.

Section IV – SC 1: States that the booth exhaust systems must have a properly installed and operated particulate control system. I observed that dry filters were installed in the woodshop paint booth, maintenance paint booth, and in the product design booths. During a previous inspection it was noted that FCA had failed to install dry filters on one of the product design booths. FCA addressed this issue by requiring workers in the product design booth to check filters each day prior to painting in the booths. These checks are logged into daily log sheets.

Section VI – SC 1: States that the permittee shall maintain records of the volume of coating used, as applied, minus water, in gallons. These records are maintained. From January 1, 2021 through May 31, 2021, the total amount of coatings used in all three emission units is reported at 206.1 gallons.

FG-COLD CLEANERS

This flexible group contains any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, 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. There are currently five cold cleaners installed at this facility. There are a number of other cleaners which are aqueous based.

Section II – SC 1: States that the permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. No halogenated solvents are utilized in the cold cleaners at this facility.

Section III – SC 1: States that cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. This operating instruction is posted on the cold cleaners at FCA-Tech Center. I did not observe any cold cleaners in operation during this inspection.

Section III – SC 2: States that the permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. The cold cleaners at FCA-Tech Center appeared to be in good working order.

Section IV – SC 1,2,3,4,5: Specifies design/equipment parameters for FG-COLD CLEANERS. Each cold cleaner must have an air/vapor interface less than ten square feet and only be used for cleaning metal parts with emission vented to the general in-plant environment. The cold cleaners at this facility appear to meet these criteria. All cold cleaners at this facility were equipped with covers during my inspection. The lids were closed. I did not verify whether or not each cold cleaner has a device for draining parts.

Section VI – SC 1,2,3,4: Specifies recordkeeping requirements for FG-COLD CLEANERS. FCA maintains records of the model number, installation date, air/vapor interface area, and solvent vapor pressure of each cold cleaner. Cold cleaners are operating under Rule 281(2)(h). Written procedures are posted conspicuously near each cold cleaner. None of the cold cleaners are heated. Mechanically assisted lids are kept closed when not in use.

Reporting Requirements
FCA Tech Center appears to be in compliance with the reporting requirements of MI-ROP-N1436-2018 and PTI No. 155-18 based on the records I reviewed. MAERS report certification was received on March 10, 2021. ROP Annual Certification, Semi-Annual Certification, CAM certifications, and boiler MACT certification were all received on March 18, 2021.

Stack/Vent Restrictions
I did not verify stack dimensions during this inspection. The stacks that I was able to view appeared to be exhausted vertically unobstructed to the ambient air.

PTI No. 155-18
PTI No. 155-18 was issued on March 22, 2019. The permit revises the conditions of FG-CNTRLDCELLS to accommodate simulation dynamometer testing. In simulation testing, engines may be shut down and restarted multiple times during a test run to simulate real life situations. Catalytic converters are used instead of the thermal oxidizers in simulation test cells. The majority of the conditions of this permit to install have been addressed in the ROP. This section of the report will be a review of the new conditions established in this PTI. This PTI allows FCA Tech Center to operate in either “Scenario A” or “Scenario B” depending on how the facility wants to operate. Currently, the facility operates under Scenario A.

FG-CNTRLDCELLS
Section I – SC 4,5: Places a limit on CO emissions of 17.57 tons per year while performing simulation testing. CO emissions from simulation testing are reported at 0.019 tons during the 12-month period ending in May 2021.

Section II – SC 1a: Limits the usage of ultra-low sulfur diesel to 1,040,175 gallons/year while performing durability or transmission testing in FG-CNTRLDCELLS. Ultra-low sulfur diesel usage is reported at 45,541 gallons for the 12-month period ending in May 2021. Other time periods show similar usage.

Section II – SC 1b: Total fuel consumption from simulation testing is limited to 265,000 gallons per year based on a 12-month rolling time period. Fuel use for simulation testing is reported at 7,286 for the 12-month period ending in May 2021. Compressed natural gas is not currently permitted for use in the simulation test cells. FCA Tech Center does not have compressed natural gas piping or supply capability for the simulation test cells.

Section III – SC 2: States that the permittee shall submit, implement, and maintain an updated MAP for FG-CNTRLDCELLS to include the use of simulation test cells. This MAP must be submitted within 180 days of starting trial operation of the simulation test cells. Simulation test cells commenced trial operation on July 14, 2020. An updated MAP was submitted to the AQD on December 23, 2020. This new MAP addresses the use of simulation cells.

Section III – SC 3: States that the permittee shall revise the fuel use monitoring plan upon switching from Scenario A to Scenario B. FCA Tech Center has not notified the AQD that they are going to switch to Scenario B.

Section V – SC 2: States that within 180 days of commencing trial operation of simulation testing, the permittee shall verify NOx, CO, VOC, PM10, and PM2.5 emission rates from the simulation test cells in FG-CNTRLDCELLS. This testing was completed on January 6, 2021. AQD received the test report from RWDI air. The test report shows compliance with the emission limits established in this PTI.

Section VI – SC 3: States that the permittee shall maintain records of the maximum sulfur content in the ultra-low sulfur diesel fuel. These records are kept. The maximum sulfur content for diesel fuel at FCA Tech Center is reported at 15 ppm sulfur.

Compliance Determination

FCA US LLC – Chrysler Technology Center exceeded their hourly NOx and CO emission limits of their natural gas-fired turbine generators. This is a violation of MI-ROP-N1436-2018, FG-B/UP-TURBINES, Special Conditions I.1 and I.3. A violation notice was sent to FCA US LLC – Chrysler Technology Center in September 2021 to address this non-compliance.

FCA US LLC – Chrysler Technology Center appears to be operating in compliance with all other requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules; Renewable Operating Permit No. MI-ROP-N1436-2018; and Permit to Install No. 155-18.

NAME Adam Bogros DATE 9/7/2021 SUPERVISOR K. Kelly