B6230
Manilla

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B623035539

FACILITY: FORD MOTOR CO RESEARCH & DEV CTR		SRN / ID: B6230
LOCATION: 1701 Village Road, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: David Russell ,		ACTIVITY DATE: 07/13/2016
STAFF: Jorge Acevedo	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection - F&G , RIC, and Rotunda		
RESOLVED COMPLAINTS:		

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
INSPECTION REPORT

COMPANY NAME : Ford R&E Center
FACILITY ADDRESS : 21500 Oakwood Blvd, Dearborn 48124
STATE REGISTRAT. NUMBER : B6230
NAICS CODE : 541712
EPA SOURCE CLASS : A
EPA POLLUTANT CLASS : C,N,V
LEVEL OF INSPECTION : PCE
DATE OF INSPECTION : 7/13/16
TIME OF INSPECTION : 1:06 PM
DATE OF REPORT : 08/21/16
REASON FOR INSPECTION : Annual Compliance Inspection
INSPECTED BY : Jorge Acevedo
PERSONNEL PRESENT : David Russel, John Grant, Venkata Paruchuri, Scott Horst
FACILITY PHONE NUMBER : (313) 248-1334
FACILITY FAX NUMBER : (313) 323-0559

FACILITY BACKGROUND:

The R&E Center is a 40 building research and development complex engaged in testing various automobile engines and components. Approximately 25000 are employed at the complex including all shift workers and salaried personnel. Wayne County was redesignated to attainment for PM 2.5 on August 29, 2013. Wayne County was redesignated to attainment for Ozone on June 29, 2009. Portions of Wayne County are designated as non-attainment for Sulfur Dioxide.

The R & E Center is a major source under the following programs:

Renewable Operating Permit (ROP) program and Prevention of Significant Deterioration program.

INSPECTION NARRATIVE: Pti 194-15 issued 3/22/16

On July 13, 2016, I conducted an annual compliance inspection of the Ford Motor – Research and Engineering Center (R&E Center). I met with David Russell. Mr. Russell accompanied me into the F & G Wing. We went into a conference room and met with John Grant and Venkata Paruchuri, of facilities. We talked about a couple of items before heading into the F&G Wings. We talked about the recent Permit to Install, which was issued on March 22, 2016. Mr. Grant explained that they raised a couple of stacks on an existing wing to comply with the permit. Mr. Grant explained that there would be

four new wings constructed in the "A" wing to have 16 rooms in the "A" wing.

We began the inspection by walking into the F & G wings. At the time of the inspection, approximately 10-12 rooms were operating. Mr. Grant explained that the four oxidizers are still run during the week, but during the weekend, they are able to run two oxidizers. The interlock test is still conducted twice a year, but since the Consent Order was terminated, they are no longer required to provide documentation of the test to the Air Quality Division. After observing the F & G Wing, we observed a fire pump and emergency engine. The model # on the generator is 100DGD8. I told Mr. Russell I would be requesting records on the engines and other reciprocating and compression ignition engines. We then went into the "A" wing.

"A" wing has 12 rooms but will be expanded into 16 rooms. The "A" wing is part of the grandfathered part of the facility. In the "A" wing, catalyst aging is performed. The emissions from the testing are exhausted through the floor and through a water system before exhausting out of the building.

We went into a maintenance area. Mr. Russell showed me the cold cleaner used in the area. The lid was closed at the time of the inspection. He also showed me a small paint booth. It was used to touch up items with spray cans. A usage log was observed near the booth. The filters were in place.

We then went on the roof to observe the thermal oxidizers. We first went into the control room to see the temperatures.

All four of the oxidizers were currently operating above 1400^{o}F.

Next, we went to observe the thermal oxidizers. I observed the computer system monitoring the oxidizer operations. I then walked to the roof to observe the oxidizers. I did not observe any opacity. I again took note of the oxidizers:

Oxidizer #1 1456 ^{o}F
Oxidizer #2 1454 ^{o}F
Oxidizer #3 1454 ^{o}F
Oxidizer #4 1456 ^{o}F

After the viewing the oxidizers, we walked over to the Research and Innovation Center and met with Scott Horst. Mr. Russell showed me a Fire Pump, which was a diesel fired engine, a Natural Gas Generator, and another emergency engine, that had the gas supply line disconnected. Mr. Russell said he would provide me maintenance and hours of operation for each emergency engine.

I then observed the 10 dynamometer cells in the Research and Innovation Center. There is no control on the emissions from the cells. Emissions are exhausted through the floor and directed out of the building. No hydrogen is being used at this time. I requested emission and fuel records from Mr. Russell.

We then went to the Rotunda Building. The Rotunda Building formerly was a Visteon facility and did some dynamometer testing. Currently, it was being used as an administration building for Ford. Mr. Russell showed me the two newer boilers. There were two other older boilers but were not operating. I then saw a generator. The hour meter read 517. The last reading was in 2014 and read 494 according to the log. The generator was a Cummins Engine Model 6743, engine Serial no. 25115746. After observing the generator, we drove back to the parking lot near the F&G Wing.

I left the facility at 3:46PM. Records were received via email on July 15, 2016.

COMPLAINT/COMPLIANCE HISTORY:

There have not been any citizen complaints registered against Ford.

OUTSTANDING CONSENT ORDERS:
None
OUTSTANDING LOVs
None

OPERATING SCHEDULE/PRODUCTION RATE:

The Dynamometer Building is a 24-hour per day, 7days per week, 8760 hours per year operation. The RIC is an 8-hour per day, 5 days per week, 2080 hours per year operation.

PROCESS DESCRIPTION:

In the Dynamometer Building, Ford has six wings (A, C, D, E, F, G) and tests internal combustion engines in dynamometer cells. The dynamometers are electrical diagnostics devices measuring mechanical performance of the engines. All dynamometers are interfaced with personal computers that continuously monitor engine feedback parameters. Emissions result from the combustion of gasoline by the engines. The typical engine tests are as follows:

- Engine Durability – The durability test evaluates the effect of running the engine under harsh conditions for extended period of time. This is accomplished by operating the engine for extended period while varying engine speeds.
- Engine Performance- The performance test takes the engine to a particular speed, stops the engine for several minutes, takes the engine to the next speed, stops for several minutes, etc;
- Engine Break-in- During the engine break–in test, speed and load points are varied to "break-in" the engine;
- Transient Emissions- The transient emissions test operates the engine for a period, then stops and allows the engine to return to ambient temperature;
- Transient Performance Test- This test takes the engine from zero revolutions per minute (RPM) to maximum horsepower in few seconds. The engine is then stopped and the test is immediately repeated;
- Engine component Testing- Some of the test cells evaluate the performance of specific engine components (oil pump, throttle body, etc.), often times without actually running the engine under its own power and;
- Engine Mapping test- Consists of running engine at various speed, load, spark and fuel set points where data is taken to determine engine performance, fuel economy, exhaust emission, etc. according to engine program

In the RIC, Ford tests internal combustion engines in 10 dynamometer cells. The focus in the SRL is not that much different than in the Dynamometer Building. Rather than focusing on endurance as in the Dynamometer Building, the focus in the SRL is on how the engines and their components react with different fuels. Also, the focus is on projects that are in the development stages and 3-10 years from production.

The Rotunda Center is used for administrative purposes.

EQUIPMENT AND PROCESS CONTROLS

12 test cells are located in the "A Wing". 3 are currently inactive. The test cells in the "A Wing" are grandfathered. The wing has two stacks and does not have any add on controls.

14 test cells are located in the "C Wing". 7 are currently inactive. The test cells in the "C Wing" are grandfathered. The wing has two stacks and does not have any add on controls.

12 test cells are located in the "D Wing". 4 are currently inactive. The test cells in the "D Wing" are grandfathered. The wing has two stacks and does not have any add on controls.

19 test cells are located in the "E Wing". None are currently inactive. The test cells in the "E Wing" were built in 1979 and 1980 and are exempt. The facility was able to use the Rule 285 (g) exemption because rule 278 was not promulgated until 1993. The wing has two stacks and does not have any add on controls.

13 test cells are located in the "F Wing" and 17 are located in the "G Wing." The test cells are controlled by four thermal oxidizers. The exhaust loading supplied by the cells under test automatically activates the oxidizer's variable fan speed. Each oxidizer is equipped with tube heat exchangers for some recuperative potential. Each oxidizer maintains a minimum temperature of 1400° F with a minimum retention time of .5 seconds. The test cells' ability to run is dependent on the temperature. If the oxidizer temperature falls below 1400°, the test cells will not be able to run. Average volumetric air flow rate is 16000 acfm. There are four stacks, one for each oxidizer. Each oxidizer stack is 2.2' internal diameter and 57' high.

10 test cells are located in the RIC and are uncontrolled. The amount of time they are used does not justify the cost for controls.

APPLICABLE RULES/PERMIT CONDITIONS:

ROP MI-ROP-B6230-2009 was finalized on December 18, 2013.

Permit conditions are evaluated in Appendix A. (Appendix A)

The following conditions apply Source-Wide to: FGTHERDYNO-S1

DESCRIPTION

This flexible group represents the 30 Dynamometer Test Cells located in the Dynamometer Laboratory (F&G Wings). The dynamometers are controlled with four oxidizers.

Emission Units: EUTHERDYNO1-S1 through EUTHERDYNO30-S1

POLLUTION CONTROL EQUIPMENT

Four Thermal Oxidizers

I. EMISSION LIMIT(S)

Pollutant	Limit	Compliance Status	Comments
1. Carbon Monoxide	1416 pounds/day[2]	Compliance	Records are provided monthly. The highest emissions of CO did not exceed 1416 pounds.
2. Carbon Monoxide	44.3 Tons/year[2]	Compliance	Records are provided monthly.
3. Nitrogen Oxides	1200 pounds/day[2]	Compliance	Records are provided monthly.
4. Nitrogen Oxides	37.5 Tons/year[2]	Compliance	Records are provided monthly.
5. 1,3-Butadiene	32.6 Pounds/day[1]	Compliance	Records are provided monthly.

II. MATERIAL LIMIT(S)

Material	Limit	Compliance Status	Comments
1. Fuel	75,000 MMBTU/year[2]	Compliance	Records are provided monthly.
2. Fuel	1200 MMBTU/day[2]	Compliance	Records are provided monthly.
3. Lead	7 kilograms of lead in the engine test	Compliance	Leaded fuel is no longer used. Records are provided monthly.

	cells/week[2]		

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall not operate FGTHERDYNO-S1 unless the group of four thermal oxidizers are installed, maintained and operated in a satisfactory manner. Satisfactory operation of the thermal oxidizer includes maintaining a minimum combustion chamber temperature above the most recent acceptable performance test value less 50 degrees Fahrenheit and a minimum design retention time of .5 seconds.[2] (R 336.1205, R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d), 40 CFR 64.6(c)(1)(i and ii))

Compliance- Oxidizers appeared to be working correctly. Inspection of the temperature indicated that it was above 1400 degrees.

2. Permittee shall develop a test protocol to ensure that representative uncontrolled and controlled emissions can be determined. This protocol must be submitted to the AQD at least 30 days prior to the proposed test date and approved by AQD. Emissions information gathered testing FGTHERDYNO-S1 can be used to show compliance for FGC10759-S2. (R 336.12001)

Compliance- Test protocol was submitted 30 days prior to testing.

IV. DESIGN/EQUIPMENT PARAMETER(S)

N/A

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. Once during the five years of this permit, the permittee shall verify the CO and VOC reduction efficiency rates of each thermal oxidizer portion of FGTHERDYNO-S1, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] (R 336.1205, R 336.1910, R 336.2804, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21 (d))

COMPLIANCE- Stack testing was conducted in December 2014.

2. Once during the five years of this permit, the permittee shall verify the NOx and CO, emission factors from FGTHERDYNO-S1 prior to control by its thermal oxidizer, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] (R 336.1205, R 336.1225, R 336.1910, R 336.2803, R 336.2804, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))

COMPLIANCE - Stack testing was conducted in December 2014.

3. Upon MDEQ request, the permittee shall verify the 1,3 Butadiene concentration from FGTHERDYNO-S1, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 18. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing.

Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R 336.2004(1)(o), R 336.1213(3))
Compliance- 1,3 Butadiene may be requested to test in the future.

4. Whenever leaded fuel is used, the permittee shall verify the lead usage emission rate from FGTHERDYNO-S1, in accordance with Appendix 7-S1. (R 336.1225, R 336.1901)

COMPLIANCE- Records are kept regarding leaded fuel usage. According to Ms. Brinkman, no leaded fuel is being used.

5. Whenever leaded fuel is used, the permittee shall verify the lead content of the fuel used in FGTHERDYNO-S1, in accordance with Method 2. (R 336.1225, R 336.1901, 40 CFR Part 80, Appendix B)

COMPLIANCE- According to Ford, no leaded fuel is being used. Records are kept regarding leaded fuel usage.

VI. MONITORING/RECORDKEEPING
Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a temperature monitoring device in the combustion chamber of the thermal oxidizers for FGTHERDYNO-S1 to monitor and record the combustion temperature on a continuous basis during operation. Temperature data recording shall consist of measurements made at equally spaced intervals, not to exceed 15 minutes per interval. (R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d), 40 CFR 64.6(c)(1)(I and ii))

COMPLIANCE-The temperature of the combustion chamber is monitored continuously.

2. The permittee shall properly maintain the monitoring system including keeping ready access parts for routine repair of the monitoring equipment. (R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d), 40 CFR 64.7(b))

COMPLIANCE- Monitoring system appeared to be working correctly. Dynos are interlocked with the thermal oxidizers, therefore, dynos are shut down if temperature goes below 1400.

3. The permittee shall calculate the daily heat input rate in million BTU based upon monthly recordkeeping prorated to a daily rate. Should the prorated daily rate exceed 90 percent of the daily limit, the permittee shall commence daily recordkeeping for a minimum of two months until the daily rate falls below 90 percent of the daily limit. (See Appendix 7-S1) (R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))

Compliance- Records are provided monthly.

4. The permittee shall keep a record of the heat input rate in million BTU per calendar month, and the annual heat input usage rate in million BTU per 12-month rolling time period as determined at the end of each calendar month. (R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))

COMPLIANCE- Records are provided monthly.

5. The permittee shall keep the following information on a monthly basis for FGTHERDYNO-S1:

a) A record of the days of operation.
b) The amount and type of each fuel used, per calendar day, per month and per 12-month rolling time period.
c) NO_x emission calculations determining the daily emission rate in pounds per calendar day.
d) NO_x emission calculations determining the monthly emission rate in tons per calendar month.
e) NO_x emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
f) CO emission calculations determining the daily emission rate in pounds per calendar day.
g) CO emission calculations determining the monthly emission rate in tons per calendar month.
h) CO emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
i) 1,3-Butadiene emission calculations determining the daily emission rate in pounds per calendar day.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. (R 336.1205, R336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

COMPLIANCE- Records are provided monthly.

6. The permittee shall calculate and maintain a record of the weekly lead emissions. (R 336.1225, R 336.1901)

COMPLIANCE- Records are provided monthly.

VII. REPORTING

1. The permittee shall submit monthly reports of the records required by Special Condition V.5 to the AQD District Supervisor in a format acceptable to the AQD District Supervisor. Reports shall be submitted by the 21st day of the calendar month, for the previous calendar month. (R 336.1205, R336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

COMPLIANCE- Records are provided monthly.

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1.SVDYNO-OXIDIZER	34[2]	65[2]	R 336.1225 R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
2.SVDYNO-OXIDIZER2	34[2]	65[2]	R 336.1225 R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
3.SVDYNO-OXIDIZER3	34[2]	65[2]	R 336.1225 R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
4.SVDYNO-OXIDIZER4	34[2]	65[2]	R 336.1225 R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)

COMPLIANCE- Stack heights appeared correct. Measurements were not taken.

IX. OTHER REQUIREMENT(S)

1. For the purposes of Compliance Assurance Monitoring (CAM), excursions will be defined as follows: (40 CFR 64.6(c)(2))

   a) A temperature excursion is defined as a confirmed three-hour period during which the average fails to meet the specified temperature requirements in Special Condition III.1.
   b) A monitoring excursion is defined as a failure to properly monitor as required in Special Condition VI.1. (40 CFR 64.3(b)(4))

2. The permittee shall perform quality assurance measures annually on the monitoring equipment to ensure maximum performance. (40 CFR 64.6(c)(1)(iii)

3. The permittee shall comply with all applicable requirements of 40 CFR Part 64. (40 CFR Part 64)

COMPLIANCE- Quality assurance is conducted on monitoring equipment. Temperature monitoring is done continuously and appeared to be working correctly and in the right range. The dynos are interlocked and if there is a drop in temperature- the dynos are automatically shut down.

Footnotes:

[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGC10759-S2

FLEXIBLE GROUP CONDITIONS

DESCRIPTION
10 Dynamometer Test Cells located in the Research Innovation Center

EMISSION UNITS: EUC10759D1-S2 THROUGH EUC10759D10-S2
NA
POLLUTION CONTROL EQUIPMENT

I. EMISSION LIMIT(S)

Pollutant	Limit	Compliance Status & Date	Comments
1.Carbon Monoxide*	28.62 lbs/mmBTU of heat input2.	COMPLIANCE	Records provided indicate that emission limit was not exceeded. Stack Testing was conducted in March 2010.
2. Volatile Organic Compounds (VOC) **	1.69 lbs/mmBTU of heat input2	COMPLIANCE	Records provided indicate that emission limit was not exceeded. Stack Testing was conducted in March 2010.
3. 1,3 butadiene (corrected to 70°F and 29.92 inches Hg)1	11.9 milligrams per cubic meter of exhaust air1	COMPLIANCE-	AQD may request testing

* This is equivalent to a carbon monoxide emission rate of 149 pounds per hour and 63.29 tons per year, based on a maximum gasoline usage of 39 gallons per hour.
** This is equivalent to a VOC emission rate of 10 pounds per hour and 3.76 tons per year, based on a maximum gasoline usage of 39 gallons per hour

II. MATERIAL LIMIT(S)

Material	Limit	Compliance Status & Date	Comments
1. fuel	121.68 million BTUs/day2	COMPLIANCE-	Records provided show that daily fuel usage did not exceed permit limit. Highest usage over past year was 10.11 mmBTU/day.
2. fuel	4.42 billion BTUs/year2	COMPLIANCE-	Records provided show that12 month rolling fuel usage did not exceed permit limit. Highest amount over past year was 2.2 billion BTU/year
3. lead	4.0 kilograms/week2	COMPLIANCE	Records were provided. No unleaded fuel was consumed.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall develop a test protocol to ensure that representative uncontrolled and controlled emissions can be determined. This protocol must be submitted to the AQD at least 60 days prior to the proposed test date and approved by AQD. Emissions information gathered testing FGTHERDYNO-S1 can be used to show compliance for FGC10759-S2 (R336.1201(3))

Compliance- Facility conducted testing on April 2015.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1.NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. Every five years, the permittee shall verify the Carbon Monoxide emission rates from FGC10759-S2, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 10. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing.

Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R336.2004(1)(m), R336.1213(3))

Compliance- Facility conducted testing on April 2015

2. Every five years, the permittee shall verify the Volatile Organic Compound emission rates from FGC10759-S2, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 25A. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R336.2004(1)(t), R336.1213(3))
Compliance- Facility conducted testing on April 2015.

3. Upon MDEQ request, the permittee shall verify the 1,3 Butadiene concentration from FGC10759-S2, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 18. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R 336.2004(1)(o), R 336.1213(3)

Compliance- Facility will test if requested by AQD.

4. Whenever leaded fuel is used, the permittee shall verify the lead usage emission rate from FGC10759-S2, in accordance with Appendix 7-S1. (R336.1213(3))
UNDETERMINED- Leaded fuel does not appear to be used.
5. Whenever leaded fuel is used, the permittee shall verify the lead content of the fuel used in FGC10759-S2, in accordance with Method 2. (40 CFR Part 80, Appendix B, R336.1213(3))
UNDETERMINED- Leaded fuel does not appear to be used.

See Appendix 5-S2

VI. MONITORING/RECORDKEEPING
Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall calculate the daily heat input rate in million BTU based upon monthly recordkeeping prorated to a daily rate. Should the prorated daily rate exceed 90 percent of the daily limit, the permittee shall commence daily recordkeeping for a minimum of two months until the daily rate falls below 90 percent of the daily limit. (See Appendix 7-S2) (R336.1201(3))
COMPLIANCE- Records are kept.
2. The permittee shall keep a record of the heat input rate in million BTU per calendar month, and the annual heat input usage rate in million BTU per 12-month rolling time period as determined at the end of each calendar month.
COMPLIANCE- Records are kept. (R336.1201(3)
3. Weekly lead usage rates shall be determined from the lead content and the amount of each fuel used in the test cells2. (See Appendix 7-S2) R336.1201(3)
COMPLIANCE- It appears that leaded fuel is not used.
See Appendix 7-S2

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

See Appendix 8-S2
Compliance- Semi Annual and Annual Compliance Certifications are submitted.

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SVDYNO-01	162	592	(R336.1201(3))
SVDYNO-02	162	592	(R336.1201(3))

COMPLIANCE- It appears that stack heights are correct. Measurements were not taken.
IX. OTHER REQUIREMENT(S)

1.NA

Footnotes:
1This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
2This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGEMERGRICE-S3

FLEXIBLE GROUP CONDITIONS

DESCRIPTION
Existing CI and SI engines at a major source, Emergency
Compliance date – May 3, 2013 for CI Engines
Compliance date – October 19, 2013 for SI Engines

Emission Units: EUEMERGRICECECGEN-S3, EUEMERGRICEDYNOGEN-S3, EUEMERGRICEEVBGEN-S3, EUEMERGRICEGTL1GEN-S3, EUEMERGRICEGTL2GEN-S3, EUEMERGRICERIC1GEN-S3, EUEMERGRICERIC2GEN-S3, EUEMERGRICERIC4GEN-S3, EUEMERGRICERIC5GEN-S3, EUEMERGRICEPFSL1GEN-S3, EUEMERGRICEPFSL2GEN-S3, EUEMERGRICEBLG6GEN-S3, EUEMERGRICEAECGEN-S3, EUEMERGRICECFDSGEN-S3, EUEMERGRICERCGEN-S3, EUEMERGRICEWT2FP-S3, EUEMERGRICERICFP-S3, EUEMERGRICEOAKFP-S3, EUEMERGRICEPDCFP-S3, EUEMERGRICEBLG3FP-S3, EUEMERGRICEAECFP-S3, EUEMERGRICEPOEEFP-S3, EUEMERGRICERC1FP-S3, EUEMERGRICERC2FP-S3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. **The permittee shall operate and maintain any affected RICE, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (40 CFR 63.6605(b) R 336.1910)**

Compliance assumed- The engines are run infrequently. Records regarding hour logs were provided along with maintenance records.

2. The permittee shall comply with the following requirements, except during periods of startup:
(40 CFR 63.6602, 40 CFR 63.6640(a))

For CI Engines: (40 CFR 63.6602, Table 2c item 1)

a) Change oil and filter every 500 hours of operation or annually, whichever comes first, except as allowed in SC III.5.

b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Compliance- All engines are used approximately several hours per year and are not used frequently.

3. The permittee shall comply with the following requirements, except during periods of startup:
(40 CFR 63.6602, 40 CFR 63.6640(a))

For SI Engines: (40 CFR 63.6602, Table 2c item 6)

a) Change oil and filter every 500 hours of operation or annually, whichever comes first, except as allowed in SC III.5.

b) Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Compliance- All engines are used approximately several hours per year and are not used frequently.

4. The permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop you own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air-pollution control practice for minimizing emissions.

(40 CFR 63.6625(e)(2), R336.910)

Compliance- No after treatment control device is used.

5. The permittee may utilize an oil analysis program in order to extend the specified oil change requirement in 40 CFR 63.6602 and as listed in SC III.2. The oil analysis program must be performed at the same frequency as oil changes are required. The analysis program must analyze the parameters and keep records as required in 63.6625 (i). (40 CFR 63.6625(i))

Compliance- The facility may use this but based on usage, the facility will rarely meet the 500 hours.

6. The permittee may utilize an oil analysis program in order to extend the specified oil change requirement in 40 CFR 63.6602 and as listed in SC III.3. The oil analysis program must be performed at the same frequency as oil changes are required. The analysis program must analyze the parameters and keep records as required in 63.6625 (j). (40 CFR 63.6625(j))

Compliance- The facility may use this but based on usage, the facility will rarely meet the 500 hours.

7. The permittee shall operate FGEMERGRICE according to the requirements specified in 40 CFR 63.6640(f)(1) through 63.6640(f)(4). In order for the engine to be considered an emergency stationary RICE under 40 CFR 63, Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs 40 CFR 63.6640(f)(1) through 63.6640(f)(4), is prohibited. If the permittee does not operate FGEMERGRICE according to the requirements in paragraphs 40 CFR 63.6640(f)(1) through 63.6640(f)(4), the engine will not be considered an emergency engine under 40 CFR 63, Subpart ZZZZ and must meet all requirements for non-emergency engines.

Compliance- Facility uses engines solely for emergency purposes.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain FGEMERGRICE with a non-resettable hour meter. (40 CFR 63.6625(f))

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. If using the oil analysis program for CI Engine(s), the permittee shall test for Total Base Number, viscosity and percent water content. (40 CFR 63.6625(i))

Not applicable because oil analysis is not used.

2. If using oil analysis program for SI Engines, the permittee shall test for Total Acid, viscosity, and percent water content. (40 CFR 63.6625(j))

Not applicable because oil analysis is not used.

See Appendix 5-3

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. For each RICE engine, the permittee shall keep records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. (40 CFR 63.6655(a)(2), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

2. The permittee shall keep records of all required maintenance performed on the air pollution control and monitoring equipment. (40 CFR 63.6655(a)(4), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

3. The permittee shall keep records of actions taken during periods of malfunction to minimize emissions in accordance with 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. (40 CFR 63.6655(a)(5), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

4. The permittee shall keep records as required in SC III.3 and SC III.4 to show continuous compliance with each emission or operating limit that applies. (40 CFR 63.6655(d), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

5. The permittee shall keep records of the maintenance conducted on the stationary RICE in order to demonstrate that permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to permittee's maintenance plan. (40 CFR 63.6655(d), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

6. The permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. (40 CFR 63.6655(f), 63.6660)

Compliance- Facility keeps hour log records for engines and copies were received.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Facility submits semi-annual and annual compliance certifications.
See Appendix 8-3

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subparts A and Subpart ZZZZ, as they apply to FG-EMERGENCYRICE. (40 CFR 63 Subparts A and ZZZZ)

Compliance- Based on review of hour logs and maintenance records, it appears that facility is complying with applicable subpart.

Footnotes:
1 This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
2 This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGBOILERS-S3

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Boilers and Process Heaters, with a heat input capacity less than 50 MMBTU/hr, subject to 40 CFR 63, Subpart DDDDD.

Emission Units: EUBOIL81002-S3, EUBOIL81003-S3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment Monitoring/ Testing Method Underlying Applicable Requirements		
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment Monitoring/ Testing Method Underlying Applicable Requirements		
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall conduct a tune-up of the boiler or process heater beginning January 31, 2016, annually, biennially, or once every 5 years, depending on its size, as specified in § 63.7540.

   a) Annually (within 13 months) for boilers or process heaters greater than or equal to 10 MMBTU/hr and less than 50 MMBTU/hr.
   b) Biennially (within 25 months) for boilers or process heaters greater than 5 MMBTU/hr and less than 10 MMBTU/hr
   c) Every five years (within 61 months) for boilers or process heaters less than or equal to 5 MMBTU/hr.

Compliance- Facility submitted report regarding tune up. (40 CFR 63.7500)

2. The permittee must have a one-time energy assessment performed by a qualified energy assessor as required in Table 3 of 40 CFR 63, Subpart DDDDD. (40 CFR 63.7500)

Compliance- Facility submitted report regarding energy assessment.

3. The permittee, at all times, must operate and maintain any affected source (as defined in § 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

Compliance- Boilers appeared to be operating correctly. Facility submitted maintenance records for the boilers.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. See S.C. No. IX.1

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. See S.C. No. IX.1

See Appendix 5-3

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. See S.C. No. IX.1

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

4. As specified in § 63.9(b)(4) and (5), if you startup your new or reconstructed affected source on or after January 31, 2013, you must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source. (40 CFR 63.7545(c),40 CFR 63.9(b)(4), 40 CFR 63.9(b)(5)

Compliance- Annual and Semi-Annual Compliance certifications are submitted. Facility submitted Initial Notification and is in the file.

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subparts A and Subpart DDDDD, as they apply to FG-BOILERS-S3. (40 CFR 63 Subparts A and DDDDD)

Compliance- Boilers appeared to be operating properly and records were provided to comply with Subpart.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

N/A

MAERS REPORT REVIEW

(These figures include grandfathered test cells.)

Pollutant	2015 Emissions(TPY)
CO	1902.59
NOx	72.5
PM	5.07
Sox	4.8
VOC	83.9

FINAL COMPLIANCE DETERMINATION:

It appears that the Dynamometer Laboratory is operating in compliance with MI-ROP-B6230-2013b.

NAME _____ DATE 8-30-16 SUPERVISOR W.M.