MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

April 24, 2019

PERMIT TO INSTALL
174-09A

ISSUED TO
Ford Motor Company – Research & Engineering Center

LOCATED AT
1701 Village Road
Dearborn, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
B6230

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **April 3, 2019**	
DATE PERMIT TO INSTALL APPROVED: **April 24, 2019**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department	Michigan Department of Environmental Quality
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MDEQ	Michigan Department of Environmental Quality
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTHERDYNO1-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO2-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO3-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO4-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO5-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO6-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO7-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO8-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO9-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTHERDYNO10-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO11-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO12-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO13-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO14-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO15-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO16-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO17-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO18-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO19-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTHERDYNO20-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO21-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO22-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO23-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO24-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO25-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO26-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO27-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO28-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1
EUTHERDYNO29-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTHERDYNO30-S1	A dynamometer test cell located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	3/9/95 8/25/09	FGTHERDYNO-S1

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGTHERDYNO-S1	30 dynamometer test cells located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.	EUTHERDYNO1-S1 EUTHERDYNO2-S1 EUTHERDYNO3-S1 EUTHERDYNO4-S1 EUTHERDYNO5-S1 EUTHERDYNO6-S1 EUTHERDYNO7-S1 EUTHERDYNO8-S1 EUTHERDYNO9-S1 EUTHERDYNO10-S1 EUTHERDYNO11-S1 EUTHERDYNO12-S1 EUTHERDYNO13-S1 EUTHERDYNO14-S1 EUTHERDYNO15-S1 EUTHERDYNO16-S1 EUTHERDYNO17-S1 EUTHERDYNO18-S1 EUTHERDYNO19-S1 EUTHERDYNO20-S1 EUTHERDYNO21-S1 EUTHERDYNO22-S1 EUTHERDYNO23-S1 EUTHERDYNO24-S1 EUTHERDYNO25-S1 EUTHERDYNO26-S1 EUTHERDYNO27-S1 EUTHERDYNO28-S1 EUTHERDYNO29-S1 EUTHERDYNO30-S1

FGTHERDYNO-S1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

30 dynamometer test cells located in the F&G wings of the dynamometer laboratory. Emissions from all of the dynamometers in these two wings are controlled by a group of four thermal oxidizers.

Emission Unit: EUTHERDYNO1-S1, EUTHERDYNO2-S1, EUTHERDYNO3-S1, EUTHERDYNO4-S1, EUTHERDYNO5-S1, EUTHERDYNO6-S1, EUTHERDYNO7-S1, EUTHERDYNO8-S1, EUTHERDYNO9-S1, EUTHERDYNO10-S1, EUTHERDYNO11-S1, EUTHERDYNO12-S1, EUTHERDYNO13-S1, EUTHERDYNO14-S1, EUTHERDYNO15-S1, EUTHERDYNO16-S1, EUTHERDYNO17-S1, EUTHERDYNO18-S1, EUTHERDYNO19-S1, EUTHERDYNO20-S1, EUTHERDYNO21-S1, EUTHERDYNO22-S1, EUTHERDYNO23-S1, EUTHERDYNO24-S1, EUTHERDYNO25-S1, EUTHERDYNO26-S1, EUTHERDYNO27-S1, EUTHERDYNO28-S1, EUTHERDYNO29-S1, EUTHERDYNO30-S1

POLLUTION CONTROL EQUIPMENT

Four thermal oxidizers

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Carbon Monoxide	1416 pounds/day	Daily	FGTHERDYNO-S1	SC V.1 SC V.2 SC VI.5	R 336.2804 40 CFR 52.21 (d)
2. Carbon Monoxide	44.3 Tons/year	Based upon a 12-month rolling time period as determined at the end of each calendar month.	FGTHERDYNO-S1	SC V.1 SC V.2 SC VI.5	R 336.205 R 336.2804 40 CFR 52.21 (d)
3. Nitrogen Oxides	1200 pounds/day	Daily	FGTHERDYNO-S1	SC V.1 SC V.2 SC VI.5	R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
4. Nitrogen Oxides	37.5 Tons/year	Based upon a 12-month rolling time period as determined at the end of each calendar month	FGTHERDYNO-S1	SC V.1 SC V.2 SC VI.5	R 336.1205 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
5. 1,3-Butadiene	32.6 Pounds/day[1]	Daily	FGTHERDYNO-S1	SC V.1 SC V.2 SC VI.5	R 336.1225

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Fuel	75,000 MMBTU/year	Based upon a 12-month rolling time period as determined at the end of each calendar month	FGTHERDYNO-S1	SC VI.3 SC VI.4 SC VI.5	R 336.1205 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
2. Fuel	1200 MMBTU/day	Daily, calculated based upon monthly recordkeeping prorated to a daily rate	FGTHERDYNO-S1	SC VI.3 SC VI.4 SC VI.5	R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
3. Lead	7 kilograms of lead in the engine test cells/week	Per Week, when using leaded fuel	FGTHERDYNO-S1	SC VI.3 SC VI.4 SC VI.5 SC VI.6	R 336.1225 R 336.1901

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. **(R 336.1205, R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify the CO and VOC reduction efficiency rates of each thermal oxidizer portion of FGTHERDYNO-S1 once every five years from the previous test, 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. **(R 336.1205, R 336.1910, R 336.2804, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(d))**

2. The permittee shall verify the NOx and CO emission factors from FGTHERDYNO-S1 prior to control by its thermal oxidizer once every five years from the previous test, 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. **(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))**

3. Upon request by the AQD District Supervisor, 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 upon department request. 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.

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)**

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)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

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))**

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))**

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))**

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))**

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**, **R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

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

VII. REPORTING

1. The permittee shall submit quarterly reports of the records required by SC VI.5 to the AQD District Supervisor in a format acceptable to the AQD District Supervisor. The reports shall be submitted within 21 days following the end of each calendar quarter, for the previous calendar quarter. **(R 336.1205**, **R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

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

IX. OTHER REQUIREMENT(S)

NA

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

APPENDIX 7-S1

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGTHERDYNO-S1. Alternative calculations must be approved by the AQD District Supervisor.

Calculation for Weekly Lead Usage in Test Cells

Company _____
Permit no. _____

Week starting
month/day/year: _____

		A	B	C = A x B
Date	Fuel identification	Amount of fuel used	Lead content	Amount of lead used

Total amount of lead used in test cells = (sum of all C's) _____

Total amount of lead used expressed in kilograms per week [T] _____

Lead usage limitation (kilograms per week) [L] _____

In compliance (T < L) ? Yes/ No _____

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGTHERDYNO-S1. Alternative calculations must be approved by the AQD District Supervisor.