

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

August 5, 2022

PERMIT TO INSTALL
370-08D

ISSUED TO
Excel Testing & Engineering, LLC

LOCATED AT
9059 Samuel Barton Drive
Van Buren Township, Michigan 48111

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
N6962

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: June 16, 2022	
DATE PERMIT TO INSTALL APPROVED: August 5, 2022	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

COMMON ACRONYMS2
POLLUTANT / MEASUREMENT ABBREVIATIONS.....3
GENERAL CONDITIONS4
EMISSION UNIT SPECIAL CONDITIONS.....6
 EMISSION UNIT SUMMARY TABLE6
FLEXIBLE GROUP SPECIAL CONDITIONS.....8
 FLEXIBLE GROUP SUMMARY TABLE8
 FG-TESTCELLS9
FGFACILITY CONDITIONS..... 14
APPENDIX 7: Emission Factors/Calculations 16

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/EGLE	Michigan Department of Environment, Great Lakes, and Energy
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
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 ₂ e	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 ₂ S	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 Environment, Great Lakes, and Energy, 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 Environment, Great Lakes, and Energy. **(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 (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU-TESTCELL-01	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 620 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-02	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 630 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-03	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 592 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-04	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 620 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-05A	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 800 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-05B	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 50 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-06	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 700 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-07	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 350 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-08	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 500 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-09	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 800 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU-TESTCELL-10	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 660 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-11	Compression or spark ignited engine dynamometer test cell with a maximum engine size of 630 hp.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TCS	Temporary Cold Start module is a refrigerated box in which fully assembled vehicles (compliant with Title II, Part A, Section 202 of the Clean Air Act) are placed to simulate cold-start conditions year-round.	11-13-2002/ 4-14-09/ 11-23-2009/ 3-5-2013	FG-TESTCELLS

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
FG-TESTCELLS	Twelve (12) compression and spark-ignited engine dynamometer test cells and one (1) Temporary Cold Start (TCS) module, permitted to burn in all modes including Wide Open Throttle mode.	EU-TESTCELL-01, EU-TESTCELL-02, EU-TESTCELL-03, EU-TESTCELL-04, EU-TESTCELL-05A, EU-TESTCELL-05B, EU-TESTCELL-06, EU-TESTCELL-07, EU-TESTCELL-08, EU-TESTCELL-09, EU-TESTCELL-10, EU-TESTCELL-11, EU-TCS

**FG-TESTCELLS
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Twelve (12) compression and spark-ignited engine dynamometer test cells and one (1) Temporary Cold Start (TCS) module, permitted to burn in all modes including Wide Open Throttle mode.

Emission Unit: EU-TESTCELL-01, EU-TESTCELL-02, EU-TESTCELL-03, EU-TESTCELL-04, EU-TESTCELL-05A, EU-TESTCELL-05B, EU-TESTCELL-06, EU-TESTCELL-07, EU-TESTCELL-08, EU-TESTCELL-09, EU-TESTCELL-10, EU-TESTCELL-11, EU-TCS

POLLUTION CONTROL EQUIPMENT

EU-TCS shall be operated with a catalytic converter or other pollution control equipment necessary to comply with Title II, Part A, Section 202 of the Clean Air Act. Engines tested in the remaining twelve test cells may or may not have installed pollution control equipment.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO _x	22.8 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-TESTCELLS	SC VI.3	R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
2. CO	71.7 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-TESTCELLS	SC VI.3	R 336.1205(1)(a) & (3), R 336.2804, 40 CFR 52.21(d)
3. VOC	9.25 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-TESTCELLS	SC VI.3	R 336.1205(1)(a) & (3), R 336.1702(a)
4. PM ₁₀	3.42 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-TESTCELLS	SC VI.3	R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
5. SO ₂	3.18 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-TESTCELLS	SC VI.3, SC VI.6	R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

See Appendix 7 for emission factor table.

II. MATERIAL LIMIT(S)

- The permittee shall burn only the following fuels in FG-TESTCELLS:

- a) Spark-ignited liquid fuels: Unleaded gasoline, methanol, ethanol, propanol, butanol, and propane.
 - b) Compression-ignited fuels: Ultra-low-sulfur diesel, biodiesel, gas to liquid (GTL) fuel, and JP8/kerosene. Ultra-low-sulfur diesel is defined as diesel fuel with a maximum sulfur content of 15 ppm (0.0015 percent) by weight.
 - c) Compressed natural gas.
(R 336.1201(3), R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))
2. The spark-ignited liquid fuel usage for FG-TESTCELLS shall not exceed 150 gallons per hour.
(R 336.1205(1)(a) & (3), R 336.1225)
 3. The compression-ignited fuel usage for FG-TESTCELLS shall not exceed 250 gallons per hour.
(R 336.1205(1)(a) & (3), R 336.1225)
 4. The compressed natural gas usage for FG-TESTCELLS shall not exceed 1,700 cubic feet per hour.
(R 336.1205(1)(a) & (3), R 336.1225)
 5. The compressed natural gas usage for FG-TESTCELLS shall not exceed 8.85 MMscf per 12-month rolling period as determined at the end of each month. **(R 336.1205(1)(a) & (3), R 336.1225)**
 6. The compression-ignited fuel usage for FG-TESTCELLS shall not exceed 150,000 gallons per 12-month rolling time period as determined at the end of each calendar month. See Appendix 7 for a list of fuels designated as compression-ignited fuel. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**
 7. The spark-ignited liquid fuel usage for FG-TESTCELLS shall not exceed 75,000 gallons per 12-month rolling time period as determined at the end of each calendar month. See Appendix 7 for a list of fuels designated as spark-ignited fuel. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU-TCS portion of the FG-TESTCELLS unless the vehicle being tested is in compliance with Title II, Part A, Section 202 of the Clean Air Act. **(R 336.1205 (1)(a) & (3), R 336.1225, R 336.1301, R 336.1331, R 336.1702(a), R 336.1901, R 336.1910, R 336.2802, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the hourly compressed natural gas usage rate, on a continuous basis, in cubic feet per hour.
(R 336.1205(1)(a) & (3), R 336.1225, R 336.2802, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the spark-ignited liquid and compression-ignited fuel usage rate, on a continuous basis, in gallons per hour. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.2802, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

V. TESTING/SAMPLING

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

1. Once every 5 years, the permittee shall verify NO_x and CO emission factors listed in Appendix 7 from a representative engine in FG-TESTCELLS, 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 336.2001, R 336.2003, R 336.2004)

2. Within 180 days after commencement of burning JP-8 as fuel, the permittee shall verify the naphthalene emission rate from a representative JP-8 fueled engine in FG-TESTCELLS, 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 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 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**
2. The permittee shall maintain records for FG-TESTCELLS for all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. This information shall include, but shall not be limited to, the following:
 - a) Testing required under the special conditions of this permit.
 - b) Documentation from each fuel supplier that each fuel is reference grade.All of the above information shall be stored in a format acceptable to the Air Quality Division. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1301, R 336.1331, R 336.1401, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**
3. The permittee shall keep the following information on a monthly basis for FG-TESTCELLS:
 - a) Spark-ignited liquid fuel used, in gallons, per month and 12-month rolling time period as determined at the end of each calendar month.
 - b) Compression-ignited fuel used, in gallons, per month and 12-month rolling time period as determined at the end of each calendar month.
 - c) Compressed natural gas used, in cubic feet, per month and 12-month rolling time period as determined at the end of each calendar month.
 - 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 monthly emission rate in tons per calendar month.
 - g) 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.
 - h) VOC emission calculations determining the monthly emission rate in tons per calendar month.
 - i) VOC emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
 - j) PM₁₀ emission calculations determining the monthly emission rate in tons per calendar month.
 - k) PM₁₀ emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
 - l) SO₂ emission calculations determining the monthly emission rate in tons per calendar month.
 - m) SO₂ emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

4. The permittee shall keep the following information on an hourly basis for FG-TESTCELLS:
 - a) A record of hours of operation.
 - b) The compressed natural gas usage rate in cubic feet per hour.
 - c) The spark-ignited liquid fuel usage rate in gallons per hour.
 - d) The compression-ignited fuel usage rate in gallons per hour.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1225)**

5. The permittee shall keep, in a satisfactory manner, records of the maximum lead content in the gasoline for each delivery. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.2804, 40 CFR 52.21(d))**
6. The permittee shall keep, in a satisfactory manner, records of the maximum sulfur content in the compression-ignited fuels for each delivery. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

VII. REPORTING

NA

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. SV-TestCell-01	5.8	35.0	R 336.1225, 40 CFR 52.21(c) & (d)
2. SV-TestCell-02	5.8	35.0	R 336.1225, 40 CFR 52.21(c) & (d)
3. SV-TestCell-03	5.8	35.0	R 336.1225, 40 CFR 52.21(c) & (d)
4. SV-TestCell-04	5.8	35.0	R 336.1225, 40 CFR 52.21(c) & (d)
5. SV-TestCell-05a	5.8	35.0	R 336.1225, 40 CFR 52.21(c) & (d)
6. SV-TestCell-05b	5.8	35.0	R 336.1225, 40 CFR 52.21(c) & (d)
7. SV-TestCell-06	8.0	36.2	R 336.1225, 40 CFR 52.21(c) & (d)
8. SV-TestCell-07	8.0	36.2	R 336.1225, 40 CFR 52.21(c) & (d)
9. SV-TestCell-08	8.0	36.2	R 336.1225, 40 CFR 52.21(c) & (d)
10. SV-TestCell-09	8.0	36.2	R 336.1225, 40 CFR 52.21(c) & (d)
11. SV-TestCell-10	8.0	36.2	R 336.1225, 40 CFR 52.21(c) & (d)
12. SV-TestCell-11	8.0	36.2	R 336.1225, 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).

FGFACILITY CONDITIONS

DESCRIPTION

The following conditions apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. CO	74.9 tpy*	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.2	R 336.1205(1)&(3)

*To establish the source-wide potential to emit of FGFACILITY for PTI 370-08D, emissions from all equipment in FGFACILITY were included in the calculations. The potential emissions from FG-TESTCELLS were calculated using the fuel restrictions in FG-TESTCELLS and Appendix 7. For all exempt equipment, the potential emissions of CO were calculated based on each piece of equipment operating at its maximum capacity for all hours of the year

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

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))**

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(3))**
2. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period CO emission calculation records for FGFACILITY, as required by SC I.1. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3))**
3. The permittee shall monitor and record, in a satisfactory manner, the fuel usage for each fuel burning process located at FGFACILITY on a monthly basis. **(R 336.1205(3))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

APPENDIX 7: Emission Factors/Calculations

The permittee shall use the following emission factors and/or calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FG-TESTCELLS:

Table 7.1 – Emission Factors

Type Of Fuel	Emission Factors in lb/1,000 gal (lb/MMscf for CNG)					
	CO	NO _x	PM ₁₀	SO ₂	VOC	Naphthalene
Compression-ignited fuels	94.0*	164*	42.5	39.7	49.3	0.011
Spark-ignited liquid fuels	1,725*	279*	6.20	5.31	148	0.088
CNG	312	2,363	9.82	0.578	116	0.101

Spark-ignited Fuel: CNG usage will be measured in cubic feet (cf). The following conversion factors will be used to convert the CNG fuel usage into gasoline gallons equivalent (GGE):
 983 Btu/cf
 8.47E-03 gal/cf

Note: Excel shall use the above CO and NO_x emission factors until the test is completed, accepted and approved by the AQD (required by the SC V.1). If the tested emission factors are higher than listed above, then Excel shall submit an application to update their permit.
 * Denotes test-derived emission factor

Table 7.2 – Description of Fuels

Type of fuel	List of fuels considered for PTI 370-08D
Compression-ignited	Ultra-low-sulfur diesel, Biodiesel, Gas to Liquid (GTL) Fuel, and JP8/Kerosene. GTL is a synthetic diesel fuel that is manufactured by converting methanol into a longer chain hydrocarbon. JP8 and Kerosene are similar fuels that are used to power aircraft and military vehicles.
Spark-ignited	Unleaded gasoline, Methanol, Ethanol, Propanol, Butanol, and Propane.
Compressed Natural Gas	Natural gas stored under high pressure.

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 336.1290.