

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

June 23, 2017

PERMIT TO INSTALL
370-08C

ISSUED TO
Ricardo, Inc.

LOCATED AT
40000 Ricardo Drive
Van Buren, Michigan

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 Environmental Quality. 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:

May 26, 2017

DATE PERMIT TO INSTALL APPROVED:

June 23, 2017

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO _{2e}	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
EU	Emission Unit	gr	Grains
FG	Flexible Group	HAP	Hazardous Air Pollutant
GACS	Gallons of Applied Coating Solids	Hg	Mercury
GC	General Condition	hr	Hour
GHGs	Greenhouse Gases	HP	Horsepower
HVLP	High Volume Low Pressure*	H ₂ S	Hydrogen Sulfide
ID	Identification	kW	Kilowatt
IRSL	Initial Risk Screening Level	lb	Pound
ITSL	Initial Threshold Screening Level	m	Meter
LAER	Lowest Achievable Emission Rate	mg	Milligram
MACT	Maximum Achievable Control Technology	mm	Millimeter
MAERS	Michigan Air Emissions Reporting System	MM	Million
MAP	Malfunction Abatement Plan	MW	Megawatts
MDEQ	Michigan Department of Environmental Quality	NMOC	Non-methane Organic Compounds
MSDS	Material Safety Data Sheet	NO _x	Oxides of Nitrogen
NA	Not Applicable	ng	Nanogram
NAAQS	National Ambient Air Quality Standards	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM10	Particulate Matter equal to or less than 10 microns in diameter
NSPS	New Source Performance Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NSR	New Source Review	pph	Pounds per hour
PS	Performance Specification	ppm	Parts per million
PSD	Prevention of Significant Deterioration	ppmv	Parts per million by volume
PTE	Permanent Total Enclosure	ppmw	Parts per million by weight
PTI	Permit to Install	psia	Pounds per square inch absolute
RACT	Reasonable Available Control Technology	psig	Pounds per square inch gauge
ROP	Renewable Operating Permit	scf	Standard cubic feet
SC	Special Condition	sec	Seconds
SCR	Selective Catalytic Reduction	SO ₂	Sulfur Dioxide
SNCR	Selective Non-Catalytic Reduction	TAC	Toxic Air Contaminant
SRN	State Registration Number	Temp	Temperature
TEQ	Toxicity Equivalence Quotient	THC	Total Hydrocarbons
USEPA/EPA	United States Environmental Protection Agency	tpy	Tons per year
VE	Visible Emissions	µg	Microgram
		µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
		yr	Year

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

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 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 R 336.1219 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 R 336.1219 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 R 336.1301, 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 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 R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

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.	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.	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.	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.	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.	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.	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.	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.	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.	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.	7-1-2000/ 4-14-2009/ 11-23-2009/ 3-5-2013	FG-TESTCELLS
EU-TESTCELL-10	Compression or spark ignited engine dynamometer test cell.	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-11	Compression or spark ignited engine dynamometer test cell.	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

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.	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
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	

The following conditions apply to: FG-TESTCELLS

DESCRIPTION: Twelve (12) compression and spark-ignited engine dynamometer test cells and one (1) Temporary Cold Start (TCS) module.

Emission Units: 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 LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO _x	34.5 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. NO _x	279 lb/1,000 gal	Test Protocol*	Compressed natural gas fueled engines in FG-TESTCELLS	SC V.2	R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
3. CO	74.6 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)
4. VOC	21.7 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 336.1702(a)
5. PM ₁₀	7.48 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)
6. SO ₂	6.94 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)
7. Formaldehyde ¹	0.567 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-TESTCELLS	SC VI.3	R 336.1224, R 336.1225

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
8. Formaldehyde ¹	0.032 pph	Hourly, Test Protocol*	FG-TESTCELLS	SC V.2 SC VI.4	R 336.1224, R 336.1225
9. Acrolein ¹	7.50E-4 lb/MMBtu	Test Protocol*	FG-TESTCELLS	SC V.2	R 336.1224, R 336.1225
*Test protocol shall specify averaging time See Appendix 7 for emission factor table.					

II. MATERIAL LIMITS

1. The compressed natural gas usage for FG-TESTCELLS shall not exceed 4,990 cubic feet per hour. **(R 336.1205(1)(a) & (3), R 336.1225)**
2. The compression-ignited fuel usage for FG-TESTCELLS shall not exceed 160,000 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))**
3. The spark-ignited fuel usage for FG-TESTCELLS shall not exceed 185,000 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 RESTRICTIONS

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 PARAMETERS

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))**

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 compressed natural gas as fuel, the permittee shall verify the formaldehyde emission rate and the NO_x and acrolein emission factors from a representative compressed natural gas 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 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)**

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) A record of the days of operation.
 - b) Daily fuel usage amounts of each fuel combusted in EU-TESTCELLS, excluding CNG. The daily fuel usage amounts shall be in gallons.
 - c) Gallons of each fuel used per month and 12-month rolling time period, excluding CNG.
 - d) Compressed natural gas use calculations determining the annual usage rate in gallons, converted from cubic feet, per 12-month rolling time period as determined at the end of each calendar month.
 - e) NO_x emission calculations determining the monthly emission rate in tons per calendar month.
 - f) 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.
 - 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) VOC emission calculations determining the monthly emission rate in tons per calendar month.
 - j) 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.
 - k) PM₁₀ emission calculations determining the monthly emission rate in tons per calendar month.
 - l) 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.
 - m) SO₂ emission calculations determining the monthly emission rate in tons per calendar month.
 - n) 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.
 - o) Formaldehyde emission calculations determining the monthly emission rate in tons per calendar month.
 - p) Formaldehyde 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 a daily basis for FG-TESTCELLS:
- A record of hours of operation.
 - The compressed natural gas usage rate in cubic feet per hour.
 - Hourly formaldehyde emission calculations.

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

1. Within 30 days after commencement of the burning of compressed natural gas authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the commencement of the activity. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTIONS

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)

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

1. Permittee shall notify the Department if a change in land use occurs for property classified as industrial or as a public roadway, where this classification was relied on to demonstrate compliance with Rule 225(1). The notification shall be submitted to the AQD District Supervisor, within 30 days of the actual land use change. Within 60 days of the land use change, the permittee shall submit to the AQD District Supervisor a plan for complying with the requirements of Rule 225(1) no later than one year after the due date of the plan submittal.¹ **(R 336.1225(4))**

Footnotes:

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

The following conditions apply Source-Wide to: FGFACILITY

DESCRIPTION: All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. CO	89.9 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 370-08C, 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. 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 LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

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 RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

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				
	CO	NO _x	PM ₁₀	SO ₂	VOC
Compression-ignited	94.0*	72.8*	42.5	39.7	49.3
Spark-ignited	641*	279*	6.20	5.31	148
CNG for Formaldehyde	0.0528 lb/MMBtu		6.13 lb/1,000 GGE		
<p><i>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):</i> 983 Btu/cf 8.47E-03 gal/cf</p>					
<p><i>Note: Ricardo 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 Ricardo shall submit an application to update their permit.</i> * Denotes test-derived emission factor</p>					

Table 7.2 – Description of Fuels

Type of fuel	List of fuels considered for PTI 370-08
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, Propane, and Compressed Natural Gas (CNG).

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.