

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

March 22, 2019

**PERMIT TO INSTALL  
155-18**

**ISSUED TO**  
FCA US LLC – Chrysler Technology Center

**LOCATED AT**  
800 Chrysler Drive  
Auburn Hills, Michigan

**IN THE COUNTY OF**  
Oakland

**STATE REGISTRATION NUMBER**  
N1436

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: <b>March 4, 2019</b>	
DATE PERMIT TO INSTALL APPROVED: <b>March 22, 2019</b>	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 <sub>2</sub> 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 <sub>2</sub> S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO <sub>x</sub>	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 <sub>2</sub>	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.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-B01	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B02	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B03	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B04	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B05	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-B06	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B07	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B08	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B09	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B10	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B11	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-B12	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B13	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B14	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B15	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B16	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-B17	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-B18	One performance test cell located in Wing B. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C01	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C02	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C03	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C04	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C05	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-C06	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C07	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C08	One performance test cell located in Wing C. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from this test cell is uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-C09	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C10	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C11	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-C12	One durability/transmission test cell located in Wing C; it can also perform simulation tests. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C13	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C14	One durability/transmission test cell located in Wing C; it can also perform simulation tests. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C15	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C16	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-C17	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C18	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C19	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-C20	One durability/transmission test cell located in Wing C. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive related drive train components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D01	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D02	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-D03	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D04	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D05	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D06	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D07	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D08	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-D09	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS
EU-CELL-D10	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS
EU-CELL-D11	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS
EU-CELL-D12	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS
EU-CELL-D13	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS
EU-CELL-D14	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-D15	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D16	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D17	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D18	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D19	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS
EU-CELL-D20	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-D21	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS
EU-CELL-D22	One durability test cell located in Wing D. The test cell contains two test stands (A & B) used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP for each test stand.	12/1998	FG-CNTRLDCCELLS
EU-CELL-E01	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCCELLS
EU-CELL-E02	One durability test cells located in Wing E; it can also perform simulation tests. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCCELLS
EU-CELL-E03	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCCELLS
EU-CELL-E04	One durability test cells located in Wing E; it can also perform simulation tests. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-E05	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-E06	One durability test cells located in Wing E; it can also perform simulation tests. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS
EU-CELL-E07	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-E08	One durability test cells located in Wing E; it can also perform simulation tests. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS
EU-CELL-E09	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-E10	One durability test cells located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-E11	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-E12	One durability test cells located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS
EU-CELL-E13	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-E14	One durability test cells located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS
EU-CELL-E15	One performance test cell located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are uncontrolled. The maximum size dynamometer that is used for testing is 1,200 HP.	06/1998	FG-UNCNTRLDCELLS
EU-CELL-E16	One durability test cells located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-CELL-E17	One durability test cells located in Wing E; it can also perform simulation tests. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS
EU-CELL-E18	One durability test cells located in Wing E. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS
EU-CELL-E19	One durability test cells located in Wing E; it can also perform simulation tests. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS
EU-CELL-E20	One durability test cells located in Wing E; it can also perform simulation tests. The test cell contains one test stand used for testing internal combustion engines and other automotive drive train related components. Emissions from the test cell are controlled with a thermal oxidizer, except during simulation testing. The maximum size dynamometer that is used for testing is 1,200 HP.	12/1998	FG-CNTRLDCELLS

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-CNTRLDCELLS	Forty-six (46) engine dynamometer test cells located in Wing C, Wing D and Wing E (durability, transmission and simulation test cells). The 46 engine dynamometer test cells house a total of 80 engine dynamometer test stands. Emissions from these test cells are controlled with thermal oxidizers, except when performing simulation testing. During simulation testing, the emissions are controlled with a catalytic converter and also a diesel particulate filter if burning diesel.	EU-CELL-C09, EU-CELL-C10, EU-CELL-C11, EU-CELL-C12, EU-CELL-C13, EU-CELL-C14, EU-CELL-C15, EU-CELL-C16, EU-CELL-C17, EU-CELL-C18, EU-CELL-C19, EU-CELL-C20, EU-CELL-D01, EU-CELL-D02, EU-CELL-D03, EU-CELL-D04, EU-CELL-D05, EU-CELL-D06, EU-CELL-D07, EU-CELL-D08, EU-CELL-D09, EU-CELL-D10, EU-CELL-D11, EU-CELL-D12, EU-CELL-D13, EU-CELL-D14, EU-CELL-D15, EU-CELL-D16, EU-CELL-D17, EU-CELL-D18, EU-CELL-D19, EU-CELL-D20, EU-CELL-D21, EU-CELL-D22, EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E10, EU-CELL-E12, EU-CELL-E14, EU-CELL-E16, EU-CELL-E17, EU-CELL-E18, EU-CELL-E19, EU-CELL-E20

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-UNCNTRLDCELLS	<p>Thirty-four (34) engine dynamometer test cells (performance test cells) located in Wings B, C and E. The 34 engine dynamometer test cells house a total of 34 engine dynamometer test stands. Performance test cells do not have emission control equipment.</p>	<p>EU-CELL-B01,                      EU-CELL-B02,                      EU-CELL-B03,                      EU-CELL-B04,                      EU-CELL-B05,                      EU-CELL-B06,                      EU-CELL-B07,                      EU-CELL-B08,                      EU-CELL-B09,                      EU-CELL-B10,                      EU-CELL-B11,                      EU-CELL-B12,                      EU-CELL-B13,                      EU-CELL-B14,                      EU-CELL-B15,                      EU-CELL-B16,                      EU-CELL-B17,                      EU-CELL-B18,                      EU-CELL-C01,                      EU-CELL-C02,                      EU-CELL-C03,                      EU-CELL-C04,                      EU-CELL-C05,                      EU-CELL-C06,                      EU-CELL-C07,                      EU-CELL-C08,                      EU-CELL-E01,                      EU-CELL-E03,                      EU-CELL-E05,                      EU-CELL-E07,                      EU-CELL-E09,                      EU-CELL-E11,                      EU-CELL-E13,                      EU-CELL-E15</p>

**FG-CNTRLDCELLS  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Forty-six (46) engine dynamometer test cells located in Wing C, Wing D and Wing E (durability, transmission and simulation test cells). The 46 engine dynamometer test cells house a total of 80 engine dynamometer test stands. Emissions from these test cells are controlled with thermal oxidizers, except when performing simulation testing. During simulation testing, the emissions are controlled with a catalytic converter and also a diesel particulate filter if burning diesel.

**Emission Unit:** EU-CELL-C09, EU-CELL-C10, EU-CELL-C11, EU-CELL-C12, EU-CELL-C13, EU-CELL-C14, EU-CELL-C15, EU-CELL-C16, EU-CELL-C17, EU-CELL-C18, EU-CELL-C19, EU-CELL-C20, EU-CELL-D01, EU-CELL-D02, EU-CELL-D03, EU-CELL-D04, EU-CELL-D05, EU-CELL-D06, EU-CELL-D07, EU-CELL-D08, EU-CELL-D09, EU-CELL-D10, EU-CELL-D11, EU-CELL-D12, EU-CELL-D13, EU-CELL-D14, EU-CELL-D15, EU-CELL-D16, EU-CELL-D17, EU-CELL-D18, EU-CELL-D19, EU-CELL-D20, EU-CELL-D21, EU-CELL-D22, EU CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E10, EU-CELL-E12, EU-CELL-E14, EU-CELL-E16, EU-CELL-E17, EU-CELL-E18, EU-CELL-E19, EU-CELL-E20

**POLLUTION CONTROL EQUIPMENT**

Eleven (11) thermal oxidizers for durability and transmission test cells. Three-way catalytic converters for simulation test cells, with diesel particulate filters if burning diesel.

**I. EMISSION LIMIT(S)**

**Scenario A:** This emission limit table is effective until the notification specified in SC VII.2 is submitted to the AQD:

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. NO <sub>x</sub>	0.1049 lb/gallon	Hourly <sup>A</sup>	While performing durability or transmission testing in FG-CNTRLDCELLS	SC V.1,	40 CFR 52.21(j)
2. NO <sub>x</sub>	218.2 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)
3. CO	0.01 lb/gallon	Hourly <sup>A</sup>	While performing durability or transmission testing in FG-CNTRLDCELLS	SC V.1	40 CFR 52.21(j)
4. CO	20.8 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing durability or transmission testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
5. CO	17.57 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing simulation testing in all listed below, combined: EU-CELL-C12, EU-CELL-C14, EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20	SC VI.6	R 336.1205(1)(a) & (3), 40 CFR 52.21(d)
6. VOC	0.006 lb/gallon	Hourly <sup>A</sup>	While performing durability or transmission testing in FG-CNTRLDCELLS	SC V.1	40 CFR 52.21(j)
7. VOC	12.5 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)
8. Lead	0.58 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)
9. PM10	15.91 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
10. PM2.5	0.0186 pph per test stand	Hourly <sup>A</sup>	While performing simulation testing in all listed below, combined: EU-CELL-C12 <sup>B</sup> , EU-CELL-C14 <sup>B</sup> , EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20	SC V.2	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
11. PM2.5	15.91 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)

<sup>A</sup> If a stack test is used to demonstrate compliance with this emission limit, the hourly emission rate during testing shall be determined by the average of the acceptable test runs performed in accordance with the method requirements.

<sup>B</sup> EU-CELL-C12 and EU-CELL-C14 each have 2 test stands, so the overall pph out of their stack would be doubled.

Default emission factors shall be used unless otherwise approved by the AQD District Supervisor:

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
Durability and Transmission Testing NO <sub>x</sub> = 0.1049 lb/gallon CO = 0.01 lb/gallon VOC = 0.006 lb/gallon Lead, leaded fuel = 0.0075 lb/gallon Lead, unleaded fuel = 0.00011 lb/gallon PM10/PM2.5, all other fuels = 0.0062 lb/gallon PM10/PM2.5, ultra-low sulfur diesel = 0.012 lb/gallon			Simulation Testing NO <sub>x</sub> = 0.0052 lb/gallon CO = 0.13 lb/gallon VOC = 0.0082 lb/gallon Lead, leaded fuel = 0.0075 lb/gallon Lead, unleaded fuel = 0.00011 lb/gallon PM10/PM2.5 = 0.0062 lb/gallon		

**Scenario B: This emission limit table is effective after the notification specified in SC VII.2 is submitted to the AQD:**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO <sub>x</sub>	10.45 pph per thermal oxidizer	Hourly <sup>A</sup>	While performing durability or transmission testing in FG-CNTRLDCELLS	SC V.1	40 CFR 52.21(j)
2. NO <sub>x</sub>	218.2 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)
3. CO	1 pph per thermal oxidizer	Hourly <sup>A</sup>	While performing durability or transmission testing in FG-CNTRLDCELLS	SC V.1	40 CFR 52.21(j)
4. CO	20.8 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing durability or transmission testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)
5. CO	17.57 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing simulation testing in all listed below, combined: EU-CELL-C12, EU-CELL-C14, EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20	SC VI.6	R 336.1205(1)(a) & (3), 40 CFR 52.21(d)
6. VOC	0.64 pph per thermal oxidizer	Hourly <sup>A</sup>	While performing durability or transmission testing in FG-CNTRLDCELLS	SC V.1	40 CFR 52.21(j)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
7. VOC	12.5 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)
8. Lead	0.58 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	40 CFR 52.21(j)
9. PM10	15.91 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
10. PM2.5	0.0186 pph per test stand	Hourly <sup>A</sup>	While performing simulation testing in all listed below, combined: EU-CELL-C12 <sup>B</sup> , EU-CELL-C14 <sup>B</sup> , EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20	SC V.2	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
11. PM2.5	15.91 tpy	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)

<sup>A</sup> If a stack test is used to demonstrate compliance with this emission limit, the hourly emission rate during testing shall be determined by the average of the acceptable test runs performed in accordance with the method requirements.

<sup>B</sup> EU-CELL-C12 and EU-CELL-C14 each have 2 test stands, so the overall pph out of their stack would be doubled.

Default emission factors shall be used unless otherwise approved by the AQD District Supervisor:

Durability and Transmission Testing NO <sub>x</sub> = 0.1049 lb/gallon CO = 0.01 lb/gallon VOC = 0.006 lb/gallon Lead, leaded fuel = 0.0075 lb/gallon Lead, unleaded fuel = 0.00011 lb/gallon PM10/PM2.5, all other fuels = 0.0062 lb/gallon PM10/PM2.5, ultra-low sulfur diesel = 0.012 lb/gallon	Simulation Testing NO <sub>x</sub> = 0.0052 lb/gallon CO = 0.13 lb/gallon VOC = 0.0082 lb/gallon Lead, leaded fuel = 0.0075 lb/gallon Lead, unleaded fuel = 0.00011 lb/gallon PM10/PM2.5 = 0.0062 lb/gallon
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**II. MATERIAL LIMIT(S)**

**Scenario A: This material limit table is effective until the notification specified in SC VII.2 is submitted to the AQD:**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Total Fuel	4,160,700 gallons/yr <sup>C</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j)
1a. Ultra-low sulfur diesel fuel	1,040,175 gallons/yr <sup>D</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing durability or transmission testing in FG-CNTRLDCELLS	SC VI.6	R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d)
1b. Total Fuel	265,000 gallons/yr <sup>D</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing simulation testing in all listed below, combined: EU-CELL-C12, EU-CELL-C14, EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20	SC VI.6	R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d)
1c. Leaded Gasoline	95,000 gallons/yr <sup>D,E</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS and FG-UNCNTRLDCELLS	SC VI.2, SC VI.6	40 CFR 52.21(d)
2. Total Fuel	26,311 gallons/day <sup>C</sup>	Average calendar day as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j)

<sup>C</sup> Gaseous fuels must be converted to Gasoline Gallon Equivalents (GGE) for demonstrations of compliance with this material limits. One GGE of natural gas is equal to 125 ft<sup>3</sup>.

<sup>D</sup> These material limits are subsets of SC II.1 and are not in addition to SC II.1. They must be included in the total fuel calculation to demonstrate compliance.

<sup>E</sup> This material limit is a combined limit for FG-CNTRLDCELLS and FG-UNCNTRLDCELLS.

**Scenario B: This material limit table is effective after the notification specified in SC VII.2 is submitted to the AQD:**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Total Fuel	4,160,700 gallons/yr <sup>C</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.6	R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j)
1a. Ultra-low sulfur diesel fuel	1,040,175 gallons/yr <sup>D</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing durability or transmission testing in FG-CNTRLDCELLS	SC VI.6	R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d)
1b. Total Fuel	265,000 gallons/yr <sup>D</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing simulation testing in all listed below, combined: EU-CELL-C12, EU-CELL-C14, EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20	SC VI.6	R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d)
1c. Leaded Gasoline	95,000 gallons/yr <sup>D,E</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS and FG-UNCNTRLDCELLS	SC VI.2, SC VI.7	40 CFR 52.21(d)
2. Total Fuel	1,096.3 gallons/hr <sup>C</sup>	Average hour as determined at the end of each calendar day.	While performing any type of testing in FG-CNTRLDCELLS	SC VI.7	R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j)

<sup>C</sup> Gaseous fuels must be converted to Gasoline Gallon Equivalents (GGE) for demonstrations of compliance with this material limits. One GGE of natural gas is equal to 125 ft<sup>3</sup>.

<sup>D</sup> These material limits are subsets of SC II.1 and are not in addition to SC II.1. They must be included in the total fuel calculation to demonstrate compliance.

<sup>E</sup> This material limit is a combined limit for FG-CNTRLDCELLS and FG-UNCNTRLDCELLS.

3. The permittee shall only burn the following fuels on test stands in FG-CNTRLDCELLS:
  - a. Durability and transmission testing: unleaded gasoline (with ethanol contents less than 20 percent), various ethanol and unleaded gasoline blends (with ethanol contents from 20 to 85 percent by volume), ethanol fuel (fuel with an ethanol content of at least 85 percent by volume), leaded gasoline ultra-low sulfur diesel, and compressed natural gas.
  - b. Simulation testing: unleaded gasoline (with ethanol contents less than 20 percent), various ethanol and gasoline blends (with ethanol contents from 20 to 85 percent by volume), ethanol fuel (fuel with an ethanol content of at least 85 percent by volume), leaded gasoline, and ultra-low sulfur diesel.
  - c. Ultra-low sulfur diesel shall have a maximum sulfur content of 15 ppm (0.0015 percent) by weight. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not operate the durability and transmission test cells unless the associated thermal oxidizers are installed, maintained and operated in a satisfactory manner. Proper operation of the thermal oxidizers includes maintaining a minimum temperature of the greater of the following for each oxidizer:
  - a. 1400°F averaged over any consecutive three-hour period and a minimum retention time of 0.5 second.
  - b. The thermal oxidizer temperature averaged over any consecutive three-hour period during AQD approved testing that demonstrated compliance with the NO<sub>x</sub>, CO, and VOC emission rates.

**(R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(c), (d) & (j))**

2. Within 180 days of trial operation of the simulation testing, the permittee shall submit, implement, and maintain an updated malfunction abatement plan (MAP) as described in Rule 911(2) for FG-CNTRLDCELLS. The MAP shall, at a minimum, specify the following new requirements:
  - a. How the test cells will be switched between the simulation testing and durability or transmission testing.
  - b. How the permittee will assure that the thermal oxidizer is properly reconnected to a test cell that was previously doing simulation testing.

The MAP will continue to include the optimum operating parameters for the thermal oxidizers, maintenance and inspection schedules, monitoring equipment, and corrective action plans for equipment failure. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))**

3. The permittee shall comply with the approved written plan for the collection, analysis, and recording of data used to determine compliance with the fuel use limits.
  - a. The approved Fuel Usage Monitoring Plan includes measures that will be taken to insure the quality of the data, such as meter calibration procedures.
  - b. The approved written plan shall be an enforceable requirement of this permit.
  - c. The plan may be revised and resubmitted for approval by AQD. The permittee shall revise the plan within 45 days after the notification specified in SC VII.2 is submitted to the AQD.
  - d. The existing approved plan shall apply until any revision is approved.

**(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j))**

### **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. If an acceptable emissions test has not been conducted within the six years prior to October 30, 2019, the permittee shall verify, by October 31, 2019, NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, and PM<sub>2.5</sub> emission rates from a thermal oxidizer that is controlling a representative number of durability, and transmission test cells in FG-CNTRLDCELLS, by testing at owner's expense, in accordance with Department requirements, unless the permittee has submitted an acceptable demonstration that the most recent acceptable test remains valid and representative per pollutant. A representative number of test cells means several test cells operating in various testing modes. The permittee must complete the required testing once every five years of operation, thereafter. Testing shall be based on an average of three 1-hour or longer test runs performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
NO <sub>x</sub>	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A
VOCs	40 CFR Part 60, Appendix A
PM10/PM2.5	40 CFR Part 51, Appendix M

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test in a format approved by the AQD. **(R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(j))**

2. Within 180 days of trial operation of the simulation testing, the permittee shall verify NO<sub>x</sub>, CO, VOC, PM10, and PM2.5 emission rates from simulation test cells in FG-CNTRLDCCELLS, by testing at owner's expense, in accordance with Department requirements. Testing may be conducted on representative test cells if approved by the AQD District Supervisor. The permittee must complete the required testing once every five years of operation, thereafter, unless the permittee has submitted an acceptable demonstration that the most recent acceptable test remains valid and representative per pollutant. Testing shall be based on an average of three 1-hour or longer test runs performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
NO <sub>x</sub>	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A
VOCs	40 CFR Part 60, Appendix A
PM10/PM2.5	40 CFR Part 51, Appendix M

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Emission rate results may be compared to the following:

Pollutant	lb/gallon	Typically higher emitting fuel
NO <sub>x</sub>	0.0052	Ultra-low sulfur diesel
CO	0.13	Gasoline
VOCs	0.0082	Gasoline
PM10/PM2.5	0.0062	Gasoline, if ultra-low sulfur diesel has diesel particulate filter

The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (3), R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

**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 30th 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), 40 CFR 52.21(j))**
2. The permittee shall keep, in a satisfactory manner, records of the maximum lead content in each fuel. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 52.21(d))**

3. The permittee shall keep, in a satisfactory manner, records of the maximum sulfur content in the ultra-low sulfur diesel fuel. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**
4. The permittee shall install, calibrate, maintain and operate on a continuous basis and in a satisfactory manner, during engine testing operations, a device to monitor the temperature in the thermal oxidizers near the combustion chamber outlet. On a continuous basis, during engine testing operations, the permittee shall keep records of the temperature averaged over any consecutive three-hour period. **(R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(c), (d) & (j))**
5. The permittee shall calculate and keep records of the annual emissions of NO<sub>x</sub> from FG-CNTRLDCELLS, described in Appendix A, in tons per calendar year. Calculations and record keeping shall begin the month in which regular operations of FG-CNTRLDCELLS resume and shall continue for five (5) calendar years. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.2818, R 336.2902)**
6. **Scenario A: This monitoring/recordkeeping condition is effective until the notification specified in SC VII.2 is submitted to the AQD.** The permittee shall keep the following information on a monthly basis for FG-CNTRLDCELLS:
  - a. A record of the days of operation for each test cell operating during the calendar month.
  - b. Gallons of each fuel used per month in each test cell for each type of testing (routed to a thermal oxidizer or simulation).
  - c. Daily fuel use calculations based upon a calendar month fuel use for each test cell divided by the number of days each respective test cell operated during the calendar month. This is a combination of all test types for each test cell. This calculation shall be performed for each of the 46 test cells and then added together to determine the total daily fuel usage rate.
  - d. Ultra-low sulfur diesel fuel use calculations determining the monthly and annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for all test cells when routed to the thermal oxidizers in FG-CNTRLDCELLS.
  - e. Total fuel use calculations determining the monthly and annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for simulation testing for EU-CELL-C12, EU-CELL-C14, EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20 in FG-CNTRLDCELLS combined.
  - f. Leaded gasoline fuel use calculations determining the annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for FG-CNTRLDCELLS and FG-UNCNTRLDCELLS combined.
  - g. Total fuel use calculations determining the monthly and annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for all test cells in FG-CNTRLDCELLS and all testing types combined.
  - h. NO<sub>x</sub>, VOC, lead, PM10, and PM2.5 emission calculations determining the monthly emission rate in tons per calendar month.
  - i. CO emission calculations determining the monthly emission rate in tons per calendar month for durability and transmission testing combined and for simulation testing.
  - j. NO<sub>x</sub>, VOC, lead, PM10, and PM2.5 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. 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 for durability and transmission testing combined and for simulation testing.

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, R 336.1702(a), 40 CFR 52.21(c), (d), & (j))**

6. **Scenario B: This monitoring/recordkeeping condition is effective after the notification specified in SC VII.2 is submitted to the AQD.** The permittee shall keep the following information on a monthly basis for FG-CNTRLDCELLS:
- a. Gallons of each fuel used per month in each test cell for each type of testing (routed to a thermal oxidizer or simulation).
  - b. Ultra-low sulfur diesel fuel use calculations determining the monthly and annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for all test cells when routed to the thermal oxidizers in FG-CNTRLDCELLS.
  - c. Total fuel use calculations determining the monthly and annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for simulation testing for EU-CELL-C12, EU-CELL-C14, EU-CELL-E02, EU-CELL-E04, EU-CELL-E06, EU-CELL-E08, EU-CELL-E17, EU-CELL-E19, EU-CELL-E20 in FG-CNTRLDCELLS combined.
  - d. Leaded gasoline fuel use calculations determining the annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for FG-CNTRLDCELLS and FG-UNCNTRLDCELLS combined.
  - e. Total fuel use calculations determining the monthly and annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month for all test cells in FG-CNTRLDCELLS and all testing types combined.
  - f. NO<sub>x</sub>, VOC, lead, PM10, and PM2.5 emission calculations determining the monthly emission rate in tons per calendar month.
  - g. CO emission calculations determining the monthly emission rate in tons per calendar month for durability and transmission testing combined and for simulation testing.
  - h. NO<sub>x</sub>, VOC, lead, PM10, and PM2.5 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. 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 for durability and transmission testing combined and for simulation testing.

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, R 336.1702(a), 40 CFR 52.21(c), (d), & (j))**

7. **Scenario B: This monitoring/recordkeeping condition is effective after the notification specified in SC VII.2 is submitted to the AQD.** The permittee shall keep the following information on a daily basis for FG-CNTRLDCELLS:
- a. A record of hours of operation for each test cell operating during the calendar day.
  - b. Gallons of each fuel used per day in each test cell for all types of testing combined.
  - c. Hourly fuel use calculations based upon a calendar day fuel use for each test cell divided by the number of hours each respective test cell operated during the calendar day. This is a combination of all test types for each test cell. This calculation shall be performed for each of the 80 test stands and then added together to determine the total hourly fuel usage rate.

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 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j))**

## **VII. REPORTING**

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification of the first test stand 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 completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of simulation testing in FG-CNTRLDCELLS. **(R 336.1201(7)(a))**
2. The permittee shall notify the AQD District Supervisor, in writing, of the intent to change from Scenario A to Scenario B, which affects the applicability of emission limits, material limits, and monitoring and recordkeeping conditions. All affected requirements are designated as Scenario A or Scenario B. If there is no designation

of Scenario in the Special Condition, then the condition is applicable regardless of the operating scenario.  
**(40 CFR 52.21(j))**

3. The permittee shall submit records of the annual actual emissions of NO<sub>x</sub> from FG-CNTRLDCCELLS, described in Appendix A, in tons per calendar year, to the AQD Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur:
  - a. The calendar year actual emissions of NO<sub>x</sub> exceed the baseline actual emissions (BAE) by a significant amount (as defined by R 336.2801 and R 336.2901), and
  - b. The calendar year actual emissions differ from the pre-construction projection.

The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to SC VI.5, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection).  
**(R 336.2818, R 336.2902)**

4. Within 90 days after issuance of this permit, the permittee shall submit a record of the size of the dynamometer used for each test stand in each test cell to the AQD District Supervisor and the AQD Permits Section in an acceptable format. **(R 336.1201(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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-WC-TC-C12A&B	16	59	R 336.1225, 40 CFR 52.21(c) & (d)
2. SV-WC-TC-C14A&B	16	59	R 336.1225, 40 CFR 52.21(c) & (d)
3. SV-WC-TC-C16A&B <sup>F</sup>	16	56	R 336.1225, 40 CFR 52.21(c) & (d)
4. SV-WC-TO-91-4.01	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
5. SV-WC-TO-91-4.02	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
6. SV-WC-TO-91-4.03	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
7. SV-WD-TO-92-4.01	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
8. SV-WD-TO-92-4.02	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
9. SV-WD-TO-92-4.03	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
10. SV-WD-TO-92-4.04	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
11. SV-WD-TO-92-4.05	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
12. SV-WD-TO-92-4.06	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
13. SV-WE-TO-93-4.01	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
14. SV-WE-TO-93-4.02	24	59	R 336.1225, 40 CFR 52.21(c) & (d)
15. SV-WE-TC-E02	12	56	R 336.1225, 40 CFR 52.21(c) & (d)

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
16. SV-WE-TC-E04	12	56	R 336.1225, 40 CFR 52.21(c) & (d)
17. SV-WE-TC-E06	12	56	R 336.1225, 40 CFR 52.21(c) & (d)
18. SV-WE-TC-E08	12	56	R 336.1225, 40 CFR 52.21(c) & (d)
19. SV-WE-TC-E17	12	56	R 336.1225, 40 CFR 52.21(c) & (d)
20. SV-WE-TC-E19	12	56	R 336.1225, 40 CFR 52.21(c) & (d)
21. SV-WE-TC-E20	12	56	R 336.1225, 40 CFR 52.21(c) & (d)
<sup>F</sup> Stacks are abandoned and not connected to engine test stands.			

**IX. OTHER REQUIREMENT(S)**

1. Special conditions that are effective until the notification specified in SC VII.2 is submitted to the AQD will become obsolete upon submittal of the notification. **(40 CFR 52.21(j))**

**Footnotes:**

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

**FG-UNCNTRLDCELLS  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

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

**Emission Unit:** EU-CELL-B01, EU-CELL-B02, EU-CELL-B03, EU-CELL-B04, EU-CELL-B05, EU-CELL-B06, EU-CELL-B07, EU-CELL-B08, EU-CELL-B09, EU-CELL-B10, EU-CELL-B11, EU-CELL-B12, EU-CELL-B13, EU-CELL-B14, EU-CELL-B15, EU-CELL-B16, EU-CELL-B17, EU-CELL-B18, EU-CELL-C01, EU-CELL-C02, EU-CELL-C03, EU-CELL-C04, EU-CELL-C05, EU-CELL-C06, EU-CELL-C07, EU-CELL-C08, EU-CELL-E01, EU-CELL-E03, EU-CELL-E05, EU-CELL-E07, EU-CELL-E09, EU-CELL-E11, EU-CELL-E13, EU-CELL-E15

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. NO <sub>x</sub>	0.20 lb/gallon	Hourly <sup>A</sup>	FG-UNCNTRLDCELLS	SC V.2	40 CFR 52.21(j)
2. NO <sub>x</sub>	32.1 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-UNCNTRLDCELLS	SC VI.7	40 CFR 52.21(j)
3. CO	3.12 lb/gallon	Hourly <sup>A</sup>	FG-UNCNTRLDCELLS	SC V.2	40 CFR 52.21(j)
4. CO	501 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-UNCNTRLDCELLS	SC VI.8	40 CFR 52.21(j)
5. VOC	0.16 lb/gallon	Hourly <sup>A</sup>	FG-UNCNTRLDCELLS	SC V.2	R 336.1225, R 336.1702(a)
6. VOC	25.7 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-UNCNTRLDCELLS	SC VI.9	R 336.1225, R 336.1702(a)
7. Lead	0.37 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-UNCNTRLDCELLS	SC VI.10	40 CFR 52.21(j)

<sup>A</sup> If a stack test is used to demonstrate compliance with this emission limit, the hourly emission rate during testing shall be determined by the average of the acceptable test runs performed in accordance with the method requirements.

Default emission factors shall be used unless otherwise approved by the AQD District Supervisor:  
 NO<sub>x</sub> = 0.20 lb/gallon  
 CO = 3.12 lb/gallon  
 VOC = 0.16 lb/gallon  
 Lead, leaded fuel = 0.0075 lb/gallon  
 Lead, unleaded fuel = 0.00011 lb/gallon

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Total Fuel	320,952 gallons/yr	12-month rolling time period as determined at the end of each calendar month.	FG-UNCNTRLDCELLS	SC VI.1, SC VI.4	R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j)
1a. Leaded Gasoline	95,000 gallons/yr <sup>C,D</sup>	12-month rolling time period as determined at the end of each calendar month.	While performing any type of testing in FG-CNTRLDCELLS and FG-UNCNTRLDCELLS	SC VI.1, SC VI.5, SCVI.6	40 CFR 52.21(d)
2. Total Fuel	2,362 gallons/day	Calendar day	FG-UNCNTRLDCELLS	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j)

<sup>C</sup>This material limit is a subset of SC II.1 and is not in addition to SC II.1. It must be included in the total fuel calculation to demonstrate compliance.  
<sup>D</sup>This material limit is a combined limit for FG-CNTRLDCELLS and FG-UNCNTRLDCELLS.

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall comply with the approved written plan for the collection, analysis, and recording of data used to determine compliance with the fuel use limits. The approved Fuel Usage Monitoring Plan includes measures that will be taken to insure the quality of the data, such as meter calibration procedures. The approved written plan shall be an enforceable requirement of this permit. The plan may be revised and resubmitted for approval by AQD. The existing approved plan shall apply until any revision is approved. **(R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j))**

**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. All testing, sampling, analytical and calibration procedures used for this test program shall be performed in accordance with 40 CFR Part 60, Appendix A, Methods 2, 7E, 10 and 25A, or other acceptable reference methods approved by the AQD. All test methods must be approved by AQD prior to testing. Not less than 60 days prior to the anticipated test date, the permittee shall submit a complete test plan to the AQD. **(R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(j))**
2. Verification of NO<sub>x</sub>, CO, and VOC emission rates from a representative number of performance test cells in FG-UNCNTRLDCELLS, by testing, at owner's expense, in accordance with Department requirements, is required within 365 days of issuance of this permit if an acceptable emissions test has not been conducted within five years prior to the issuance of this ROP, unless the permittee has submitted and acceptable demonstration that the most recent acceptable test remains valid and representative. A representative number of test cells means several test cells operating in various testing modes. No less than 60 days prior to testing, a complete stack-testing plan must be submitted to the Air Quality Division. The final plan must be approved by the Division prior to testing. Verification of emission rates includes the submittal of a complete report of the test results within 60 days following the last day of testing. **(R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(j))**
3. After October 31, 2006, additional testing shall be conducted, at a minimum, every five years from the date of the last test. **(R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(j))**

## **VI. MONITORING/RECORDKEEPING**

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

1. The permittee shall monitor and record the fuel usage from each test stand on a monthly basis. **(R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d) & (j))**
2. The permittee shall monitor and record the number of days each test stand operated during each calendar month. **(R 336.1702(a), 40 CFR 52.21(c), (d) & (j))**
3. Within 30 days of the end of the calendar month, the permittee shall calculate daily fuel usage rate based upon a calendar month fuel use for each test stand divided by the number of days each respective test stand operated during the calendar month. This calculation shall be performed for each of the 34 test stands and then added together to determine the total daily fuel usage rate. **(R 336.1702(a), 40 CFR 52.21(c), (d) & (j))**
4. The permittee shall keep a record of total monthly and 12-month rolling time period fuel use for all test stands included in FG-UNCNTRLDCELLS. **(R 336.1225, R 336.1702(a), 40 CFR 52.21(c), (d), & (j))**
5. The permittee shall keep a record of the total monthly and 12-month rolling time period leaded fuel usage for all test cells included in FG-CNTRLDCELLS and in FG-UNCNTRLDCELLS combined for the purpose of compliance demonstration. **(40 CFR 52.21(d))**
6. The permittee shall keep records of the maximum lead content for each type of fuel used. **(40 CFR 52.21(d))**
7. The permittee shall keep monthly and previous 12-month NOx emission calculation records for the purpose of compliance demonstration. **(40 CFR 52.21(j))**
8. The permittee shall keep monthly and previous 12-month CO emission calculation records for the purpose of compliance demonstration. **(40 CFR 52.21(j))**
9. The permittee shall keep monthly and previous 12-month VOC emission calculation records for the purpose of compliance demonstration. **(R 336.1225, R 336.1702(a))**
10. The permittee shall keep monthly and previous 12-month lead emission calculation records for the purpose of compliance demonstration. **(40 CFR 52.21(d))**

## **VII. REPORTING**

1. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**
2. Within 90 days after issuance of this permit, the permittee shall submit a record of the size of the dynamometer used for each test stand in each test cell to the AQD District Supervisor and the AQD Permits Section in an acceptable format. **(R 336.1201(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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-WINGB-PERF	10	56	R 336.1225, 40 CFR 52.21(c) & (d)
2. SV-WINGC-PERF	16	56	R 336.1225, 40 CFR 52.21(c) & (d)
3. SV-WINGE-PERF	10	56	R 336.1225, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

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

**APPENDIX A**  
**Recordkeeping Provisions for Source Using**  
**Actual to Projected-Actual Applicability Test**

All information in this Appendix shall be maintained pursuant to R 336.2818 and R 336.2902 for five years after the emission unit(s) identified in Table C resume normal operations, and shall be made available to the Department upon request.

- A. Project Description: The project is to allow simulation testing in 9 test cells of the 46 test cells permitted under FG-CNTRLDCELLS. The simulation testing will require the construction of a bypass stack for each test cell and the ability to run a type of testing that is not controlled by a thermal oxidizer. The test cells will be able to switch between simulation testing and durability or transmission testing, which will be controlled by a thermal oxidizer. Multiple fuels are allowed in all testing types.
- B. Applicability Test Description: Minor modifications are not subject to PSD. Actual to projected actual applicability test as described in the table below will be used to demonstrate that PSD does not apply to these modifications.
- C. Emission Limitations for FG-CNTRLDCELLS:

**Table C**

<b>Emissions for FG-CNTRLDCELLS</b>	<b>NO<sub>x</sub></b>	<b>Reference</b>
	<b>tpy</b>	
A. Baseline Actual Emissions <sup>1</sup>	119.23	MAERS data from 2012/2013, used for all pollutants
B. Capable of Accommodating <sup>2</sup>	149.71	May 2013, ratioed to 30-days
C. Projected Actual Emissions <sup>3</sup>	184.21	
D. Excluded Emissions (D=B-A)	30.48	
<b>E. Total Project Increase (E=C-A-D)</b>	<b>34.51</b>	

<sup>1</sup> Average actual annual emissions emitted from FG-CNTRLDCELLS during a 24-month consecutive time period.  
<sup>2</sup> Emissions that FG-CNTRLDCELLS is capable of accommodating in the future. Must have been achieved during the baseline period.  
<sup>3</sup> Projected Actual Emissions based on new and existing fuel restrictions.