
From: Chloe Palajac <CPalajac@nthconsultants.com>
Sent: Tuesday, February 4, 2020 4:00 PM
To: Loftus, Rebecca (EGLE); EGLE-ROP
Cc: Sandoval, C. Nazaret (EGLE); Korniski, Jeffrey (EGLE); Kantola, Troy; Pritchett, Bradley; Keri.Westbrooke@federalmogul.com; Cummings, Chris; Rhiana Dornbos; Eric Marko
Subject: N6327 - ROP Renewal Application
Attachments: FM ROP Renewal Application.pdf; N6327_ROP_MARK-UP.doc

Hello Rebecca,

On behalf of Federal-Mogul Powertrain, LLC (Federal-Mogul), attached is the renewal application for Federal-Mogul's Renewable Operating Permit (ROP) No. MI-ROP-N6327-2015. The ROP Renewal Application is being submitted electronically to allow for an administrative completeness determination pursuant to Rule 336.1210(2)(a)(i)(B). We are sending the hard copy with original signatures to the EGLE Detroit District Office as well.

Please contact Eric Marko at (616)451-6244 if you have questions during the review process.

Thank you,

Chloe Palajac
Staff Engineer
Direct: 616.451.6243 | Mobile: 313.600.1191
cpalajac@nthconsultants.com





Plymouth Technical Center

February 4, 2020

Ms. Rebecca Loftus
EGLE – Air Quality Division
Detroit District Office
Cadillac Place, Suite 2-300
3058 West Grand Boulevard
Detroit, MI 48202-6058

**Re: Renewal Application for Renewable Operating Permit (ROP)
Federal-Mogul Powertrain, LLC (SRN: N6327)
Plymouth, Michigan**

Dear Ms. Loftus,

Federal-Mogul Powertrain, LLC (Federal-Mogul) is submitting the enclosed Renewable Operating Permit (ROP) Renewal Application for the Federal-Mogul Powertrain facility located at 47001 Port Street in Plymouth, MI. Federal-Mogul operates sixteen (16) dynamometer engine test cells using gasoline, diesel, and E-85 fuels in accordance with ROP No. MI-ROP-N6327-2015.

ROP No. MI-ROP-N6327-2015 was issued on August 21, 2015 and expires on August 21, 2020. As required by R 336.1210(9), the facility must submit an administratively complete ROP Renewal Application not more than 18 months, but not less than 6 months, prior to the expiration date of the existing ROP. The ROP Renewal Application must be submitted and deemed administratively complete by February 21, 2020. The ROP Renewal Application is being submitted electronically, in addition to paper hard copy, to allow for an administrative completeness determination pursuant to Rule R 336.1210(2)(a)(i)(B).

This ROP Renewal Application incorporates changes and additions since the previous renewal, including incorporation of additional exempt sources, changes to emission unit descriptions, and other administrative changes. The ROP Application certification form (C-001), a marked-up copy of ROP No. MI-ROP-N6327-2015, a copy of the facility's updated CAM plan, and other supporting documents for the Renewal Application are enclosed.



Additionally, in accordance with FG-ALLCELLS Special Condition VI.18, we are requesting approval from the Air Quality Division (AQD) District Supervisor to update the carbon monoxide (CO) destruction efficiency factor for Durability Cycle B, listed in Appendix 7 of the ROP, that is used to calculate monthly and 12-month rolling CO emissions. This update incorporates recent data from the test program conducted on May 7, 2019.

If there are questions regarding this ROP Renewal Application, please contact me at (734) 254-8228 or Mr. Eric Marko of NTH Consultants, Ltd. at (517) 484-6900.

Sincerely,

A handwritten signature in black ink, appearing to read "Keri Westbrooke", written over a horizontal line.

Keri Westbrooke
Director of Engineering of Technology
Tenneco Powertrain Division

cc: Nazaret Sandoval, EGLE
Jeff Korniski, EGLE
Troy Kantola, Federal-Mogul
Bradley Pritchett, Federal-Mogul
Eric Marko, NTH
EGLE-ROP@michigan.gov

ROP Renewal Application



Federal-Mogul Powertrain, LLC

47001 Port Street
Plymouth, Michigan

NTH Project No. 74-190024-01
February 3, 2020

NTH Consultants, Ltd.
3001 Coolidge Road, Suite 101
East Lansing, MI 48823





Table of Contents

1.0 INTRODUCTION	1
2.0 ROP RENEWAL APPLICATION	1
3.0 REQUEST FOR APPROVAL TO UPDATE APPENDIX 7	3

C-001 FORM

ROP RENEWAL APPLICATION FORM WITH AI-001 FORM

APPENDIX A: TEST CELL LAYOUT DIAGRAM

APPENDIX B: POTENTIAL TO EMIT CALCULATIONS

APPENDIX C: COMPLIANCE ASSURANCE MONITORING PLAN

APPENDIX D: SPACE HEATER INVENTORY

APPENDIX E: PARTS WASHERS SPECIFICATIONS

APPENDIX F: OPERATIONAL FLEXIBILITY CHANGE TO TEST CELL 13

APPENDIX G: BASIS FOR ROP APPENDIX 7 FACTOR CHANGE

APPENDIX H: MI-ROP-N6327-2015 MARK-UP



1.0 INTRODUCTION

Federal-Mogul Powertrain, LLC (Federal-Mogul) is an existing engine testing facility located at 47001 Port Street in Plymouth, Wayne County, Michigan. The facility tests engines and engine components in sixteen (16) dynamometer cells using gasoline, diesel, and E-85 fuels. Fifteen (15) test cells are used for testing engines ranging in size from 250 to 600 horsepower, and one (1) test cell typically tests small engines. Other emission units at the facility include two (2) multi-compartment steel underground fuel storage tanks, diesel fuel tanks, one (1) blow-off tank, three (3) parts washers, and test units including a bearing testing machine and multi-component sealing shaft testing system that are exempt pursuant to R 336.1290. Federal-Mogul anticipates installing a valve test rig consisting of natural gas-fired burners that are also exempt pursuant to R 336.1291.

Federal-Mogul operates in accordance with Renewable Operating Permit (ROP) No. MI-ROP-N6327-2015, which was issued on August 21, 2015. As required by R 336.1210(9), the facility must submit an administratively complete ROP Renewal Application not more than 18 months, but not less than 6 months, prior to the expiration date of the current ROP. The current ROP expires on August 21, 2020; the ROP Renewal Application must be submitted and deemed administratively complete by February 21, 2020.

Federal-Mogul is recording nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compound (VOC) emissions pursuant to the ROP and maintains an air injection control system (AICS) for controlling emissions of CO and VOC at the test cells. The test cells are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR Part 64, with a CO emissions limit of 223.3 tpy.

2.0 ROP RENEWAL APPLICATION

The enclosed ROP Renewal Application satisfies the requirement of R 336.1210(9). The ROP Renewal Application has been developed using the ROP Renewal Application Form (EQP 6000), revised as of April 2019. The certified ROP application is being submitted electronically, in addition to paper copy, to allow for an administrative completeness determination pursuant to R 336.1210(2)(a)(i)(B). The ROP Renewal Application Form has been populated according to guidance provided by Michigan Department of Environment, Great Lakes & Energy (EGLE), and the paper copy of the Renewal Application has been



organized according to EGLE instructions. The ROP Renewal Application is certified by the Responsible Official via the C-001 form.

In February 2016, three (3) new parts washers were installed to replace the previous parts washers. Parts washer specifications are enclosed in Appendix E.

Test Cell 13 (identified as EU-TESTCELL13 in the ROP) is designated for testing small engines, and multiple small engines can be tested at one time. In March 2016, a dividing wall was added to EU-TESTCELL13 to allow for safer working conditions for technicians performing mechanical work on one engine while another engine is running. Two (2) stacks, one on each side of the dividing wall, and each of four inches in diameter and height of 32 feet, replaced the one (1) stack with a six-inch diameter and height of 32 feet. There was no change in exhaust location, test cell operation, or potential emissions. On June 15, 2018, Federal-Mogul submitted an Operational Flexibility Change to EGLE to incorporate the stack change into the ROP. Our June 2018 submittal is included in Appendix F.

In July 2018, Federal-Mogul began relocating the shaft sealing system from the Sealing Systems Technical Center in Ann Arbor, MI, to the Plymouth, MI facility. The sealing shaft system is exempt pursuant to R 336.1290. Later this year, Federal-Mogul anticipates installing a valve test rig consisting of natural gas-fired burners that would be exempt pursuant to R 336.1291. This equipment is included in the ROP Renewal Application and/or ROP, as required.

Based on the additions listed above, Federal-Mogul is proposing the following changes to the conditions contained in the ROP:

- Incorporation of additional equipment exempt pursuant to R 336.1290;
- An update to the description of parts washers;
- An update to the number of stacks at FG-ALLCELLS; and
- Miscellaneous administrative changes, including emission unit descriptions and test protocol submittal timing.

The following documents are enclosed with this ROP Renewal Application:

- A diagram of the test cell layout;



- Potential to emit calculations of criteria pollutants and hazardous air pollutants (HAPs) for the space heaters, sealing shaft testers, parts washers, and valve test rig burners;
- The CAM Plan updated based on EGLE's latest format;
- An inventory of natural gas space heaters;
- Specifications for the three (3) parts washers;
- The Operational Flexibility Change submittal for EU-TESTCELL13;
- A portion of Federal-Mogul's ROP from 2003 with a correction to an emission factor; and
- Proposed changes to the ROP shown in the mark-up copy of ROP No. MI-ROP-N6327-2015.

3.0 REQUEST FOR APPROVAL TO UPDATE APPENDIX 7

In accordance with FG-ALLCELLS Special Condition VI.18, we are requesting approval from the Air Quality Division (AQD) District Supervisor to update the destruction efficiency factor that is used to calculate monthly and 12-month rolling emissions of carbon monoxide (CO) listed in Appendix 7 of the ROP for Durability Cycle B, consistent with our emissions testing program conducted on May 7, 2019.

FG-ALLCELLS Special Condition VI.18 states:

*[...] The [AICS] destruction efficiencies shall be calculated following the procedures in Appendix 7. **Appendix 7 may be updated and applied by the permittee provided any changes have been submitted to and approved by the District Supervisor, AQD.** [...] [emphasis added]*

Test results for Durability Cycle B (summarized in Table 2.2 of the May 7, 2019 Test Report submitted to EGLE) report an outlet (controlled) CO emission factor of 0.16 lb/lb of fuel. A 6.2-L gasoline engine was tested in Test Cell 12.

The proposed change to Appendix 7 is as follows:

- No change to overall uncontrolled emission factor
- Reduce Durability Cycle B-specific destruction efficiency to 77%

The updated emissions information aligns with the test result, as follows:

$$0.693 \text{ lb/lb [No change; Table 1]} \times (1 - 77\%) \text{ [Updated; Table 2]} = 0.16 \text{ lb/lb [May 2019 test result]}$$

The updated emissions information will be used for CO calculations, as outlined in FG-ALLCELLS SC VI.18 and Appendix 7 of the ROP.



**RENEWABLE OPERATING PERMIT APPLICATION
C-001: CERTIFICATION**

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in civil and/or criminal penalties. Please type or print clearly.

This form is completed and included as part of Renewable Operating Permit (ROP) initial and renewal applications, notifications of change, amendments, modifications, and additional information.

Form Type C-001	SRN N6327
-----------------	-----------

Stationary Source Name Federal-Mogul Powertrain, LLC	
City Plymouth	County Wayne

SUBMITTAL CERTIFICATION INFORMATION	
1. Type of Submittal <i>Check only one box.</i>	
<input type="checkbox"/> Initial Application (Rule 210)	<input type="checkbox"/> Notification / Administrative Amendment / Modification (Rules 215/216)
<input checked="" type="checkbox"/> Renewal (Rule 210)	<input type="checkbox"/> Other, describe on AI-001
2. If this ROP has more than one Section, list the Section(s) that this Certification applies to _____	
3. Submittal Media <input checked="" type="checkbox"/> E-mail <input type="checkbox"/> FTP <input type="checkbox"/> Disk <input checked="" type="checkbox"/> Paper	
4. Operator's Additional Information ID - Create an Additional Information (AI) ID that is used to provide supplemental information on AI-001 regarding a submittal. AI Part C	

CONTACT INFORMATION	
Contact Name Keri Westbrooke	Title Director of Engineering and Technology
Phone number 734-254-8228	E-mail address keri.westbrooke@tenneco.com

This form must be signed and dated by a Responsible Official.				
Responsible Official Name Keri Westbrooke			Title Director of Engineering and Technology	
Mailing address 47001 Port Street				
City Plymouth	State MI	ZIP Code 48170	County Wayne	Country United States
As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this submittal are true, accurate and complete.				
 _____ Signature of Responsible Official			_____ 2/4/2020 Date	



RENEWABLE OPERATING PERMIT RENEWAL APPLICATION FORM

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Refer to instructions for additional information to complete the Renewable Operating Permit Renewal Application Form.

GENERAL INSTRUCTIONS

This application form should be submitted as part of an administratively complete application package for renewal of a Renewable Operating Permit (ROP). This application form consists of nine parts. Parts A – H must be completed for all applications and must also be completed for each section of a sectioned ROP. Answer all questions in all parts of the form unless directed otherwise. Detailed instructions for this application form can be found at <http://michigan.gov/air> (select the Permits Tab, “Renewable Operating Permits (ROP)/Title V”, then “ROP Forms & Templates”).

PART A: GENERAL INFORMATION

Enter information about the source, owner, contact person and the responsible official.

SOURCE INFORMATION

SRN N6327	SIC Code 8734	NAICS Code 541380	Existing ROP Number MI-ROP-N6327-2015	Section Number (if applicable)
Source Name Federal-Mogul Powertrain, LLC				
Street Address 47001 Port Street				
City Plymouth	State MI	ZIP Code 48170	County Wayne	
Section/Town/Range (if address not available)				
Source Description Federal-Mogul Powertrain, LLC tests engines and engine components in dynamometer cells. Federal-Mogul is permitted for 16 test cells. Fifteen cells are used for testing engines using gasoline, diesel, and E-85 fuels and one cell is for small engines.				
<input type="checkbox"/> Check here if any of the above information is different than what appears in the existing ROP. Identify any changes on the marked-up copy of your existing ROP.				

OWNER INFORMATION

Owner Name Federal-Mogul Powertrain, LLC	Section Number (if applicable)			
Mailing address (<input checked="" type="checkbox"/> check if same as source address) C/O Federal-Mogul Powertrain, LLC				
City	State	ZIP Code	County	Country

Check here if any information in this ROP renewal application is confidential. Confidential information should be identified on an Additional Information (AI-001) Form.

SRN: N6327	Section Number (if applicable):
------------	---------------------------------

PART A: GENERAL INFORMATION (continued)

At least one contact and responsible official must be identified. Additional contacts and responsible officials may be included if necessary.

CONTACT INFORMATION

Contact 1 Name Keri Westbrooke		Title Director of Engineering and Technology		
Company Name & Mailing address (<input checked="" type="checkbox"/> check if same as source address) Federal-Mogul Powertrain, LLC				
City	State	ZIP Code	County	Country
Phone number 734-254-8228		E-mail address keri.westbrooke@tenneco.com		

Contact 2 Name (optional) Brad Pritchett		Title EHS Coordinator		
Company Name & Mailing address (<input checked="" type="checkbox"/> check if same as source address) Federal-Mogul Powertrain, LLC				
City	State	ZIP Code	County	Country
Phone number 734-254-8970		E-mail address bradley.pritchett@tenneco.com		

RESPONSIBLE OFFICIAL INFORMATION

Responsible Official 1 Name Keri Westbrooke		Title Director of Engineering and Technology		
Company Name & Mailing address (<input checked="" type="checkbox"/> check if same as source address) Federal-Mogul Powertrain, LLC				
City	State	ZIP Code	County	Country
Phone number 734-254-8228		E-mail address keri.westbrooke@tenneco.com		

Responsible Official 2 Name (optional)		Title		
Company Name & Mailing address (<input type="checkbox"/> check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		

<input type="checkbox"/> Check here if an AI-001 Form is attached to provide more information for Part A. Enter AI-001 Form ID:

PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

Identify the items that are included as part of your administratively complete application in the checklist below. For your application to be complete, it must include information necessary to evaluate the source and to determine all applicable requirements. Answer the compliance statements as they pertain to all the applicable requirements to which the source is subject. The source's Responsible Official must sign and date this form.

Listing of ROP Application Contents. Check the box for the items included with your application.	
<input checked="" type="checkbox"/> Completed ROP Renewal Application Form (and any AI-001 Forms) (required)	<input type="checkbox"/> Compliance Plan/Schedule of Compliance
<input checked="" type="checkbox"/> Mark-up copy of existing ROP using official version from the AQD website (required)	<input type="checkbox"/> Stack information
<input type="checkbox"/> Copies of all Permit(s) to install (PTIs) that have not been incorporated into existing ROP (required)	<input type="checkbox"/> Acid Rain Permit Initial/Renewal Application
<input checked="" type="checkbox"/> Criteria Pollutant/Hazardous Air Pollutant (HAP) Potential to Emit Calculations	<input type="checkbox"/> Cross-State Air Pollution Rule (CSAPR) Information
<input type="checkbox"/> MAERS Forms (to report emissions not previously submitted)	<input type="checkbox"/> Confidential Information
<input type="checkbox"/> Copies of all Consent Order/Consent Judgments that have not been incorporated into existing ROP	<input checked="" type="checkbox"/> Paper copy of all documentation provided (required)
<input checked="" type="checkbox"/> Compliance Assurance Monitoring (CAM) Plan	<input checked="" type="checkbox"/> Electronic documents provided (optional)
<input type="checkbox"/> Other Plans (e.g., Malfunction Abatement, Fugitive Dust, Operation and Maintenance, etc.)	<input type="checkbox"/> Other, explain:

Compliance Statement

This source is in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. Yes No

This source will continue to be in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. Yes No

This source will meet in a timely manner applicable requirements that become effective during the permit term. Yes No

The method(s) used to determine compliance for each applicable requirement is/are the method(s) specified in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and all other applicable requirements not currently contained in the existing ROP.

If any of the above are checked No, identify the emission unit(s) or flexible group(s) affected and the specific condition number(s) or applicable requirement for which the source is or will be out of compliance at the time of issuance of the ROP renewal on an AI-001 Form. Provide a compliance plan and schedule of compliance on an AI-001 Form.

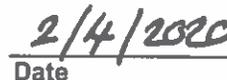
Name and Title of the Responsible Official (Print or Type)

Keri Westbrooke, Director of Engineering and Technology

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.



Signature of Responsible Official



Date

PART C: SOURCE REQUIREMENT INFORMATION

Answer the questions below for specific requirements or programs to which the source may be subject.

C1.	Actual emissions and associated data from all emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes , identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C2.	Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C3.	Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68) If Yes , a Risk Management Plan (RMP) and periodic updates must be submitted to the USEPA. Has an updated RMP been submitted to the USEPA?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C4.	Has this stationary source added or modified equipment since the last ROP renewal that changes the potential to emit (PTE) for criteria pollutant (CO, NO _x , PM ₁₀ , PM _{2.5} , SO ₂ , VOC, lead) emissions? If Yes , include potential emission calculations (or the PTI and/or ROP revision application numbers, or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. If No , criteria pollutant potential emission calculations do not need to be included.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C5.	Has this stationary source added or modified equipment since the last ROP renewal that changes the PTE for hazardous air pollutants (HAPs) regulated by Section 112 of the federal Clean Air Act? If Yes , include potential emission calculations (or the PTI and/or ROP revision application numbers or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. Fugitive emissions must be included in HAP emission calculations. If No , HAP potential emission calculations do not need to be included.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C6.	Are any emission units subject to the Cross-State Air Pollution Rule (CSAPR)? If Yes , identify the specific emission unit(s) subject to CSAPR on an AI-001 Form.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C7.	Are any emission units subject to the federal Acid Rain Program? If Yes , identify the specific emission unit(s) subject to the federal Acid Rain Program on an AI-001 Form. Is an Acid Rain Permit Renewal Application included with this application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C8.	Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)? If Yes , identify the specific emission unit(s) subject to CAM on an AI-001 Form. If a CAM plan has not been previously submitted to the MDEQ, one must be included with the ROP renewal application on an AI-001 Form. If the CAM Plan has been updated, include an updated copy. Is a CAM plan included with this application? If a CAM Plan is included, check the type of proposed monitoring included in the Plan: 1. Monitoring proposed by the source based on performance of the control device, or 2. Presumptively Acceptable Monitoring, if eligible	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <input type="checkbox"/>
C9.	Does the source have any plans such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement? If Yes , then a copy must be submitted as part of the ROP renewal application.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C10.	Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable? If Yes , then a description of the requirement and justification must be submitted as part of the ROP renewal application on an AI-001 Form.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/>	Check here if an AI-001 Form is attached to provide more information for Part C. Enter AI-001 Form ID: AI-Part C	

PART E: EXISTING ROP INFORMATION

Review all emission units and applicable requirements (including any source wide requirements) in the existing ROP and answer the questions below as they pertain to all emission units and all applicable requirements in the existing ROP.

<p>E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP? If <u>Yes</u>, identify changes and additions on Part F, Part G and/or Part H.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>E2. For each emission unit(s) identified in the existing ROP, <u>all</u> stacks with applicable requirements are to be reported in MAERS. Are there any stacks with applicable requirements for emission unit(s) identified in the existing ROP that were <u>not</u> reported in the most recent MAERS reporting year? If <u>Yes</u>, identify the stack(s) that was/were not reported on applicable MAERS form(s).</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>E3. Have any emission units identified in the existing ROP been modified or reconstructed that required a PTI? If <u>Yes</u>, complete Part F with the appropriate information.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>E4. Have any emission units identified in the existing ROP been dismantled? If <u>Yes</u>, identify the emission unit(s) and the dismantle date in the comment area below or on an AI-001 Form.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Comments:</p>	
<p><input type="checkbox"/> Check here if an AI-001 Form is attached to provide more information for Part E. Enter AI-001 Form ID: AI-</p>	

PART F: PERMIT TO INSTALL (PTI) INFORMATION

Review all emission units and applicable requirements at the source and answer the following questions as they pertain to **all** emission units with PTIs. Any PTI(s) identified below must be attached to the application.

F1. Has the source obtained any PTIs where the applicable requirements from the PTI have not been incorporated into the existing ROP? If Yes, complete the following table. Yes No
 If No, go to Part G.

Permit to Install Number	Emission Units/Flexible Group ID(s)	Description (Include Process Equipment, Control Devices and Monitoring Devices)	Date Emission Unit was Installed/ Modified/ Reconstructed

F2. Do any of the PTIs listed above change, add, or delete terms/conditions to **established emission units** in the existing ROP? If Yes, identify the emission unit(s) or flexible group(s) affected in the comments area below or on an AI-001 Form and identify all changes, additions, and deletions in a mark-up of the existing ROP. Yes No

F3. Do any of the PTIs listed above identify **new emission units** that need to be incorporated into the ROP? If Yes, submit the PTIs as part of the ROP renewal application on an AI-001 Form, and include the new emission unit(s) or flexible group(s) in the mark-up of the existing ROP. Yes No

F4. Are there any stacks with applicable requirements for emission unit(s) identified in the PTIs listed above that were not reported in MAERS for the most recent emissions reporting year? If Yes, identify the stack(s) that were not reported on the applicable MAERS form(s). Yes No

F5. Are there any proposed administrative changes to any of the emission unit names, descriptions or control devices in the PTIs listed above for any emission units not already incorporated into the ROP? If Yes, describe the changes on an AI-001 Form. Yes No

Comments:

Check here if an AI-001 Form is attached to provide more information for Part F. Enter AI-001 Form ID: **AI-**

PART G: EMISSION UNITS MEETING THE CRITERIA OF RULES 281(2)(h), 285(2)(r)(iv), 287(2)(c), OR 290

Review all emission units and applicable requirements at the source and answer the following questions.

G1. Does the source have any new and/or existing emission units which do not already appear in the existing ROP and which meet the criteria of Rules 281(2)(h), 285(2)(r)(iv), 287(2)(c), or 290.

If Yes, identify the emission units in the table below. If No, go to Part H. Yes No

Note: If several emission units were installed under the same rule above, provide a description of each and an installation/modification/reconstruction date for each.

Origin of Applicable Requirements	Emission Unit Description – <i>Provide Emission Unit ID and a description of Process Equipment, Control Devices and Monitoring Devices</i>	Date Emission Unit was Installed/ Modified/ Reconstructed
<input checked="" type="checkbox"/> Rule 281(2)(h) or 285(2)(r)(iv) cleaning operation	FG-COLDCLEANERS -- Three (3) parts washers, each with an air/vapor interface of less than 10 square feet	2016
<input type="checkbox"/> Rule 287(2)(c) surface coating line		
<input checked="" type="checkbox"/> Rule 290 process with limited emissions	EU-SHAFTSEALSYS -- A multi-component Shaft Sealing System consisting of sealing shaft test units, electric ovens, laboratory hoods, molding and hydraulic presses, and a screen printer.	2016

Comments:

Specifications of parts washers are included in attached Appendix E.

Check here if an AI-001 Form is attached to provide more information for Part G. Enter AI-001 Form ID: **AI-**

PART H: REQUIREMENTS FOR ADDITION OR CHANGE

Complete this part of the application form for all proposed additions, changes or deletions to the existing ROP. This includes state or federal regulations that the source is subject to and that must be incorporated into the ROP or other proposed changes to the existing ROP. **Do not include additions or changes that have already been identified in Parts F or G of this application form.** If additional space is needed copy and complete an additional Part H.

Complete a separate Part H for each emission unit with proposed additions and/or changes.

H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If <u>Yes</u> , answer the questions below.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If <u>Yes</u> , describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If <u>Yes</u> , identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
H4. Does the source propose to add new state or federal regulations to the existing ROP? If <u>Yes</u> , on an AI-001 Form, identify each emission unit/flexible group that the new regulation applies to and identify <u>each</u> state or federal regulation that should be added. Also, describe the new requirements in questions H8 – H16 below and add the specific requirements to existing emission units/flexible groups in the mark-up of the ROP, create a new Emission Unit/Flexible Group Table, or add an AQD template table for the specific state or federal requirement.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
H5. Has a Consent Order/Consent Judgment (CO/CJ) been issued where the requirements were not incorporated into the existing ROP? If <u>Yes</u> , list the CO/CJ number(s) below and add or change the conditions and underlying applicable requirements in the appropriate Emission Unit/Flexible Group Tables in the mark-up of the ROP.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
H6. Does the source propose to add, change and/or delete source-wide requirements? If <u>Yes</u> , identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
H7. Are you proposing to streamline any requirements? If <u>Yes</u> , identify the streamlined and subsumed requirements and the EU ID, and provide a justification for streamlining the applicable requirement below.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

<p>H8. Does the source propose to add, change and/or delete emission limit requirements? If <u>Yes</u>, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>H9. Does the source propose to add, change and/or delete material limit requirements? If <u>Yes</u>, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>H10. Does the source propose to add, change and/or delete process/operational restriction requirements? If <u>Yes</u>, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>H11. Does the source propose to add, change and/or delete design/equipment parameter requirements? If <u>Yes</u>, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.</p> <p>We are proposing an additional requirement limiting each tested engine in FG-ALLCELLS to no greater than 600 horsepower.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>H12. Does the source propose to add, change and/or delete testing/sampling requirements? If <u>Yes</u>, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.</p> <p>We are proposing to change the length of time for submitting test plans from 60 days to 30 days prior to the test, in accordance with R 336.2001(3).</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>H13. Does the source propose to add, change and/or delete monitoring/recordkeeping requirements? If <u>Yes</u>, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.</p> <p>The overall annual average CO destruction efficiency listed in FG-ALLCELLS SC VI.18 is proposed to be changed from 77% to 57%, to be consistent with Table 2 to Appendix 7 of the ROP. We are also proposing a condition to maintain records on horsepower of each tested engine in FG-ALLCELLS.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>H14. Does the source propose to add, change and/or delete reporting requirements? If <u>Yes</u>, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H15. Does the source propose to add, change and/or delete **stack/vent restrictions**? If Yes, identify Yes No the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.

A dividing wall and a stack were added to EU-TESTCELL13. The two stacks of Cell 13, each with a 4-inch diameter and a height of 32 feet, were placed on either side of the dividing wall to allow for safer working conditions for technicians. The stack parameters meet ROP diameter and height requirements. There were not changes to the process, operation, or potential emissions. The Operational Flexibility Change Notification was submitted to EGLE and is in Appendix F.

H16. Does the source propose to add, change and/or delete any **other** requirements? If Yes, identify Yes No the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.

A correction is proposed to the 3.0L NOx emission factor in Appendix 7 of the ROP. The factor was incorrectly converted from pounds/gallon to pounds/pounds of fuel in the 2003 ROP Renewal Application. The copy of ROP No. MI-ROP-N6327-2003 with the identified correction can be found in Appendix G of this application. We are also requesting approval to update the destruction efficiency factor for CO, Durability Cycle B, based on May 7, 2019 stack test results.

H17. Does the source propose to add terms and conditions for an alternative operating scenario or intra-facility trading of emissions? If Yes, identify the proposed conditions in a mark-up of the corresponding section of the ROP and provide a justification below. Yes No

Check here if an AI-001 Form is attached to provide more information for Part H. Enter AI-001 Form ID: **AI-**



RENEWABLE OPERATING PERMIT APPLICATION

AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

SRN: N6327

Section Number (if applicable):

1. Additional Information ID

AI-Part C

Additional Information

2. Is This Information Confidential?

Yes No

C4, C5:

The Potential to Emit calculations for criteria pollutants and HAPs for the space heaters, shaft sealing test system, parts washers, and valve test burners can be found in Appendix B.

C8, C9:

The CAM Plan is enclosed in Appendix C.

APPENDIX



// Test Cell Layout Diagram

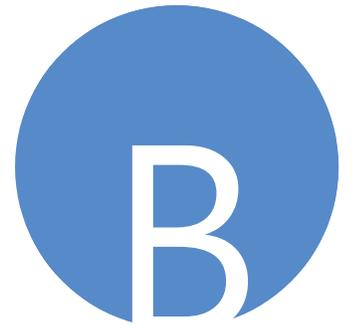
Engine Dynamometer Test Facility

Cell 16		Cell 12
Cell 15		Cell 11
Cell 14		Cell 10
Cell 13		Cell 9

All Cells = Multiple Fuel Capability

Cell 8		Cell 4
Cell 7		Cell 3
Cell 6		Cell 2
Cell 5		Cell 1

APPENDIX



// Potential to Emit Calculations



Federal-Mogul Powertrain, LLC
Potential Criteria Pollutant Emissions

Table 1. Space Heaters Potential Criteria Pollutant Emissions

Specifications					
Aggregate Hourly Heat Input (MMBtu/hr)	9.22				
Maximum Operation (hr/yr)	8,760				
Natural Gas Heating Value (Btu/scf)	1,020				
Criteria Pollutants	Emission Factor	Emission Factor Units	Emission Factor Basis	Hourly Emissions (lb/hr)¹	Annual Emissions (tpy)²
NO _x	100	lb/MMscf	AP-42 Ch.1.4, Table 1.4-1	0.90	3.96
CO	84	lb/MMscf	AP-42 Ch.1.4, Table 1.4-1	0.76	3.33
PM, filterable	1.9	lb/MMscf	AP-42 Ch.1.4, Table 1.4-2	0.02	0.08
PM ₁₀ , filterable and condensable	7.6	lb/MMscf	AP-42 Ch.1.4, Table 1.4-2	0.07	0.30
PM _{2.5} , filterable and condensable	7.6	lb/MMscf	AP-42 Ch.1.4, Table 1.4-2	0.07	0.30
SO ₂	0.6	lb/MMscf	AP-42 Ch.1.4, Table 1.4-2	0.01	0.02
Pb	0.0005	lb/MMscf	AP-42 Ch.1.4, Table 1.4-2	0.00	0.00
VOC	5.5	lb/MMscf	AP-42 Ch. 1.4, Table 1.4-2	0.05	0.22

¹ Hourly emissions are based on the aggregate of the maximum heat input capacities of the space heaters.

² Annual emissions are based on continuous operation at 8,760 hours/year.



**Federal-Mogul Powertrain, LLC
HAP Emission Estimates**

Table 2. Space Heaters Potential HAP Emission Estimates

Hazardous Air Pollutants	CAS	Emission Factor	Potential Emission Rates	
		External Combustion Sources AP-42 Ch. 1.4, Table 1.4-3 and Table 1.4-4 (lb/MMscf)	Hourly	Annual
			(lb/hr) ¹	(tpy) ²
Arsenic	7440382	2.0E-04	1.8E-06	7.9E-06
Benzene	71432	2.1E-03	1.9E-05	8.3E-05
Beryllium	7440417	1.2E-05	1.1E-07	4.8E-07
Cadmium	7440439	1.1E-03	9.9E-06	4.4E-05
Chromium	7440473	1.4E-03	1.3E-05	5.5E-05
Cobalt	7440484	8.4E-05	7.6E-07	3.3E-06
Dichlorobenzene	253212266	1.2E-03	1.1E-05	4.8E-05
Formaldehyde	50000	7.5E-02	6.8E-04	3.0E-03
n-hexane	110543	1.8E+00	1.6E-02	7.13E-02
Manganese	7439965	3.8E-04	3.4E-06	1.5E-05
Mercury	7439976	2.6E-04	2.4E-06	1.0E-05
Nickel	7440020	2.1E-03	1.9E-05	8.3E-05
Selenium	7782492	2.4E-05	2.2E-07	9.5E-07
Toluene	108883	3.4E-03	3.1E-05	1.3E-04
Polycyclic Organic Matter (POMs)				
2-Methylnaphthalene	91576	2.4E-05	2.2E-07	9.5E-07
3-Methylcholanthrene	56495	1.8E-06	1.6E-08	7.1E-08
7,12-Dimethylbenz(a)anthracene	57976	1.6E-05	1.4E-07	6.3E-07
Acenaphthene	83329	1.8E-06	1.6E-08	7.1E-08
Acenaphthylene	208968	1.8E-06	1.6E-08	7.1E-08
Anthracene	120127	2.4E-06	2.2E-08	9.5E-08
Benz(a)anthracene	56553	1.8E-06	1.6E-08	7.1E-08
Benzo(a)pyrene	50328	1.2E-06	1.1E-08	4.8E-08
Benzo(b)fluoranthene	205992	1.8E-06	1.6E-08	7.1E-08
Benzo(g,h,i)perylene	191242	1.2E-06	1.1E-08	4.8E-08
Benzo(k)fluoranthene	207089	1.8E-06	1.6E-08	7.1E-08
Chrysene	218019	1.8E-06	1.6E-08	7.1E-08
Dibenz(a,h)anthracene	53703	1.2E-06	1.1E-08	4.8E-08
Fluoranthene	206440	3.0E-06	2.7E-08	1.2E-07
Fluorene	86737	2.8E-06	2.5E-08	1.1E-07
Indeno(1,2,3,c,d)pyrene	193395	1.8E-06	1.6E-08	7.1E-08
Naphthalene	91203	6.1E-04	5.5E-06	2.4E-05
Phenanthrene	85018	1.7E-05	1.5E-07	6.7E-07
Pyrene	129000	5.0E-06	4.5E-08	2.0E-07
Maximum Individual HAP (n-Hexane)				0.07
Aggregate HAPs				0.07

¹ Hourly emission rates are based on the aggregate of the maximum heat input capacities of the space heaters.

² Annual emissions are based on continuous operation at 8,760 hours/year.



Federal-Mogul Powertrain, LLC
Potential to Emit Calculations

Table 3. Shaft Seal Testers Potential to Emit

Maximum Operational Hours (hrs/yr)	Monthly Emissions (lb/month)	Annual VOC Emissions (tpy)	Hourly VOC Emissions (lb/hr)
8,760	1000	6.0	1.4

Table 4. Parts Washers Potential to Emit

Parts Washer	Maximum Operational Hours (hrs/yr)	Size (ft ²)	Emission Factor (lb/hr/ft ²)	Hourly VOC Emissions (lb/hr)	Annual VOC Emissions (tpy)
1	8,760	8.5	0.08	0.01	3.0
2	8,760	8.5	0.08	0.01	3.0
3	8,760	5.3	0.08	0.02	1.9
Total Emissions				0.03	7.8



Federal-Mogul Powertrain, LLC
Emissions Estimates

Table 5. Federal Mogul Valve Durability Test Rig - Potential Emissions

Natural Gas Burner Specifications					
Maximum Heat Input per Burner	0.2	MMBtu/hr			
Aggregate Maximum Heat Input (12 Burners)	2.4	MMBtu/hr			
Maximum Operation	8,760	hrs/yr			
Natural Gas Heating Value	1,020	Btu/scf			
Criteria Pollutants	Emission Factor (lb/MMscf)	Emission Factor Basis	Annual Emissions per Burner (tpy) ¹	Total Annual Emissions (12 Burners) (tpy) ¹	
NO _x	100	AP-42 Ch.1.4, Table 1.4-1	8.59E-02	1.0	
CO	84		7.21E-02	0.9	
PM, filterable	1.9	AP-42 Ch.1.4, Table 1.4-2	1.63E-03	0.02	
PM ₁₀ , filterable & condensable	7.6		6.53E-03	0.08	
PM _{2.5} , filterable & condensable	7.6		6.53E-03	0.08	
SO ₂	0.6		5.15E-04	0.01	
VOC	5.5		4.72E-03	0.06	
Lead	0.0005		4.29E-07	5.2E-06	
HAP Emission Estimates					
Hazardous Air Pollutants	CAS	Emission Factor (lb/MMscf)	Emission Factor Basis	Annual Emissions per Burner (tpy) ¹	Total Annual Emissions (12 Burners) (tpy) ²
Arsenic	7440382	2.0E-04	AP-42 Ch.1.4, Table 1.4-4	1.7E-07	2.1E-06
Benzene	71432	2.1E-03	AP-42 Ch.1.4, Table 1.4-3	1.8E-06	2.2E-05
Beryllium	7440417	1.2E-05	AP-42 Ch.1.4, Table 1.4-4	1.0E-08	1.2E-07
Cadmium	7440439	1.1E-03		9.4E-07	1.1E-05
Chromium, total	7440473	1.4E-03		1.2E-06	1.4E-05
Cobalt	7440484	8.4E-05		7.2E-08	8.7E-07
Dichlorobenzene	106467	1.2E-03	AP-42 Ch.1.4, Table 1.4-3	1.0E-06	1.2E-05
Formaldehyde	50000	7.5E-02	AP-42 Ch.1.4, Table 1.4-4	6.4E-05	7.7E-04
Hexane	110543	1.8E+00		1.5E-03	1.9E-02
Manganese	7439965	3.8E-04		3.3E-07	3.9E-06
Mercury	7439976	2.6E-04		2.2E-07	2.7E-06
Nickel	7440020	2.1E-03		1.8E-06	2.2E-05
Selenium	7782492	2.4E-05		2.1E-08	2.5E-07
Toluene	108883	3.4E-03	AP-42 Ch.1.4, Table 1.4-3	2.9E-06	3.5E-05
Polycyclic Organic Matter (POMs)					
2-Methylnaphthalene	91576	2.4E-05	AP-42 Ch.1.4, Table 1.4-3	2.1E-08	2.5E-07
3-Methylcholanthrene	56495	1.8E-06		1.5E-09	1.9E-08
7,12-Dimethylbenz(a)anthracene	57976	1.6E-05		1.4E-08	1.6E-07
Acenaphthene	83329	1.8E-06		1.5E-09	1.9E-08
Acenaphthylene	208968	1.8E-06		1.5E-09	1.9E-08
Anthracene	120127	2.4E-06		2.1E-09	2.5E-08
Benzo(a)anthracene	56553	1.8E-06		1.5E-09	1.9E-08
Benzo(a)pyrene	50328	1.2E-06		1.0E-09	1.2E-08
Benzo(b)fluoranthene	205992	1.8E-06		1.5E-09	1.9E-08
Benzo(g,h,i)perylene	191242	1.2E-06		1.0E-09	1.2E-08
Benzo(k)fluoranthene	207089	1.8E-06		1.5E-09	1.9E-08
Chrysene	218019	1.8E-06		1.5E-09	1.9E-08
Dibenz(a,h)anthracene	53703	1.2E-06		1.0E-09	1.2E-08
Fluoranthene	206440	3.0E-06		2.6E-09	3.1E-08
Fluorene	86737	2.8E-06		2.4E-09	2.9E-08
Indeno(1,2,3,c,d)pyrene	193395	1.8E-06		1.5E-09	1.9E-08
Naphthalene	91203	6.1E-04		5.2E-07	6.3E-06
Phenanthrene	85018	1.7E-05		1.5E-08	1.8E-07
Pyrene	129000	5.0E-06		4.3E-09	5.2E-08
Maximum Single HAP					
Aggregate HAPs					1.9E-02

¹ Annual emission rates are based on 8,760 hours/year of operation.

APPENDIX



// Compliance Assurance Monitoring
Plan

**Compliance Assurance Monitoring (CAM) Plan
Federal Mogul Powertrain, LLC
FG-ALLCELLS**

I. BACKGROUND

A. Emission Units

Identification: FG-ALLCELLS

Description: Sixteen dynamometer test cells using diesel, E-85, and gasoline fuel. Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. An air injection control system (AICS) is used for most gasoline engine test cells to control CO and VOC emissions.

Facility: Federal-Mogul Powertrain, LLC
47001 Port Street, Plymouth
Wayne County, Michigan

B. Emission Limits

FG-ALLCELLS Emission Limits:

Pollutant	Limit	Time Period
VOC	5.6 tons per year	12-month rolling period
CO¹	223.3 tons per year	12-month rolling period
NO _x	62.1 tons per year	12-month rolling period

¹ CO at FG-ALLCELLS is subject to CAM requirements

C. Control Technology

An air injection control system (AICS) is used with durability and deep thermal shock (DTS) testing for most gasoline engine test cells to control CO and VOC emissions. DTS is not used with diesel engines, small engines, or during Developmental testing.

D. CAM Applicability Evaluation

FG-ALLCELLS are subject to CAM because the pre-control device potential emissions of CO are greater than 100 tons per year for the test cells, which makes this units subject to the CAM requirements. However, the pre-control device potential VOC emissions from the units are less than 100 tpy.

II. MONITORING APPROACH

AICS is used with durability and DTS testing. Proper operation of the AICS includes monitoring the cycle average exhaust temperature upstream of the air injection point and downstream of the air injection point, as well as the air injection rate. The CAM approach is summarized below.

AICS Control Monitoring Parameters:	Exhaust Temperature	Air Injection Rate
A. Indicator	Cycle Average Exhaust Temperature	Cycle Average Air Injection Rate
B. Indicator Range	Must be at least 1300°F at the inlet and outlet locations	Minimum average air injection rate: Durability Cycle A: 45 scfm Durability Cycle B: 50 scfm Durability Cycle C: 72 scfm Durability Cycle D: 50 scfm Deep Thermal Shock: 45 scfm
C. Excursion Indicator	Running less than 1300°F for more than 30 minutes	Running less than minimum average air injection rate for more than 20 seconds

In the event the test engine is not able to achieve minimum inlet or outlet temperatures, or air flow rate, the test is halted. The operator inspects the set-up for errors and restarts the test. If minimum AICS transducer values are still not realized, then the engine will run according to customer requirements, but the AICS system will run in Developmental mode.

III. PERFORMANCE CRITERIA

The performance criteria assure that the data generated by the monitoring approach provide valid and sufficient information on the actual conditions being monitored.

Performance Criteria	
A. Data Representativeness	Exhaust temperature and air injection rate are critical parameters to monitor AICS performance
B. Verification of Operational Status	The permittee maintains and operates the Automatic Data Acquisition System (DAS) to monitor and record the exhaust temperature (°F) and air injection rate (scfm) when the AICS is operating
C. QA/QC Practices and Criteria	Routine calibrations are performed in accordance with internal procedures
D. Monitoring Frequency	Monitored continuously
E. Data Collection Procedure	DAS monitors and records air injection rate and the exhaust gas temperature upstream and downstream the AICS, while the AICS is operating
F. Averaging Period	Exhaust temperature: 30 minutes Air injection rate: 20 seconds

III. JUSTIFICATION

The Monitoring Approach was determined from Federal-Mogul regarding proper compliance assurance monitoring of the AICS. The average exhaust temperature upstream and downstream of the injection point, and the air injection rate, are critical parameters necessary to measure AICS performance. The normal operating ranges provide the compliance assurance required.

Operating the system while maintaining temperature at or above 1,300°F for more than 30 minutes ensures that the average cycle exhaust temperature will meet the minimum requirement. The same case applies for the air injection rate which requires remedial action to be taken if a specific test-defined minimum average cycle air injection rate is not reached within 20 seconds. Furthermore, Federal-Mogul will shut down the system in a case of excursion to perform diagnostics.

Federal-Mogul has demonstrated that sufficient monitoring is performed to satisfy the requirement pursuant to the CAM regulations listed in 40 CFR Part 64.

APPENDIX



// Space Heater Inventory

RTU #	Model #	Heating		Cooling
		input	output	
7-16-19-21 22-24-25-27	48TJ0008-C11AA	125,000	100,000	7.5 ton
10	48TJIDOK	230,000	186,300	15 ton
1-2-6	48TJE004-611AA	74,000	59,200	3 ton
3-5-9-18	48TJID005-CDAA	74,000	59,200	4 ton
12-14	4855-0180402AA	40,000	32,400	1.5 ton
4-5-13-23	48TJE006-601AA	115,000	92,000	5 ton
17-26	48TJE007-611	115,000	92,000	6 ton
15	48TJID009-011AA	125,000	100,000	7.5 ton
Computer Room	38HDC048231			4 ton

Total
25 HVAC units
1 Split System

		Heating		
		input	output	
32		130,000	108,000	
28		224,000	184,000	
29		180,000	148,000	

ADDED

PACKAGED ROOFTOP AIR CONDITIONING UNIT W/ DX COOLING-GAS HEAT SCHEDULE (RTU)

MARK	LOCATION SERVICE	TYPE	MIN OA CFM	SUPPLY FAN					DX COOLING COIL										COMPRESSOR			CONDENSER FAN			GAS HEATER				OPER WT LBS
				CFM	ESP	RPm	HP	TOT MBH	SENS MBH	AMB AIR	EAT DB	EAT WB	EER	NO	TYPE	NO	HP	MBH IN	MBH OUT	EAT	LAT	CONN							
RTU-41	ROOF BREAK AREA	DOWNFLOW	960	5000	1.5	828	5	188.0	136.3	90/73	80	67	11.0	2	SCROLL	2	1	350	284	57.7	105.5	3/4"	2215						
RTU-42A	ROOF MAIN CONF	DOWNFLOW	200	1600	1.0	1011	1	50.0	39.5	90/73	80	67	12.0	1	SCROLL	1	0.33	120	98.4	61.3	118.3	1/2"	600						
RTU-42B	ROOF MAIN CONF	DOWNFLOW	200	1600	1.0	1011	1	50.0	39.5	90/73	80	67	12.0	1	SCROLL	1	0.33	120	98.4	61.3	118.3	1/2"	600						
RTU-43	ROOF DISPLAY	DOWNFLOW	500	3000	1.25	939	3	96.6	72.4	90/73	80	67	11.2	2	SCROLL	1	0.75	200	160	58.3	107.7	3/4"	1200						
RTU-44	ROOF RR/CONF/TECH	DOWNFLOW	900	4000	1.25	1535	3.6	122.4	94.6	90/73	80	67	11.3	2	SCROLL	1	0.75	250	200	54.2	100.5	3/4"	1200						
RTU-45	ROOF TESTING LAB	DOWNFLOW	1000	20000	1.5	1066	25	604.5	481.5	90/73	80	67	10.3	4	SCROLL	6	1.0	850	680	66.5	98.0	1 1/4"	10600						
RTU-46	ROOF TESTING LAB	DOWNFLOW	1000	20000	1.5	1066	25	604.5	481.5	90/73	80	67	10.3	4	SCROLL	6	1.0	850	680	66.5	98.0	1 1/4"	10600						
RTU-47	ROOF OPEN OFFICES	DOWNFLOW	360	3000	1.25	939	3	96.6	72.4	90/73	80	67	11.2	2	SCROLL	1	0.75	200	160	61.6	110	3/4"	800						
RTU-48	ROOF METROLOGY	DOWNFLOW	1000	4000	1.25	1535	3.6	122.4	94.6	90/73	80	67	11.3	2	SCROLL	1	0.75	250	200	52.5	98.8	3/4"	1200						
RTU-49	ROOF STORAGE	DOWNFLOW	1300	4000	1.25	1535	3.6	122.4	94.6	90/73	80	67	11.3	2	SCROLL	1	0.75	250	200	47.3	93.6	3/4"	1200						
RTU-50	ROOF ELASTOMER MIXING / TESTING	DOWNFLOW	1250	5000	1.25	886	3	155	117.7	90/73	80	67	11.0	2	SCROLL	2	0.5	250	200	52.5	90.0	1/2"	1800						
RTU-51	ROOF ELAST. MOLD	DOWNFLOW	640	4700	1.7	1156	3	251.3	114.6	86.5/76.9	78.9	72.3	12	2	SCROLL	2	0.75	405	328.1	20.7	85.3	1" (EST)	2800						
RTU-52	ROOF COATINGS	DOWNFLOW	770	2830	1.7	1563	2	158.9	72.7	86.5/76.9	81.7	74.1	11.5	2	SCROLL	2	0.75	292.5	234	13.7	90.2	3/4" (EST)	1900						
RTU-53	ROOF OVEN ROOM	DOWNFLOW	1110	4095	1.2	975	2	N/A	N/A	N/A	N/A	N/A	N/A	2	SCROLL	2	0.75	292.5	234	13.7	90.2	3/4" (EST)	1900						
RTU-61	ROOF 2ND FL NORTH	DOWNFLOW	500	5000	1.5	926	3	155.0	117.7	90/73	80	67	11.0	2	SCROLL	2	1/2	250	203	63.0	100.6	1/2"	1800						
RTU-62	ROOF 2ND FL WEST	DOWNFLOW	500	5000	1.25	886	3	155.0	117.7	90/73	80	67	11.0	2	SCROLL	2	1/2	250	203	63.0	100.6	1/2"	1800						
RTU-63	ROOF 2ND FL SOUTH	DOWNFLOW	500	5000	1.25	886	3	155.0	117.7	90/73	80	67	11.0	2	SCROLL	2	1/2	250	203	63.0	100.6	1/2"	1800						
RTU-64	ROOF 2ND FL EAST	DOWNFLOW	500	5000	1.25	886	3	155.0	117.7	90/73	80	67	11.0	2	SCROLL	2	1/2	250	203	63.0	100.6	1/2"	1800						
RTU-65	ROOF 2ND CENTRAL	DOWNFLOW	500	5000	1.25	886	3	155.0	117.7	90/73	80	67	11.0	2	SCROLL	2	1/2	250	203	63.0	100.6	1/2"	1800						

GENERAL NOTES:

- I. ALL UNITS SHALL BE PROVIDED WITH COMMUNICATIONS (BACNET (MS/TP OR IP) OR LON TALK) TO INTERFACE WITH BUILDING AUTOMATION SYSTEM (BAS).
 - II. ALL UNITS TO BE PROVIDED WITH 1 YEAR SERVICE WARRANTY AND 5 YEAR COMPRESSOR PARTS WARRANTY.
 - III. ALL UNITS NOTED TO BE PROVIDED WITH GF CONVENIENCE OUTLET WITH A WFAATHER.DRPOCE
 - IV. ALL UNITS DRPOCE
- OPTIONS:**
- A. 2" PLEATED FILTERS (MERV 8)
 - B. MEDIUM EFFICIENCY FILTERS
 - C. 14" MINI INS II ATEN
 - K. HIGH EFFICIENCY MOTOR
 - L. OVERSIZED MOTOR / HIGH STATIC DRIVE REQUIRED TO MEET "ESP" PLUS MIN. 10%

APPENDIX



// Parts Washers Specifications

COLD PARTS WASHER

Safety Kleen Model 81

S/N 00001178SK15911502

Safety Kleen Premium Solvent

Maximum Capacity = 80 gallons

Air / Vapor interface = 45" x 27"

Air / Vapor interface = 8.5 ft²

Date in service = 2/1/2016

COLD PARTS WASHER

Safety Kleen Model 81

S/N 00001178SK15911519

Safety Kleen Premium Solvent

Maximum Capacity = 80 gallons

Air / Vapor interface = 45" x 27"

Air / Vapor interface = 8.5 ft²

Date in service = 2/1/2016

COLD PARTS WASHER

Safety Kleen Model 30

S/N 00001140SK15905733

Safety Kleen Premium Solvent

Maximum Capacity = 15 gallons

Air / Vapor interface = 34" x 22.5"

Air / Vapor interface = 5.3 ft²

Date in service = 2/1/2016

APPENDIX



// Operational Flexibility Change to Test
Cell 13



June 15, 2018

Ms. Nazaret Sandoval
MDEQ – Air Quality Division
Detroit District Office
Cadillac Place, Suite 2-300
Detroit, MI 48202

**RE: Operational Flexibility Change to ROP MI-ROP-N6327-2015
Federal-Mogul Corporation**

Dear Ms. Sandoval,

Federal-Mogul Corporation operates sixteen (16) dynamometer test cells using diesel, E-85, and gasoline fuel in accordance with renewable operating permit (ROP) No. MI-ROP-N6327-2015 at the Plymouth Technical Center Powertrain, located at 47001 Port Street in Plymouth, MI.

Test Cell 13 (identified as EU-TESTCELL13) is designated for testing small engines, and multiple small engines can be tested at one time. In March, 2016, a dividing wall was added to Test Cell 13 (EU-TESTCELL13) to allow safer working conditions for technicians performing mechanical work on one engine while the other engine is running. Further, two (2) stacks with diameter of 4 inches and height of 32 feet were installed, replacing one (1) stack with diameter of 6 inches and height of 32 feet, to eliminate pressure pulses from one engine affecting the other engine. There was no change in the discharge location of Test Cell 13; the two (2) newly installed flues exhaust in parallel at the location of the previous single stack. EU-TESTCELL13 conditions are listed under FG-ALLCELLS of ROP No. MI-ROP-N6327-2015. The parameters of the two (2) stacks remain compliant with the ROP, and there was no change in test cell operation or potential emissions.

This ROP notification is submitted for an operational flexibility change pursuant to R 336.1215(1)(a) for EU-TESTCELL13 operating in accordance with ROP No. MI-ROP-N6327-2015. We anticipate that additional descriptive language and stack changes will be incorporated into ROP No. MI-ROP-N6327-2015 upon our next ROP renewal. The M-001 and C-001 forms are enclosed.

Should you have questions regarding this notification, please contact me at (734) 254-8291 or Ms. Rhiana Dornbos of NTH Consultants, Ltd. at (616) 265-5755.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Walter', written over a light blue horizontal line.

Terrance Walter
Technical Services Manager

cc: USEPA – Region V
Mr. Jeff Korniski, MDEQ – AQD
Ms. Rhiana Dornbos, NTH Consultants, Ltd.

Federal-Mogul Powertrain • Technical Center
47001 Port Street • Plymouth, Michigan 48170
Tel. (734) 254-0100 • Fax (734) 254-8901



Michigan Department Of Environmental Quality - Air Quality Division

RENEWABLE OPERATING PERMIT APPLICATION C-001: CERTIFICATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in civil and/or criminal penalties. Please type or print clearly.

This form is completed and included as part of Renewable Operating Permit (ROP) initial and renewal applications, notifications of change, amendments, modifications, and additional information.

Form Type C-001	SRN N6327
-----------------	-----------

Stationary Source Name Federal-Mogul Powertrain	
City Plymouth	County Wayne

SUBMITTAL CERTIFICATION INFORMATION	
1. Type of Submittal <i>Check only one box.</i>	
<input type="checkbox"/> Initial Application (Rule 210)	<input checked="" type="checkbox"/> Notification / Administrative Amendment / Modification (Rules 215/216)
<input type="checkbox"/> Renewal (Rule 210)	<input type="checkbox"/> Other, describe on AI-001
2. If this ROP has more than one Section, list the Section(s) that this Certification applies to _____	
3. Submittal Media <input checked="" type="checkbox"/> E-mail <input type="checkbox"/> FTP <input type="checkbox"/> Disk <input checked="" type="checkbox"/> Paper	
4. Operator's Additional Information ID - Create an Additional Information (AI) ID that is used to provide supplemental information on AI-001 regarding a submittal.	
AI	

CONTACT INFORMATION	
Contact Name Terrance Walter	Title Technical Services Manager
Phone number 734-254-8291	E-mail address terry.walter@federalmogul.com

This form must be signed and dated by a Responsible Official.				
Responsible Official Name Terrance Walter		Title Technical Services Manager		
Mailing address 47001 Port Street				
City Plymouth	State MI	ZIP Code 48170	County Wayne	Country United States
As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this submittal are true, accurate and complete.				
 Signature of Responsible Official			6-18-18 Date	



RENEWABLE OPERATING PERMIT M-001: RULE 215 CHANGE NOTIFICATION RULE 216 AMENDMENT/MODIFICATION APPLICATION

This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment.

1. SRN N6327	2. ROP Number MI-ROP-N6327-2015	3. County Wayne
4. Stationary Source Name Federal-Mogul Powertrain		
5. Location Address 47001 Port Street		6. City Plymouth
<p>7. Submittal Type - <i>The submittal must meet the criteria for the box checked below. Check only one box. Attach a mark-up of the affected ROP pages for applications for Rule 216 changes.</i></p> <p><input checked="" type="checkbox"/> Rule 215(1) Notification of change. Complete Items 7 – 10.</p> <p><input type="checkbox"/> Rule 215(2) Notification of change. Complete Items 7 – 10.</p> <p><input type="checkbox"/> Rule 215(3) Notification of change. Complete Items 7 – 11.</p> <p><input type="checkbox"/> Rule 216(1)(a)(i)-(iv) Administrative Amendment. Complete Items 7 – 10.</p> <p><input type="checkbox"/> Rule 216(1)(a)(v) Administrative Amendment. Complete Items 7 – 13. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.</p> <p><input type="checkbox"/> Rule 216(2) Minor Modification. Complete Items 7 – 12.</p> <p><input type="checkbox"/> Rule 216(3) Significant Modification. Complete Items 7 – 12 and provide any additional information needed on ROP application forms. See detailed instructions.</p> <p><input type="checkbox"/> Rule 216(4) State-Only Modification. Complete Items 7 – 12.</p>		
8. Effective date of the change. (MM/DD/YYYY) <i>See detailed instructions.</i> 03/01/2016		9. Change in emissions? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>10. Description of Change - <i>Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).</i></p> <p>Installation of one dividing wall within Test Cell 13 (EU-TESTCELL13) and a change to Test Cell 13 stack from one stack with maximum diameter of 6 inches and minimum stack height of 32 feet to two stacks each of diameter 4 inches and height of 32 feet. No change to operations, stack discharge location, or emissions.</p>		
<p>11. New Source Review Permit(s) to Install (PTI) associated with this application? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If Yes, enter the PTI Number(s) _____</p>		
<p>12. Compliance Status - <i>A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.</i></p> <p>a. Is the change identified above in compliance with the associated applicable requirement(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>c. If the change includes a future applicable requirement(s), will timely compliance be achieved? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>		
<p>13. Operator's Additional Information ID - <i>Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.</i> AI</p>		
14. Contact Name Terrance Walter	Telephone No. 734-254-8291	E-mail Address terry.walter@federalmogul.com
<p>15. This submittal also updates the ROP renewal application submitted on ____/____/____ <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A <i>(If yes, a mark-up of the affected pages of the ROP must be attached.)</i></p>		

NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS

APPENDIX



// BASIS FOR ROP APPENDIX 7 FACTOR
CHANGE

B: CO, VOC and NOx Emission Calculations

Table 1. Uncontrolled Gasoline Engine Emission Factors

Automotive Engine	Overall Uncontrolled Emission Factors (lb gal)		
	CO	VOC	NOx
2.0L	5.28	0.069	0.014
4 CYL 2.4T	5.54	0.148	0.055
2.7T	5.54	0.148	0.055
6 CYL 3.0L	5.54	0.148	0.055
4.6L	5.40	0.0161	0.034
5.4L	3.41	0.148	0.15
L6 (4.2L)	3.27	0.1040	0.023
8 CYL 5.3L	4.29	0.148	0.11
PV8	4.29	0.148	0.11
6.0L	4.29	0.148	0.11
Briggs & Stratton	3.41	0.148	0.102
Auto	3.41	0.148	0.102
Auto w/AICS	3.41	0.148	0.102
Diesel Engines	0.13	0.0493	0.604

Table 2. Destruction Efficiencies Based on AICS

Test Cycles	CO Destruction Efficiency (%)	VOC Destruction Efficiency (%)
Durability Cycle A	95%	95%
Durability Cycle B	83%	95%
Durability Cycle C	57%	95%
Durability Cycle D	92%	95%
Deep Thermal Shock	95%	95%
Developmental		
If stack temp. > 1400 °F	50%	50%
If stack temp. < 1400 °F	0%	0%
Small Engines	0%	0%
Diesel Engines	0%	0%

The permittee shall apply the uncontrolled emission factors and control efficiency factors from Tables 1 and 2 appropriate for an engine in its class and for the type of test being conducted. If engine specific data is not available, the most conservative emission factor for the engine in its class will be used. If no data is available for the class, the most conservative factor for any class will be used. This data, along with the monthly fuel use, shall be used to calculate the monthly and previous 12-month NOx, CO and VOC limits and ensure compliance with SC 1.1a, 1.1b, and 1.1c, respectively.

B: CO, VOC and NOx Emission Calculations**Table 1. Uncontrolled Gasoline Engine Emission Factors**

Automotive Engine	Overall Uncontrolled Emission Factors (lb pollutant /lb fuel)		
	CO	VOC	NOx
2.0L	0.853	0.011	0.002
2.4T	0.895	0.024	0.009
2.7T	0.895	0.024	0.009
3.0L	0.895	0.024	0.020
4.6L	0.872	0.003	0.005
5.4L	0.551	0.024	0.024
L6 (4.2L)	0.528	0.017	0.004
5.3L	0.693	0.024	0.018
PV8	0.693	0.024	0.018
6.0L	0.693	0.024	0.018
Briggs & Stratton	0.551	0.024	0.016
Auto	0.551	0.024	0.016
Auto w/AICS	0.551	0.024	0.016
Diesel Engines	0.018	0.007	0.085

- SHOULD BE 0.009

Table 2. Destruction Efficiencies Based on AICS

Test Cycles	CO Destruction Efficiency (%)	VOC Destruction Efficiency (%)
Durability Cycle A	95%	95%
Durability Cycle B	83%	95%
Durability Cycle C	57%	95%
Durability Cycle D	92%	95%
Deep Thermal Shock	95%	95%
Developmental		
If stack temp. > 1400 °F	50%	50%
If stack temp. < 1400 °F	0%	0%
Small Engines	0%	0%
Diesel Engines	0%	0%

The permittee shall apply the uncontrolled emission factors and control efficiency factors from Tables 1 and 2 appropriate for an engine in its class and for the type of test being conducted. If engine specific data is not available, the most conservative emission factor for the engine in its class will be used. If no data is available for the class, the most conservative factor for any class will be used. This data, along with the monthly fuel use, shall be used to calculate the monthly and previous 12-month NOx, CO and VOC permit limits.

Durability Cycle A: The engine starts up at idle, no load for 30 minutes and then goes to wide open throttle at a speed which produces the peak torque for the specific engine (determined by initial power curves). Then it operates at no load at elevated speeds and back at the speed and load that produces peak power and peak power plus 6 percent. The cycle repeats as many times as necessary, often for 100 hours or more.

Durability Cycle B: Shaped like a saw tooth with the engine continuously ramping up and down

Durability Cycle C: Consists of periods of steady operation interrupted by long periods of rapidly changing speed and load conditions

Durability Cycle D: Similar to Cycle A

APPENDIX



// MI-ROP-N6327-2015 Mark-Up



Michigan Department Of Environment, [al QualityGreat Lakes](#)
[and Energy](#)
Air Quality Division

EFFECTIVE DATE: AUGUST 21, 2015

ISSUED TO

FEDERAL-MOGUL [CORPORATIONPOWERTRAIN, LLC](#)

State Registration Number (SRN): N6327

LOCATED AT

47001 Port Street, Plymouth, Michigan 48170

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-N6327-~~2015~~[TBD](#)

Expiration Date: ~~August 21, 2020~~[TBD](#)

Administratively Complete ROP Renewal Application Due Between
~~February 21, 2019~~[TBD](#) – ~~February 21, 2020~~[TBD](#)

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to PA 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-N6327-~~2015~~[TBD](#)

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to PA 451 and the federal Clean Air Act.

Michigan Department of Environment, [al, Great Lakes and EnergyQuality](#)

Wilhemina McLemore, Detroit District Supervisor

TABLE OF CONTENTS

AUTHORITY AND ENFORCEABILITY	3
A. GENERAL CONDITIONS.....	4
Permit Enforceability	4
General Provisions.....	4
Equipment & Design	5
Emission Limits	5
Testing/Sampling	5
Monitoring/Recordkeeping	6
Certification & Reporting	6
Permit Shield	7
Revisions	8
Reopenings.....	8
Renewals	9
Stratospheric Ozone Protection	9
Risk Management Plan	9
Emission Trading	9
Permit To Install (PTI)	10
B. SOURCE-WIDE CONDITIONS	11
C. EMISSION UNIT CONDITIONS	12
EMISSION UNIT SUMMARY TABLE	12
D. FLEXIBLE GROUP CONDITIONS.....	15
FLEXIBLE GROUP SUMMARY TABLE	15
FG-ALLCELLS	16
FG-NESHAP CCCCCC (6C).....	21
FG-COLD CLEANERS.....	24
FG-RULE 290	27
E. NON-APPLICABLE REQUIREMENTS	30
APPENDICES	31
Appendix 1: Abbreviations & Acronyms	31
Appendix 2. Schedule of Compliance.....	32
Appendix 3. Monitoring Requirements	32
Appendix 4. Recordkeeping	32
Appendix 5. Testing Procedures	32
Appendix 6. Permits to Install.....	32
Appendix 7. Emission Calculations	33
Appendix 8. Reporting	34

AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environment, ~~at~~ Great Lakes and Energy Quality (MDEQEGLE) or his or her designee.

Formatted: Font: 11 pt

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI, are streamlined, subsumed and/or are state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

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

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**
- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**
- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**
2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**
3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**
4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities **(R 336.1213(1)(d))**:
 - a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
 - c. Inspect, at reasonable times, any of the following:
 - i. Any stationary source.
 - ii. Any emission unit.
 - iii. Any equipment, including monitoring and air pollution control equipment.
 - iv. Any work practices or operations regulated or required under the ROP.
 - d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.
5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq.,

and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**
7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**
8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any 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)**
10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following: **(R 336.1301(1))**
 - a. A 6-minute average of 20 percent opacity, except for one 6-minute average per hour of not more than 27 percent opacity.
 - b. A limit specified by an applicable federal new source performance standard.

The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
 - a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.¹ **(R 336.1901(a))**
 - b. Unreasonable interference with the comfortable enjoyment of life and property.¹ **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1). **(R 336.2001)**
14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**
15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate **(R 336.1213(3)(b))**:
- The date, location, time, and method of sampling or measurements.
 - The dates the analyses of the samples were performed.
 - The company or entity that performed the analyses of the samples.
 - The analytical techniques or methods used.
 - The results of the analyses.
 - The related process operating conditions or parameters that existed at the time of sampling or measurement.
17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**
19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**
20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**
21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
- For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
 - For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
 - For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following **(R 336.1213(3)(c))**:
- Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
 - Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.
23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**
24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**
25. 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 appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor 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 conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA. **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
- The applicable requirements are included and are specifically identified in the ROP.
 - The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
- The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
 - The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
 - The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

- d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**
- 28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
 - a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
 - b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
 - c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
 - d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
 - e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**
- 29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

- 30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**
- 31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**
- 32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(9))**
- 33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

- 34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
 - a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
 - b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
 - c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
 - d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(7))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F.
37. If the permittee is subject to 40 CFR, Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR, Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).
39. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall comply with the requirements of 40 CFR, Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
- June 21, 1999,
 - Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
 - The date on which a regulated substance is first present above a threshold quantity in a process.
40. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR, Part 68.
41. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c). **(40 CFR, Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit To Install (PTI)

- 43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule. ² **(R 336.1201(1))**
- 44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA. ² **(R 336.1201(8), Section 5510 of Act 451)**
- 45. The terms and conditions of a PTI 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 the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI 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. The written request shall be sent to the appropriate AQD District Supervisor, **MDEQEGLE**. ² **(R 336.1219)**
- 46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, **MDEQEGLE**, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI. ² **(R 336.1201(4))**

Footnotes:

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

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

Federal-Mogul ~~Corporation~~Powertrain, LLC

ROP No.: MI-ROP-N6327-2015
Expiration Date: ~~August 21, 2020~~
PTI No.: MI-PTI-N6327-2015

B. SOURCE-WIDE CONDITIONS

Part B outlines the source-wide terms and conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no source-wide conditions, this portion of the permit will be left blank.

C. EMISSION UNIT CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-TESTCELL1	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL2	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL3	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL4	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL5	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-TESTCELL6	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests - Fifteen cells test engines ranging in size from 250 to 600 horsepower - and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL7	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests - Fifteen cells test engines ranging in size from 250 to 600 horsepower - and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL8	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests - Fifteen cells test engines ranging in size from 250 to 600 horsepower - and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL9	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests - Fifteen cells test engines ranging in size from 250 to 600 horsepower - and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL10	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests - Fifteen cells test engines ranging in size from 250 to 600 horsepower - and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL11	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests - Fifteen cells test engines ranging in size from 250 to 600 horsepower - and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL12	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests - Fifteen cells test engines ranging in size from 250 to 600 horsepower - and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-TESTCELL13	One of 16 individual dynamometer test cells, equipped with a dividing wall, using diesel, E-85, and gasoline fuel. that Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Multiple small engines can be tested at one time. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL14	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL15	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL16	One of 16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. that tests Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. Each cell has its own individual stack with identical parameters. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-GASOLINE_TANKS	Two multi-compartment Steel Underground Storage Tanks for motor fuels (gasoline, E85 or blends of fuels) as described: One 12,000 gallon tank with (2) 6,000 gallon compartments (UST 1 and UST 2). One 6,000 gallon tank with (3) 2,000 gallon compartments (UST 3, UST 4, and UST10) One 2,000 gallon –Blow Off Tank (UST 5)	11/01/98	FG-NESHAP CCCCC (6C)
EU-SAFETYKLEEN	Three (3) parts washers, each with an air/vapor interface of less than 10 square feet Parts Washer	04/01/1998 2016	FG-COLDCLEANERS
EU-BEARINGTESTER	Bearing Testing Machine	12/01/2005	FG-RULE290
<u>EU-SHAFTSEALSYS</u>	<u>A multi-component Shaft Sealing System consisting of sealing shaft test units, electric ovens, laboratory hoods, molding and hydraulic presses, and a screen printer.</u>	<u>2018</u>	<u>FG-RULE290</u>

Formatted: Font: 10 pt

Formatted Table

Formatted: Font: 10 pt

D. FLEXIBLE GROUP CONDITIONS

Part D outlines terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

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-ALLCELLS	16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. <u>Each cell has its own individual stack with identical parameters.</u> (PTI No. 368-97E)	EU-TESTCELL1, EU-TESTCELL2 EU-TESTCELL3, EU-TESTCELL4 EU-TESTCELL5, EU-TESTCELL6 EU-TESTCELL7, EU-TESTCELL8 EU-TESTCELL9, EU-TESTCELL10 EU-TESTCELL11, EU-TESTCELL12 EU-TESTCELL13, EU-TESTCELL14 EU-TESTCELL15, EU-TESTCELL16
FG-NESHAP CCCCC (6C)	Group of steel underground storage tanks for motor fuels (gasoline, E85 or a combination of fuels) with compartment ranging in size from 2,000 to 12,000 gallons.	EU-GASOLINE_TANKS
FG- COLDCLEANERS	<u>Three (3) parts washers, each with an air/vapor interface of less than 10 square feet</u> <u>Parts Washer</u>	EU-SAFETYKLEEN
FG-RULE290	Bearing Testing Machine <u>and Shaft Sealing System</u>	EU-BEARINGTESTER, <u>EU-SHAFTSEALSYS</u>

FG-ALLCELLS FLEXIBLE GROUP CONDITIONS
--

DESCRIPTION

Emission Units: 16 Gasoline/Diesel/E-85 Engine Test Cells. For the purposes of this permit, E-85 means ethanol-gasoline blends of up to 85% ethanol and the remainder gasoline and will be treated as gasoline. (PTI No. 368-97E)

POLLUTION CONTROL EQUIPMENT

Federal-Mogul installed an Air Injection Control System (AICS) in 2004 to control CO and VOC emissions from the test cells. The AICS works by injecting a measured stream of air into the exhaust gas which is hotter than the auto ignition point of CO, causing the CO to oxidize in the exhaust pipe. The air injection rate (scfm) is dependent on the type of durability or deep thermal shock (DTS) test being performed. The exhaust temperature is monitored before and after air injection to assure sufficient destruction efficiency. The exhaust temperature needs to reach 1100°F to oxidize CO; exhaust temperatures using the AICS usually exceed 1400°F. The AICS does, however, cause a minor increase in NOx emissions. The AICS is used with durability and deep thermal shock testing for most gasoline engines, but is not used with diesel or small engines or during developmental testing.

The facility also operates an Automatic Data Acquisition System, which monitors all operating parameters of the test cells on a continuous basis. These parameters include fuel usage, exhaust temperature, and air injection rate.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	5.6 tons per year ²	12-month rolling time period	FG- ALLCELLS	SC VI.9, SC VI.19	R336.1205(1)(a) &(3), R336.1702(a)
2. Carbon Monoxide	223.3 tons per year ²	12-month rolling time period	FG- ALLCELLS	SC V.1, SC VI.8, SC VI.19	R336.1205(1)(a) &(3)
3. NOx	62.1 tons per year ²	12-month rolling time period	FG- ALLCELLS	SC V.1, SC VI.7	R336.1205(1)(a) &(3)

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Gasoline including E-85	2,630,750 lb/year ²	12-month rolling time period	FG-ALLCELLS	SC VI.1, SC VI.12	R336.1205(1)(a)&(3), 40 CFR 52.21(c)&(d)
2. Gasoline including E-85	16,713 lb/day ²	Per day	FG-ALLCELLS	SC VI.1, SC VI.11	R336.1205(1)(a)&(3), R336.1225
3. Gasoline including E-85	2,327 lb/hr ²	Per hour	FG-ALLCELLS	SC VI.1, SC VI.10	R336.1205(1)(a)&(3), R336.1225, 40 CFR 52.21(c)&(d)
4. Diesel or fuel oil	1,418,000 lb/year ²	12-month rolling time period	FG-ALLCELLS	SC VI.2, SC VI.12	R336.1205(1)(a)&(3), 40 CFR 52.21(c)&(d)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
5. Diesel or fuel oil	19,143 lb/day ²	Per day	FG-ALLCELLS	SC VI.2, SC VI.11	R336.1205(1)(a)&(3), 40 CFR 52.21 (c)&(d)
6. Diesel or fuel oil	0.30% sulfur content in fuel ²	Test Protocol	FG-ALLCELLS	SC VI.18	R.336.1402, Michigan State Implementation Plan

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

- The AICS shall maintain the air injection rate as stated below or establish an alternative minimum air injection rate based on a minimum average temperature differential of 190 °F between the exhaust temperature and a point downstream of the air injection location and a minimum oxygen concentration of 1 percent downstream of the air injection location. Operating below the minimum air injection rates in the table below, or alternative air injection rates, for more than 20 seconds is an excursion. Documentation of any alternative minimum air injection rates shall be kept on file for a period of at least five years. Proper operating parameters may be updated and applied by the permittee provided the changes have been submitted to and approved by the District Supervisor, AQD.² (40 CFR 64.6(c)(1)(i), 40 CFR 64.6(c)(2))

Test	Minimum Air Injection Rate (scfm)
Durability Cycle A	45
Durability Cycle B	50
Durability Cycle C	72
Durability Cycle D	50
Deep Thermal Shock	45

- No engine tested in FG-ALLCELLS shall exceed 600 hp., (R 336.1213(2))

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. (R 336.1213(3)(b)(ii))

- Once, ~~during the term of the ROP~~ every 5 years from the date of previous test, verification of NOx and CO emission rates from a representative number of test cells included in FG-ALLCELLS, by testing at owner's expense, in accordance with Department requirements will be required. A representative number of test cells shall be defined in the test plan and subject to AQD approval. No less than ~~60~~ 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.² (R336.1205(1)(a) & (3), R336.2001, R336.2003, R336.2004)

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. (R 336.1213(3)(b)(ii))

- The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the gasoline flow for each engine tested, except for the small engine test cell, on a continuous basis.² (R336.1205(1)(a) & (3), R336.1225, R336.1702(a))
- The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the diesel flow for each engine tested, on a continuous basis.² (R336.1205(1)(a) & (3), R336.1225, R336.1702(a))

Formatted: Numbered + Level: 1 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0" + Tab after: 0.25" + Indent at: 0.25"

Formatted: Font: Bold

Formatted: Font: Bold

Commented [RD1]: R 336.2001(3) states that the owner shall submit a test plan for approval not less than 30 days before a performance test. We propose to align with the underlying applicable rule.

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the exhaust gas temperature just upstream of the air injection point and downstream of the air injection point on a continuous basis during all periods of time when the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(iii))**
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the air injection rate (in scfm) on a continuous basis during all periods of time when the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(iii))**
5. The permittee shall properly maintain the Automatic Data Acquisition System including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**
6. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NOx emission calculation records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d))**
7. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month CO emission calculation records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3))**
8. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month VOC emission calculation records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
9. The permittee shall calculate the hourly gasoline usage rate for FG-ALLCELLS based upon calendar monthly recordkeeping prorated to an hourly rate using actual operating hours.² **(R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d))**
10. The permittee shall calculate the daily diesel and gasoline usage rate for FG-ALLCELLS based upon calendar monthly recordkeeping prorated to a daily rate using actual operating days.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
11. The permittee shall keep, in a satisfactory manner, monthly gasoline and diesel fuel use records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
12. The permittee shall keep, in a satisfactory manner, a written log of the hours of operation for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d))**
13. The permittee shall keep, in a satisfactory manner, records of the air injection rate (scfm) during all periods of time the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(ii))**
14. The permittee shall keep, in a satisfactory manner, records of the exhaust gas temperature just upstream of the air injection point and downstream of the air injection point during all periods of time the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(ii))**
15. The permittee shall keep, in a satisfactory manner, records of all periods of time the AICS is operating in any of the test cells included in FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
16. The permittee shall keep, in a satisfactory manner, annual average CO and VOC destruction efficiency calculation records.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
17. The permittee shall maintain a complete record of fuel oil specifications and/or fuel analysis for each delivery, or storage tank, of fuel oil or diesel fuel. These records may include purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any other records adequate to demonstrate compliance with the percent sulfur limit in fuel oil.² **(R336.1205(1)(a)(ii)(C))**
18. The permittee shall equip and maintain all gasoline engine test cells included in FG-ALLCELLS that conduct Durability and Deep Thermal Shock testing with an air injection control system (AICS). The AICS must achieve

a minimum overall annual average CO and VOC destruction efficiency of ~~77-57~~ percent and 90 percent, respectively. The destruction efficiencies shall be calculated following the procedures in Appendix 7. Appendix 7 may be updated and applied by the permittee provided any changes have been submitted to and approved by the District Supervisor, AQD. Proper operation of the AICS includes maintaining the cycle average exhaust temperature just upstream of the air injection point and downstream of the air injection point at a minimum of 1300 °F and the procedures listed in SC IV.1. Operating below 1300 °F for more than 30 minutes is an excursion. SC IV.1 may be updated and applied by the permittee provided any changes have been submitted to and approved by the District Supervisor, AQD.² **(40 CFR 64.6(c)(1)(i), 40 CFR 64.6(c)(2))**

Commented [RD2]: Change is proposed for consistency with Appendix 7, Table 2 destruction efficiencies.

- 19. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). In response to an excursion the system will be shut down. **(40 CFR 64.7(d))**
- 20. The permittee shall operate the Automatic Data Acquisition System during all required periods when FG-ALLCELLS is in operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c))**

21. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

Formatted: Font: Not Bold

22. The permittee shall maintain records of the horsepower of the engines tested in FG-ALLCELLS. **(R 336.1213(2))**
~~24.~~

Formatted: List Paragraph, Left, No bullets or numbering

Formatted: Indent: Left: 0.25", No bullets or numbering

See Appendix 7

VII. REPORTING

- 1. Prompt reporting of deviations pursuant to Special Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
- 2. Semiannual reporting of monitoring and deviations pursuant to Special Condition 23 of Part A. Report shall be received by appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
- 3. Annual certification of compliance pursuant to Special Conditions 19 and 20 of Part A. Report shall be received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
- 4. The permittee shall notify the Division if a change in equipment in FG-ALLCELLS occurs which could affect a change in emissions or emission factors relied upon to demonstrate compliance with R336.1225. The notification shall be submitted to the Division within 30 days of the actual equipment change.¹ **(R336.1225)**

5. The permittee shall notify the Division if a change in land use occurs for property classified as industrial or as a public roadway, where this classification was relied upon to demonstrate compliance with R336.1225 for FG-ALLCELLS. The notification shall be submitted to the Division within 30 days of the actual land use change. Within 60 days of the land use change, the permittee shall submit to the Division a plan for complying with the requirements of R336.1225.¹ **(R336.1225)**
6. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective action taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**
7. Each semiannual report of monitoring and deviations shall include summary information on monitor downtimes. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

VIII. STACK/VENT RESTRICTION(S)

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

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. Each of the 176 stacks included in SV-ALLCELLS	6 ²	32 ²	R336.1225, 40 CFR 52.21 (c) and (d)

Commented [RD3]: An additional stack meeting the stack parameter requirements listed in SC VIII.1 was added to Test Cell 13 to allow the engines to exhaust from each size of the safety dividing wall. There were no changes to Test Cell 13 operation or emissions, and permitted exhaust parameters remain equivalent.

IX. OTHER REQUIREMENT(S)

1. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**
2. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

Footnotes:

¹This condition is state enforceable only.

²This condition is established pursuant to Rule 201(1).

**FG-NESHAP CCCCCC (6C)
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION:

This flexible group includes existing and new/reconstructed stationary gasoline dispensing facilities (GDFs) located at an area source of hazardous air pollutants (HAPs) that have a maximum monthly gasoline throughput of one of the following:

1. Less than 10,000 gallons
2. At least 10,000 gallons and no more than 100,000 gallons

GDF means any stationary source which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine use solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment. For the purpose of this permit E-85 will be treated as gasoline

Emission Unit: EU-GASOLINE_TANKS

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Required measures for a gasoline dispensing facility (GDF) with monthly throughput less than 10,000 gallons
 - a. The permittee must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. **(40 CFR 63.11116(a))**
 - b. The permittee shall minimize gasoline spills. **(40 CFR 63.11116(a)(1))**
 - c. The permittee shall clean up spills as expeditiously as practicable. **(40 CFR 63.11116(a)(2))**
 - d. The permittee shall cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use. **(40 CFR 63.11116(a)(3))**
 - e. The permittee shall minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators. **(40 CFR 63.11116(a)(4))**
2. Required measures for GDF with monthly throughput > than 10,000 gallons and < than 100,000 gallons

- a. The permittee must comply with the requirements cited in Section III.1 for GDF facilities with monthly throughput <10,000 gallons (**40CFR 63.11117(a)**)
 - b. The permittee must only load gasoline into storage tanks utilizing submerged filling as specified in §63.11117(b) (1) and (2).(**40 CFR 63.11117(b))**)
 - c. Submerged fill pipes not meeting the specifications listed on §63.11117 (b) (1) and (2) are allowed if the owner or operator can demonstrate that the liquid level in the tank is always above the entire opening of the fill pipe. Documentation for such demonstration must be made available for inspection (**40 CFR 63.11117(b)(3)**)
 - d. Gasoline storage tanks with capacities of less than 250 gallons are not required to comply with the submerged fill requirements cited on paragraph (b) of this section, but must comply only with all of the requirements in §63.11116. (**40 CFR 63.11117 (c)**)
3. If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in §63.11118. (**40 CFR 63.11111(d)**)
 4. If your affected source's throughput ever exceeds an applicable throughput threshold, the affected source will remain subject to the requirements for sources above the threshold, even if the affected source throughput later falls below the applicable throughput threshold. (**40 CFR 63.11111(i)**)

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. Record of Gasoline Throughput
 - a. The permittee shall maintain records of gasoline throughput to demonstrate that their monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable. The records must be made available to USEPA or to ~~MDEQ~~-EGLE within 24 hours of a request (**40 CFR 63.11116(b), 40 CFR 63.11117(d)**)
 - b. Monthly throughput is the total volume of gasoline loaded into, or dispensed from, all the gasoline storage tanks located at a single affected GDF (**40 CFR 63.11111(h)**)
 - c. Monthly throughput is calculated by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the current day, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the previous 364 days, and then dividing that sum by 12. (**40 CFR 63.11132**)

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (**R 336.1213(3)(c)(ii)**)
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (**R 336.1213(3)(c)(i)**)

Federal-Mogul ~~Corporation~~Powertrain, LLC

ROP No.: MI-ROP-N6327-2015
Expiration Date: August 21, 2020
PTI No.: MI-PTI-N6327-2015

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

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the Gasoline Distribution MACT as specified in 40 CFR 63 Subpart CCCCCC. (40 CFR 63 Subpart A and CCCCCC)

Footnotes:

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

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

**FG-COLD CLEANERS
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

~~Three (3) parts washers, each with an air/vapor interface of less than 10 square feet. Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.~~

Emission Unit: EU-SAFETYKLEEN

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**
2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
 - a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(h))**
 - b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**
2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**
3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**
4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**

5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
 - a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. (R 336.1707(2)(a))
 - b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. (R 336.1707(2)(b))
 - c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. (R 336.1707(2)(c))

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. (R 336.1213(3))
2. The permittee shall maintain the following information on file for each cold cleaner: (R 336.1213(3))
 - a. A serial number, model number, or other unique identifier for each cold cleaner.
 - b. The date the unit was installed, manufactured or that it commenced operation.
 - c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
 - d. The applicable Rule 201 exemption.
 - e. The Reid vapor pressure of each solvent used.
 - f. If applicable, the option chosen to comply with Rule 707(2).
3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. (R 336.1611(3), R 336.1707(4))
4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. (R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

Federal-Mogul ~~Corporation~~Powertrain, LLC

ROP No.: MI-ROP-N6327-2015
Expiration Date: ~~August 21, 2020~~
PTI No.: MI-PTI-N6327-2015

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

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

**FG-RULE 290
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290.

Emission Unit: EU-BEARINGTESTER, EU-SHAFTSEALSYS

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

1. Each emission unit that emits only noncarcinogenic volatile organic compounds or noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone if the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively. **(R 336.1290(a)(i))**
2. Each emission unit that the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively, and all the following criteria listed below are met: **(R 336.1290(a)(ii))**
 - a. For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 1,000 or 500 pounds per month, respectively. **(R 336.1290(a)(ii)(A))**
 - b. For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 0.04 microgram per cubic meter and less than 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(a)(ii)(B))**
 - c. For carcinogenic air contaminants with initial risk screening levels greater than or equal to 0.04 microgram per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(a)(ii)(C))**
 - d. The emission unit shall not emit any air contaminants, excluding non-carcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with an initial threshold screening level or initial risk screening level less than 0.04 microgram per cubic meter. **(R 336.1290(a)(ii)(D))**
3. Each emission unit that emits only noncarcinogenic particulate air contaminants and other air contaminants that are exempted under Rule 290(a)(i) and/or Rule 290(a)(ii), if all of the following provisions are met: **(R 336.1290(a)(iii))**

- a. The particulate emissions are controlled by an appropriately designed and operated fabric filter collector or an equivalent control system which is designed to control particulate matter to a concentration of less than or equal to 0.01 pound of particulate per 1,000 pounds of exhaust gases and which does not have an exhaust gas flow rate more than 30,000 actual cubic feet per minute. **(R 336.1290(a)(iii)(A))**
- b. The visible emissions from the emission unit are not more than five percent opacity in accordance with the methods contained in Rule 303. **(R 336.1290(a)(iii)(B))**
- c. The initial threshold screening level for each particulate air contaminant, excluding nuisance particulate, is more than 2.0 micrograms per cubic meter. **(R 336.1290(a)(iii)(C))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

- 1. The provisions of Rule 290 apply to each emission unit that is operating pursuant to Rule 290. **(R 336.1290)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

- 1. The permittee shall maintain records of the following information for each emission unit for each calendar month using the methods outlined in the DEQ, AQD Rule 290, Permit to Install Exemption Record form (EQP 3558) or in a format that is acceptable to the AQD District Supervisor. **(R 336.1213(3))**
 - a. Records identifying each air contaminant that is emitted. **(R 336.1213(3))**
 - b. Records identifying if each air contaminant is controlled or uncontrolled. **(R 336.1213(3))**
 - c. Records identifying if each air contaminant is either carcinogenic or non-carcinogenic. **(R 336.1213(3))**
 - d. Records identifying the ITSL and IRSL, if established, of each air contaminant that is being emitted under the provisions of Rules 290(a)(ii) and (iii). **(R 336.1213(3))**
 - e. Material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions in sufficient detail to demonstrate that the actual emissions of the emission unit meet the emission limits outlined in this table and Rule 290. **(R 336.1213(3), R 336.1290(c))**
- 2. The permittee shall maintain an inventory of each emission unit that is exempt pursuant to Rule 290. This inventory shall include the following information. **(R 336.1213(3))**
 - a. The permittee shall maintain a written description of each emission unit as it is maintained and operated throughout the life of the emission unit. **(R 336.1290(b), R 336.1213(3))**

Federal-Mogul ~~Corporation~~Powertrain, LLC

ROP No.: MI-ROP-N6327-2015
Expiration Date: ~~August 21, 2020~~
PTI No.: MI-PTI-N6327-2015

- b. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(a)(iii), the permittee shall maintain a written description of the control device, including the designed control efficiency and the designed exhaust gas flow rate. **(R 336.1213(3))**
- 3. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(a)(iii), the permittee shall perform a monthly visible emission observation of each stack or vent during routine operating conditions. This observation need not be performed using Method 9. The permittee shall keep a written record of the results of each observation. **(R 336.1213(3))**

See Appendix 4

VII. REPORTING

- 1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
- 2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
- 3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Federal-Mogul ~~Corporation~~Powertrain, LLC

ROP No.: MI-ROP-N6327-2015
Expiration Date: ~~August 21, 2020~~
PTI No.: MI-PTI-N6327-2015

E. NON-APPLICABLE REQUIREMENTS

At the time of ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

APPENDICES**Appendix 1: Abbreviations & Acronyms**

The following is an alphabetical listing of abbreviations/acronyms that may be used in this permit.

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 ₂ e	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 Great Lakes and Energy	°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 High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. (R 336.1213(4)(a), R 336.1119(a)(ii))

Appendix 3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate source-wide, emission unit and/or flexible group special conditions. Therefore, this appendix is not applicable.

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate source-wide, emission unit and/or flexible group special conditions. The permittee shall use the approved formats and procedures for the recordkeeping requirements referenced in FG-RULE 290. Alternative formats must be approved by the AQD District Supervisor

Appendix 5. Testing Procedures

There are no specific testing requirement plans or procedures for this ROP. Therefore, this appendix is not applicable.

Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N6327-~~2009~~2015. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-N6327-~~2009a~~2015 is being reissued as Source-Wide PTI No. MI-PTI-N6327-2015.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
368-97E	201300014/ April 1, 2014	Incorporate Permit to Install (PTI) No. 368-97E.	FG-ALLCELLS

Appendix 7. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FG-ALLCELLS.

A: Annual Destruction Efficiency Calculation for CO and VOC

1. Identify the gasoline fueled engine type and the type of test cycle being performed. Exclude the small (non-automotive) engines and those used for developmental testing.
2. Record the quantity of gasoline consumed during that test
3. Determine the uncontrolled emission rates by multiplying the appropriate lb pollutant per lb fuel emission factor for CO and VOC by the quantity of fuel consumed
4. Multiply the uncontrolled emission rates from Step 3 by the appropriate destruction efficiency from Table 2 of Section B of the Appendix.
5. Sum the total controlled and uncontrolled emission rates on an annual basis. Divide the annual controlled emission rate by the annual uncontrolled emission rate to determine the overall annual destruction efficiencies for CO and VOCs.

B: CO, VOC and NOx Emission Calculations

Table 1. Uncontrolled Gasoline Engine Emission Factors

Automotive Engine	Overall Uncontrolled Emission Factors (lb pollutant /lb fuel)		
	CO	VOC	NOx
2.0L	0.853	0.011	0.002
2.4T	0.895	0.024	0.009
2.7T	0.895	0.024	0.009
3.0L	0.895	0.024	0.0200
4.6L	0.872	0.003	0.005
5.4L	0.551	0.024	0.024
L6 (4.2L)	0.528	0.017	0.004
5.3L	0.693	0.024	0.018
PV8	0.693	0.024	0.018
6.0L	0.693	0.024	0.018
Briggs & Stratton	0.551	0.024	0.016
Auto	0.551	0.024	0.016
Auto w/AICS	0.551	0.024	0.016
Diesel Engines	0.018	0.007	0.085

Commented [RD4]: In the 2003 ROP Renewal, an error occurred in this factor during the conversion from lb/gal to lb/lb units. See Appendix G of this application.
 [0.055 lb NOx / gallon] / [6.19 lb / gallon] = 0.009 lb/lb

Table 2. Destruction Efficiencies Based on AICS

Test Cycles	CO Destruction Efficiency (%)	VOC Destruction Efficiency (%)	T-inlet / T-outlet (°F)
Durability Cycle A	95%	95%	1,300 / 1,300
Durability Cycle B	83.77%	95%	1,300 / 1,300
Durability Cycle C	57%	95%	1,300 / 1,300
Durability Cycle D	92%	95%	1,300 / 1,300
Deep Thermal Shock	95%	95%	1,300 / 1,300
Developmental			
If stack temp. ≥ 1400 °F	50%	50%	1,400 / 100
If stack temp. < 1400 °F	0%	0%	NA
Small Engines	0%	0%	NA
Diesel Engines	0%	0%	NA

Commented [RD5]: In accordance with FG-ALLCELLS SC VI.18, we are requesting approval for a change in destruction efficiency used to estimate CO emissions.

Outlet (controlled) CO emissions for Durability Cycle B was tested to be 0.16 lb/lb in May 2019.

The proposed change aligns with 2019 test results:

0.693 lb/lb [from Table 1] x (1 – 77%) [from Table 2] = 0.16 lb/lb [May 2019 test result]

The permittee shall apply the uncontrolled emission factors and control efficiency factors from Tables 1 and 2 appropriate for an engine in its class and for the type of test being conducted. If engine specific data is not available, the most conservative emission factor for the engine in its class will be used. If no data is available for the class, the most conservative factor for any class will be used. This data, along with the monthly fuel use, shall be used to calculate the monthly and previous 12-month NOx, CO and VOC permit limits.

Durability Cycle A: The engine starts up at idle, no load for 30 minutes and then goes to wide open throttle at a speed which produces the peak torque for the specific engine (determined by initial power curves). Then it operates at no load at elevated speeds and back at the speed and load that produces peak power and peak power plus 6 percent. The cycle repeats as many times as necessary, often for 100 hours or more.

Durability Cycle B: Shaped like a saw tooth with the engine continuously ramping up and down.

Durability Cycle C: Consists of periods of steady operation interrupted by long periods of rapidly changing speed and load conditions

Durability Cycle D: Similar to Cycle A

Deep Thermal Shock (DTS): This cycle alternates between high load (peak torque or peak horsepower) and idle in short intervals. About 1/4 of the time it is at peak horsepower, 1/4 at peak torque and 1/2 at idle.

Developmental: Variety of tests where the engines typically operate at low and intermediate loads. The engines are operated in rich burn conditions (O₂ less than 0.5 percent)

The DAS measures the transducers associated with the AICS. In the event that the test engine is not able to achieve minimum inlet or outlet temperatures, or AICS air flow rate, the DAS will halt the test. The operator inspects the set-up for errors and restarts the test. If minimum AICS transducer values are still not realized, then the engine will run according to customer requirements, but the AICS system will run in developmental mode. The predetermined destruction efficiency will then be applied to the emissions.

A quality check of the tabulated uncontrolled and controlled emissions occurs at the end of each month. If errors are detected, corrections are applied as specified in the above statements.

Appendix 8. Reporting

A. Annual, Semi-annual, and Deviation Certification Reporting

The permittee shall use the **MDEQ-EGLE** Report Certification form (EQP 5736) and **MDEQ-EGLE** Deviation Report form (EQP 5737) for the annual, semi-annual and deviation certification reporting referenced in the reporting section of the source-wide, emission unit and/or flexible group special conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Federal-Mogul ~~Corporation~~Powertrain, LLC

ROP No.: MI-ROP-N6327-2015
Expiration Date: ~~August 21, 2020~~
PTI No.: MI-PTI-N6327-2015

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate source-wide, emission unit and/or flexible group special conditions. Therefore, Part B of this appendix is not applicable.



Michigan Department Of Environment, Great Lakes and
Energy
Air Quality Division

EFFECTIVE DATE: AUGUST 21, 2015

ISSUED TO

FEDERAL-MOGUL POWERTRAIN, LLC

State Registration Number (SRN): N6327

LOCATED AT

47001 Port Street, Plymouth, Michigan 48170

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-N6327-TBD

Expiration Date: TBD

Administratively Complete ROP Renewal Application Due Between
TBD – TBD

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to PA 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-N6327-TBD

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to PA 451 and the federal Clean Air Act.

Michigan Department of Environment, Great Lakes and Energy

Wilhemina McLemore, Detroit District Supervisor

TABLE OF CONTENTS

AUTHORITY AND ENFORCEABILITY	3
A. GENERAL CONDITIONS.....	4
Permit Enforceability	4
General Provisions.....	4
Equipment & Design	5
Emission Limits.....	5
Testing/Sampling	5
Monitoring/Recordkeeping	6
Certification & Reporting	6
Permit Shield	7
Revisions	8
Reopenings.....	8
Renewals.....	9
Stratospheric Ozone Protection	9
Risk Management Plan.....	9
Emission Trading	9
Permit To Install (PTI).....	10
B. SOURCE-WIDE CONDITIONS	11
C. EMISSION UNIT CONDITIONS	12
EMISSION UNIT SUMMARY TABLE.....	12
D. FLEXIBLE GROUP CONDITIONS.....	15
FLEXIBLE GROUP SUMMARY TABLE.....	15
FG-ALLCELLS.....	16
FG-NESHAP CCCCCC (6C).....	21
FG-COLD CLEANERS.....	24
FG-RULE 290.....	27
E. NON-APPLICABLE REQUIREMENTS	30
APPENDICES	31
Appendix 1: Abbreviations & Acronyms	31
Appendix 2. Schedule of Compliance.....	32
Appendix 3. Monitoring Requirements	32
Appendix 4. Recordkeeping	32
Appendix 5. Testing Procedures	32
Appendix 6. Permits to Install.....	32
Appendix 7. Emission Calculations	33
Appendix 8. Reporting	34

AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environment, Great Lakes and Energy (EGLE) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI, are streamlined, subsumed and/or are state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

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

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**
- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**
- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**
2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**
3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**
4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities **(R 336.1213(1)(d))**:
 - a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
 - c. Inspect, at reasonable times, any of the following:
 - i. Any stationary source.
 - ii. Any emission unit.
 - iii. Any equipment, including monitoring and air pollution control equipment.
 - iv. Any work practices or operations regulated or required under the ROP.
 - d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.
5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq.,

and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**
7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**
8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any 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)**
10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following: **(R 336.1301(1))**
 - a. A 6-minute average of 20 percent opacity, except for one 6-minute average per hour of not more than 27 percent opacity.
 - b. A limit specified by an applicable federal new source performance standard.

The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
 - a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.¹ **(R 336.1901(a))**
 - b. Unreasonable interference with the comfortable enjoyment of life and property.¹ **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1). **(R 336.2001)**
14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**
15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate **(R 336.1213(3)(b))**:
 - a. The date, location, time, and method of sampling or measurements.
 - b. The dates the analyses of the samples were performed.
 - c. The company or entity that performed the analyses of the samples.
 - d. The analytical techniques or methods used.
 - e. The results of the analyses.
 - f. The related process operating conditions or parameters that existed at the time of sampling or measurement.
17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**
19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**
20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**
21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
 - a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
 - b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
 - c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following **(R 336.1213(3)(c))**:
 - a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
 - b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.
23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**
24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**
25. 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 appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor 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 conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA. **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
 - a. The applicable requirements are included and are specifically identified in the ROP.
 - b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
 - a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
 - b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
 - c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

- d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**
28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
 - a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
 - b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
 - c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
 - d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
 - e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**
29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**
31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**
32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(9))**
33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
 - a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
 - b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
 - c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
 - d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(7))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaiming, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F.
37. If the permittee is subject to 40 CFR, Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR, Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).
39. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall comply with the requirements of 40 CFR, Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
- June 21, 1999,
 - Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
 - The date on which a regulated substance is first present above a threshold quantity in a process.
40. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR, Part 68.
41. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR, Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit To Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule. ² **(R 336.1201(1))**
44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA. ² **(R 336.1201(8), Section 5510 of Act 451)**
45. The terms and conditions of a PTI 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 the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI 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. The written request shall be sent to the appropriate AQD District Supervisor, EGLE. ² **(R 336.1219)**
46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, EGLE, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI. ² **(R 336.1201(4))**

Footnotes:

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

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

B. SOURCE-WIDE CONDITIONS

Part B outlines the source-wide terms and conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no source-wide conditions, this portion of the permit will be left blank.

C. EMISSION UNIT CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-TESTCELL1	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL2	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL3	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL4	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL5	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL6	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL7	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL8	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL9	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-TESTCELL10	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL11	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL12	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL13	One dynamometer test cell, equipped with a dividing wall, using diesel, E-85, and gasoline fuel that tests small engines. Multiple small engines can be tested at one time. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL14	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL15	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-TESTCELL16	One dynamometer test cell using diesel, E-85, and gasoline fuel that tests engines ranging in size from 250 to 600 horsepower. (PTI No. 368-97E)	11/01/98	FG-ALLCELLS
EU-GASOLINE_TANKS	Two multi-compartment Steel Underground Storage Tanks for motor fuels (gasoline, E85 or blends of fuels) as described: One 12,000 gallon tank with (2) 6,000 gallon compartments (UST 1 and UST 2). One 6,000 gallon tank with (3) 2,000 gallon compartments (UST 3, UST 4, and UST10) One 2,000 gallon –Blow Off Tank (UST 5)	11/01/98	FG-NESHAP CCCCC (6C)
EU-SAFETYKLEEN	Three (3) parts washers, each with an air/vapor interface of less than 10 square feet	2016	FG-COLDCLEANERS
EU-BEARINGTESTER	Bearing Testing Machine	12/01/2005	FG-RULE290
EU-SHAFTSEALSYS	A multi-component Shaft Sealing System consisting of sealing shaft test units, electric ovens, laboratory hoods, molding and hydraulic presses, and a screen printer.	2018	FG-RULE290

D. FLEXIBLE GROUP CONDITIONS

Part D outlines terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

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-ALLCELLS	16 individual dynamometer test cells using diesel, E-85, and gasoline fuel. Fifteen cells test engines ranging in size from 250 to 600 horsepower and one cell tests small engines. (PTI No. 368-97E)	EU-TESTCELL1, EU-TESTCELL2 EU-TESTCELL3, EU-TESTCELL4 EU-TESTCELL5, EU-TESTCELL6 EU-TESTCELL7, EU-TESTCELL8 EU-TESTCELL9, EU-TESTCELL10 EU-TESTCELL11, EU-TESTCELL12 EU-TESTCELL13, EU-TESTCELL14 EU-TESTCELL15, EU-TESTCELL16
FG-NESHAP CCCCCC (6C)	Group of steel underground storage tanks for motor fuels (gasoline, E85 or a combination of fuels) with compartment ranging in size from 2,000 to 12,000 gallons.	EU-GASOLINE_TANKS
FG- COLDCLEANERS	Three (3) parts washers, each with an air/vapor interface of less than 10 square feet	EU-SAFETYKLEEN
FG-RULE290	Bearing Testing Machine and Shaft Sealing System	EU-BEARINGTESTER, EU-SHAFTSEALSYS

**FG-ALLCELLS
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Emission Units: 16 Gasoline/Diesel/E-85 Engine Test Cells. For the purposes of this permit, E-85 means ethanol-gasoline blends of up to 85% ethanol and the remainder gasoline and will be treated as gasoline. (PTI No. 368-97E)

POLLUTION CONTROL EQUIPMENT

Federal-Mogul installed an Air Injection Control System (AICS) in 2004 to control CO and VOC emissions from the test cells. The AICS works by injecting a measured stream of air into the exhaust gas which is hotter than the auto ignition point of CO, causing the CO to oxidize in the exhaust pipe. The air injection rate (scfm) is dependent on the type of durability or deep thermal shock (DTS) test being performed. The exhaust temperature is monitored before and after air injection to assure sufficient destruction efficiency. The exhaust temperature needs to reach 1100°F to oxidize CO; exhaust temperatures using the AICS usually exceed 1400°F. The AICS does, however, cause a minor increase in NOx emissions. The AICS is used with durability and deep thermal shock testing for most gasoline engines, but is not used with diesel or small engines or during developmental testing.

The facility also operates an Automatic Data Acquisition System, which monitors all operating parameters of the test cells on a continuous basis. These parameters include fuel usage, exhaust temperature, and air injection rate.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	5.6 tons per year ²	12-month rolling time period	FG-ALLCELLS	SC VI.9, SC VI.19	R336.1205(1)(a)&(3), R336.1702(a)
2. Carbon Monoxide	223.3 tons per year ²	12-month rolling time period	FG-ALLCELLS	SC V.1, SC VI.8, SC VI.19	R336.1205(1)(a)&(3)
3. NOx	62.1 tons per year ²	12-month rolling time period	FG-ALLCELLS	SC V.1, SC VI.7	R336.1205(1)(a)&(3)

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Gasoline including E-85	2,630,750 lb/year ²	12-month rolling time period	FG-ALLCELLS	SC VI.1, SC VI.12	R336.1205(1)(a)&(3), 40 CFR 52.21(c)&(d)
2. Gasoline including E-85	16,713 lb/day ²	Per day	FG-ALLCELLS	SC VI.1, SC VI.11	R336.1205(1)(a)&(3), R336.1225
3. Gasoline including E-85	2,327 lb/hr ²	Per hour	FG-ALLCELLS	SC VI.1, SC VI.10	R336.1205(1)(a)&(3), R336.1225, 40 CFR 52.21(c)&(d)
4. Diesel or fuel oil	1,418,000 lb/year ²	12-month rolling time period	FG-ALLCELLS	SC VI.2, SC VI.12	R336.1205(1)(a)&(3), 40 CFR 52.21(c)&(d)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
5. Diesel or fuel oil	19,143 lb/day ²	Per day	FG-ALLCELLS	SC VI.2, SC VI.11	R336.1205(1)(a)&(3), 40 CFR 52.21 (c)&(d)
6. Diesel or fuel oil	0.30% sulfur content in fuel ²	Test Protocol	FG-ALLCELLS	SC VI.18	R.336.1402, Michigan State Implementation Plan

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The AICS shall maintain the air injection rate as stated below or establish an alternative minimum air injection rate based on a minimum average temperature differential of 190 °F between the exhaust temperature and a point downstream of the air injection location and a minimum oxygen concentration of 1 percent downstream of the air injection location. Operating below the minimum air injection rates in the table below, or alternative air injection rates, for more than 20 seconds is an excursion. Documentation of any alternative minimum air injection rates shall be kept on file for a period of at least five years. Proper operating parameters may be updated and applied by the permittee provided the changes have been submitted to and approved by the District Supervisor, AQD.² **(40 CFR 64.6(c)(1)(i), 40 CFR 64.6(c)(2))**

Test	Minimum Air Injection Rate (scfm)
Durability Cycle A	45
Durability Cycle B	50
Durability Cycle C	72
Durability Cycle D	50
Deep Thermal Shock	45

2. No engine tested in FG-ALLCELLS shall exceed 600 hp. **(R 336.1213(2))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. Once, every 5 years from the date of previous test, verification of NOx and CO emission rates from a representative number of test cells included in FG-ALLCELLS, by testing at owner's expense, in accordance with Department requirements will be required. A representative number of test cells shall be defined in the test plan and subject to AQD approval. No less than 30[RD1] days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.² **(R336.1205(1)(a) & (3), R336.2001, R336.2003, R336.2004)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the gasoline flow for each engine tested, except for the small engine test cell, on a continuous basis.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the diesel flow for each engine tested, on a continuous basis.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the exhaust gas temperature just upstream of the air injection point and downstream of the air injection point on a continuous basis during all periods of time when the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(iii))**
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner the Automatic Data Acquisition System to monitor and record the air injection rate (in scfm) on a continuous basis during all periods of time when the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(iii))**
5. The permittee shall properly maintain the Automatic Data Acquisition System including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**
6. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NOx emission calculation records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d))**
7. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month CO emission calculation records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3))**
8. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month VOC emission calculation records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
9. The permittee shall calculate the hourly gasoline usage rate for FG-ALLCELLS based upon calendar monthly recordkeeping prorated to an hourly rate using actual operating hours.² **(R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d))**
10. The permittee shall calculate the daily diesel and gasoline usage rate for FG-ALLCELLS based upon calendar monthly recordkeeping prorated to a daily rate using actual operating days.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
11. The permittee shall keep, in a satisfactory manner, monthly gasoline and diesel fuel use records for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
12. The permittee shall keep, in a satisfactory manner, a written log of the hours of operation for FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d))**
13. The permittee shall keep, in a satisfactory manner, records of the air injection rate (scfm) during all periods of time the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(ii))**
14. The permittee shall keep, in a satisfactory manner, records of the exhaust gas temperature just upstream of the air injection point and downstream of the air injection point during all periods of time the AICS is operating.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a), 40 CFR 64.6(c)(1)(ii))**
15. The permittee shall keep, in a satisfactory manner, records of all periods of time the AICS is operating in any of the test cells included in FG-ALLCELLS.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
16. The permittee shall keep, in a satisfactory manner, annual average CO and VOC destruction efficiency calculation records.² **(R336.1205(1)(a) & (3), R336.1225, R336.1702(a))**
17. The permittee shall maintain a complete record of fuel oil specifications and/or fuel analysis for each delivery, or storage tank, of fuel oil or diesel fuel. These records may include purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any other records adequate to demonstrate compliance with the percent sulfur limit in fuel oil.² **(R336.1205(1)(a)(ii)(C))**
18. The permittee shall equip and maintain all gasoline engine test cells included in FG-ALLCELLS that conduct Durability and Deep Thermal Shock testing with an air injection control system (AICS). The AICS must achieve

a minimum overall annual average CO and VOC destruction efficiency of 57[RD2] percent and 90 percent, respectively. The destruction efficiencies shall be calculated following the procedures in Appendix 7. Appendix 7 may be updated and applied by the permittee provided any changes have been submitted to and approved by the District Supervisor, AQD. Proper operation of the AICS includes maintaining the cycle average exhaust temperature just upstream of the air injection point and downstream of the air injection point at a minimum of 1300 °F and the procedures listed in SC IV.1. Operating below 1300 °F for more than 30 minutes is an excursion. SC IV.1 may be updated and applied by the permittee provided any changes have been submitted to and approved by the District Supervisor, AQD.² **(40 CFR 64.6(c)(1)(i), 40 CFR 64.6(c)(2))**

19. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). In response to an excursion the system will be shut down. **(40 CFR 64.7(d))**
20. The permittee shall operate the Automatic Data Acquisition System during all required periods when FG-ALLCELLS is in operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c))**
21. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**
22. The permittee shall maintain records of the horsepower of the engines tested in FG-ALLCELLS. **(R 336.1213(2))**

See Appendix 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to Special Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to Special Condition 23 of Part A. Report shall be received by appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to Special Conditions 19 and 20 of Part A. Report shall be received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall notify the Division if a change in equipment in FG-ALLCELLS occurs which could affect a change in emissions or emission factors relied upon to demonstrate compliance with R336.1225. The notification shall be submitted to the Division within 30 days of the actual equipment change.¹ **(R336.1225)**

5. The permittee shall notify the Division if a change in land use occurs for property classified as industrial or as a public roadway, where this classification was relied upon to demonstrate compliance with R336.1225 for FG-ALLCELLS. The notification shall be submitted to the Division within 30 days of the actual land use change. Within 60 days of the land use change, the permittee shall submit to the Division a plan for complying with the requirements of R336.1225.¹ **(R336.1225)**
6. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective action taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**
7. Each semiannual report of monitoring and deviations shall include summary information on monitor downtimes. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

VIII. STACK/VENT RESTRICTION(S)

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

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. Each of the 17 ^[RD3] stacks included in SV-ALLCELLS	6 ²	32 ²	R336.1225, 40 CFR 52.21 (c) and (d)

IX. OTHER REQUIREMENT(S)

1. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**
2. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

Footnotes:

¹This condition is state enforceable only.

²This condition is established pursuant to Rule 201(1).

**FG-NESHAP CCCCCC (6C)
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION:

This flexible group includes existing and new/reconstructed stationary gasoline dispensing facilities (GDFs) located at an area source of hazardous air pollutants (HAPs) that have a maximum monthly gasoline throughput of one of the following:

1. Less than 10,000 gallons
2. At least 10,000 gallons and no more than 100,000 gallons

GDF means any stationary source which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine use solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment. For the purpose of this permit E-85 will be treated as gasoline

Emission Unit: EU-GASOLINE_TANKS

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Required measures for a gasoline dispensing facility (GDF) with monthly throughput less than 10,000 gallons
 - a. The permittee must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. **(40 CFR 63.11116(a))**
 - b. The permittee shall minimize gasoline spills. **(40 CFR 63.11116(a)(1))**
 - c. The permittee shall clean up spills as expeditiously as practicable. **(40 CFR 63.11116(a)(2))**
 - d. The permittee shall cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use. **(40 CFR 63.11116(a)(3))**
 - e. The permittee shall minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators. **(40 CFR 63.11116(a)(4))**
2. Required measures for GDF with monthly throughput > than 10,000 gallons and < than 100,000 gallons

- a. The permittee must comply with the requirements cited in Section III.1 for GDF facilities with monthly throughput <10,000 gallons (**40CFR 63.11117(a)**)
 - b. The permittee must only load gasoline into storage tanks utilizing submerged filling as specified in §63.11117(b) (1) and (2).(**40 CFR 63.11117(b))**)
 - c. Submerged fill pipes not meeting the specifications listed on §63.11117 (b) (1) and (2) are allowed if the owner or operator can demonstrate that the liquid level in the tank is always above the entire opening of the fill pipe. Documentation for such demonstration must be made available for inspection (**40 CFR 63.11117(b)(3)**)
 - d. Gasoline storage tanks with capacities of less than 250 gallons are not required to comply with the submerged fill requirements cited on paragraph (b) of this section, but must comply only with all of the requirements in §63.11116. (**40 CFR 63.11117 (c)**)
3. If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in §63.11118. (**40 CFR 63.11111(d)**)
 4. If your affected source's throughput ever exceeds an applicable throughput threshold, the affected source will remain subject to the requirements for sources above the threshold, even if the affected source throughput later falls below the applicable throughput threshold. (**40 CFR 63.11111(i)**)

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. Record of Gasoline Throughput
 - a. The permittee shall maintain records of gasoline throughput to demonstrate that their monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable. The records must be made available to USEPA or to EGLE within 24 hours of a request (**40 CFR 63.11116(b), 40 CFR 63.11117(d)**)
 - b. Monthly throughput is the total volume of gasoline loaded into, or dispensed from, all the gasoline storage tanks located at a single affected GDF (**40 CFR 63.11111(h)**)
 - c. Monthly throughput is calculated by summing the volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the current day, plus the total volume of gasoline loaded into, or dispensed from, all gasoline storage tanks at each GDF during the previous 364 days, and then dividing that sum by 12.(**40 CFR 63.11132**)

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (**R 336.1213(3)(c)(ii)**)
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (**R 336.1213(3)(c)(i)**)

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

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the Gasoline Distribution MACT as specified in 40 CFR 63 Subpart CCCCCC. **(40 CFR 63 Subpart A and CCCCCC)**

Footnotes:

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

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

**FG-COLD CLEANERS
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Three (3) parts washers, each with an air/vapor interface of less than 10 square feet

Emission Unit: EU-SAFETYKLEEN

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**
2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
 - a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(h))**
 - b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**
2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**
3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**
4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**
5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees fahrenheit, then the cold cleaner must comply with at least one of the following provisions:

- a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**
- b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
- c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**
2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
 - a. A serial number, model number, or other unique identifier for each cold cleaner.
 - b. The date the unit was installed, manufactured or that it commenced operation.
 - c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
 - d. The applicable Rule 201 exemption.
 - e. The Reid vapor pressure of each solvent used.
 - f. If applicable, the option chosen to comply with Rule 707(2).
3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**
4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

FG-RULE 290
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290.

Emission Unit: EU-BEARINGTESTER, EU-SHAFTSEALSYS

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

1. Each emission unit that emits only noncarcinogenic volatile organic compounds or noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone if the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively. **(R 336.1290(a)(i))**

2. Each emission unit that the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively, and all the following criteria listed below are met: **(R 336.1290(a)(ii))**
 - a. For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 1,000 or 500 pounds per month, respectively. **(R 336.1290(a)(ii)(A))**

 - b. For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 0.04 microgram per cubic meter and less than 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(a)(ii)(B))**

 - c. For carcinogenic air contaminants with initial risk screening levels greater than or equal to 0.04 microgram per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(a)(ii)(C))**

 - d. The emission unit shall not emit any air contaminants, excluding non-carcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with an initial threshold screening level or initial risk screening level less than 0.04 microgram per cubic meter. **(R 336.1290(a)(ii)(D))**

3. Each emission unit that emits only noncarcinogenic particulate air contaminants and other air contaminants that are exempted under Rule 290(a)(i) and/or Rule 290(a)(ii), if all of the following provisions are met: **(R 336.1290(a)(iii))**

- a. The particulate emissions are controlled by an appropriately designed and operated fabric filter collector or an equivalent control system which is designed to control particulate matter to a concentration of less than or equal to 0.01 pound of particulate per 1,000 pounds of exhaust gases and which does not have an exhaust gas flow rate more than 30,000 actual cubic feet per minute. **(R 336.1290(a)(iii)(A))**
- b. The visible emissions from the emission unit are not more than five percent opacity in accordance with the methods contained in Rule 303. **(R 336.1290(a)(iii)(B))**
- c. The initial threshold screening level for each particulate air contaminant, excluding nuisance particulate, is more than 2.0 micrograms per cubic meter. **(R 336.1290(a)(iii)(C))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

- 1. The provisions of Rule 290 apply to each emission unit that is operating pursuant to Rule 290. **(R 336.1290)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

- 1. The permittee shall maintain records of the following information for each emission unit for each calendar month using the methods outlined in the DEQ, AQD Rule 290, Permit to Install Exemption Record form (EQP 3558) or in a format that is acceptable to the AQD District Supervisor. **(R 336.1213(3))**
 - a. Records identifying each air contaminant that is emitted. **(R 336.1213(3))**
 - b. Records identifying if each air contaminant is controlled or uncontrolled. **(R 336.1213(3))**
 - c. Records identifying if each air contaminant is either carcinogenic or non-carcinogenic. **(R 336.1213(3))**
 - d. Records identifying the ITSL and IRSL, if established, of each air contaminant that is being emitted under the provisions of Rules 290(a)(ii) and (iii). **(R 336.1213(3))**
 - e. Material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions in sufficient detail to demonstrate that the actual emissions of the emission unit meet the emission limits outlined in this table and Rule 290. **(R 336.1213(3), R 336.1290(c))**
- 2. The permittee shall maintain an inventory of each emission unit that is exempt pursuant to Rule 290. This inventory shall include the following information. **(R 336.1213(3))**
 - a. The permittee shall maintain a written description of each emission unit as it is maintained and operated throughout the life of the emission unit. **(R 336.1290(b), R 336.1213(3))**

- b. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(a)(iii), the permittee shall maintain a written description of the control device, including the designed control efficiency and the designed exhaust gas flow rate. **(R 336.1213(3))**
- 3. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(a)(iii), the permittee shall perform a monthly visible emission observation of each stack or vent during routine operating conditions. This observation need not be performed using Method 9. The permittee shall keep a written record of the results of each observation. **(R 336.1213(3))**

See Appendix 4

VII. REPORTING

- 1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
- 2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
- 3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

E. NON-APPLICABLE REQUIREMENTS

At the time of ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

APPENDICES

Appendix 1: Abbreviations & Acronyms

The following is an alphabetical listing of abbreviations/acronyms that may be used in this permit.

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 ₂ e	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 Environment, Great Lakes and Energy	°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
		NMOC	Non-methane Organic Compounds
		NO _x	Oxides of Nitrogen
		ng	Nanogram
MSDS	Material Safety Data Sheet	PM	Particulate Matter
NA	Not Applicable	PM10	Particulate Matter equal to or less than 10 microns in diameter
NAAQS	National Ambient Air Quality Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pounds per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonable Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO ₂	Sulfur Dioxide
SC	Special Condition	TAC	Toxic Air Contaminant
SCR	Selective Catalytic Reduction	Temp	Temperature
SNCR	Selective Non-Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TEQ	Toxicity Equivalence Quotient	µg	Microgram
USEPA/EPA	United States Environmental Protection Agency	µm	Micrometer or Micron
VE	Visible Emissions	VOC	Volatile Organic Compounds
		yr	Year

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. (R 336.1213(4)(a), R 336.1119(a)(ii))

Appendix 3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate source-wide, emission unit and/or flexible group special conditions. Therefore, this appendix is not applicable.

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate source-wide, emission unit and/or flexible group special conditions.

The permittee shall use the approved formats and procedures for the recordkeeping requirements referenced in FG-RULE 290. Alternative formats must be approved by the AQD District Supervisor

Appendix 5. Testing Procedures

There are no specific testing requirement plans or procedures for this ROP. Therefore, this appendix is not applicable.

Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N6327-2015. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-N6327-2015 is being reissued as Source-Wide PTI No. MI-PTI-N6327-.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
368-97E	201300014/ April 1, 2014	Incorporate Permit to Install (PTI) No. 368-97E.	FG-ALLCELLS

Appendix 7. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FG-ALLCELLS.

A: Annual Destruction Efficiency Calculation for CO and VOC

1. Identify the gasoline fueled engine type and the type of test cycle being performed. Exclude the small (non-automotive) engines and those used for developmental testing.
2. Record the quantity of gasoline consumed during that test
3. Determine the uncontrolled emission rates by multiplying the appropriate lb pollutant per lb fuel emission factor for CO and VOC by the quantity of fuel consumed
4. Multiply the uncontrolled emission rates from Step 3 by the appropriate destruction efficiency from Table 2 of Section B of the Appendix.
5. Sum the total controlled and uncontrolled emission rates on an annual basis. Divide the annual controlled emission rate by the annual uncontrolled emission rate to determine the overall annual destruction efficiencies for CO and VOCs.

B: CO, VOC and NOx Emission Calculations

Table 1. Uncontrolled Gasoline Engine Emission Factors

Automotive Engine	Overall Uncontrolled Emission Factors (lb pollutant /lb fuel)		
	CO	VOC	NOx
2.0L	0.853	0.011	0.002
2.4T	0.895	0.024	0.009
2.7T	0.895	0.024	0.009
3.0L	0.895	0.024	0.009[RD4]
4.6L	0.872	0.003	0.005
5.4L	0.551	0.024	0.024
L6 (4.2L)	0.528	0.017	0.004
5.3L	0.693	0.024	0.018
PV8	0.693	0.024	0.018
6.0L	0.693	0.024	0.018
Briggs & Stratton	0.551	0.024	0.016
Auto	0.551	0.024	0.016
Auto w/AICS	0.551	0.024	0.016
Diesel Engines	0.018	0.007	0.085

Table 2. Destruction Efficiencies Based on AICS

Test Cycles	CO Destruction Efficiency (%)	VOC Destruction Efficiency (%)	T-inlet / T-outlet (°F)
Durability Cycle A	95%	95%	1,300 / 1,300
Durability Cycle B	77% ^[RD5]	95%	1,300 / 1,300
Durability Cycle C	57%	95%	1,300 / 1,300
Durability Cycle D	92%	95%	1,300 / 1,300
Deep Thermal Shock	95%	95%	1,300 / 1,300
Developmental			
If stack temp. ≥1400 °F	50%	50%	1,400 / 100
If stack temp. < 1400 °F	0%	0%	NA
Small Engines	0%	0%	NA
Diesel Engines	0%	0%	NA

The permittee shall apply the uncontrolled emission factors and control efficiency factors from Tables 1 and 2 appropriate for an engine in its class and for the type of test being conducted. If engine specific data is not available, the most conservative emission factor for the engine in its class will be used. If no data is available for the class, the most conservative factor for any class will be used. This data, along with the monthly fuel use, shall be used to calculate the monthly and previous 12-month NOx, CO and VOC permit limits.

Durability Cycle A: The engine starts up at idle, no load for 30 minutes and then goes to wide open throttle at a speed which produces the peak torque for the specific engine (determined by initial power curves). Then it operates at no load at elevated speeds and back at the speed and load that produces peak power and peak power plus 6 percent. The cycle repeats as many times as necessary, often for 100 hours or more.

Durability Cycle B: Shaped like a saw tooth with the engine continuously ramping up and down.

Durability Cycle C: Consists of periods of steady operation interrupted by long periods of rapidly changing speed and load conditions

Durability Cycle D: Similar to Cycle A

Deep Thermal Shock (DTS): This cycle alternates between high load (peak torque or peak horsepower) and idle in short intervals. About 1/4 of the time it is at peak horsepower, 1/4 at peak torque and 1/2 at idle.

Developmental: Variety of tests where the engines typically operate at low and intermediate loads. The engines are operated in rich burn conditions (O₂ less than 0.5 percent)

The DAS measures the transducers associated with the AICS. In the event that the test engine is not able to achieve minimum inlet or outlet temperatures, or AICS air flow rate, the DAS will halt the test. The operator inspects the set-up for errors and restarts the test. If minimum AICS transducer values are still not realized, then the engine will run according to customer requirements, but the AICS system will run in developmental mode. The predetermined destruction efficiency will then be applied to the emissions.

A quality check of the tabulated uncontrolled and controlled emissions occurs at the end of each month. If errors are detected, corrections are applied as specified in the above statements.

Appendix 8. Reporting

A. Annual, Semi-annual, and Deviation Certification Reporting

The permittee shall use the EGLE Report Certification form (EQP 5736) and EGLE Deviation Report form (EQP 5737) for the annual, semi-annual and deviation certification reporting referenced in the reporting section of the source-wide, emission unit and/or flexible group special conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate source-wide, emission unit and/or flexible group special conditions. Therefore, Part B of this appendix is not applicable.