

Michigan Department of Environmental Quality  
Air Quality Division

State Registration Number  
M4085

**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number  
MI-ROP-M4085-2015a

**FCA US LLC - MACK AVENUE ENGINE PLANT**

SRN: M4085

Located at

11570 Warren Avenue East, Detroit, Michigan 48214

Permit Number: MI-ROP-M4085-2015a

Staff Report Date: April 6, 2015

Amended Date: October 2, 2015

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) requires that the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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ROP Number

**APRIL 6, 2015 STAFF REPORT**

MI-ROP-M4085-2015

**Purpose**

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for Air Pollution Control pursuant to Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

**General Information**

Stationary Source Mailing Address:	FCA US LLC – Mack Avenue Engine Plant 11570 Warren Avenue East Detroit, Michigan 48214
Source Registration Number (SRN):	M4085
North American Industry Classification System (NAICS) Code:	333618
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Initial
Application Number:	201400172
Responsible Official:	Lamarcus Keels Plant Manager 313-252-6599
AQD Contact:	Todd Zynda, Environmental Engineer 313-456-2761
Date Application Received:	November 5, 2014
Date Application Was Administratively Complete:	November 5, 2014
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	April 6, 2015
Deadline for Public Comment:	May 6, 2015

## Source Description

FCA US LLC (FCA) owns and operates the Mack Avenue Engine Plant (MAEP) located at 11570 Warren Avenue East, Detroit, Wayne County, Michigan. The facility consists of two contiguous engine manufacturing operations (Mack Avenue Engine I [south] and Mack Avenue Engine II [north]). Mack Avenue Engine I encompasses 1.4 million square feet, while Mack Avenue Engine II encompasses 650,000 square feet. Manufacturing at MAEP includes engine component machining, assembly, and testing of engines. At the time of this report the MAEP produces the 3.2-liter and 3.6-liter V-6 Pentastar engine. The boundaries of the facility are as follows. To north, east, and south are industrial and commercial businesses. Immediately adjacent to the facility property on the east is the Conrail Railway. To the west are residential properties. The nearest residential properties are located approximately 250 feet to the west.

MAEP operates three gasoline engine dynamometers, two natural gas fired engine hot test stands, three emergency fire pumps, miscellaneous combustion equipment (heating and ventilation units, heaters, hot water generators, steam generators), and wet machining equipment (boring, grinding using various cutting oils and lubricants).

On July 18, 2013 the facility was issued a New Source Review Permit for new dynamometers and hot test stands (Permit to Install [PTI] 261-99B). PTI 261-99B also included facility wide conditions for material limits on gasoline and natural gas usage, along with facility wide emission limits for nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO).

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2013**.

### **TOTAL STATIONARY SOURCE EMISSIONS**

<b>Pollutant</b>	<b>Tons per Year</b>
Carbon Monoxide (CO)	5.80
Lead (Pb)	None Reported
Nitrogen Oxides (NO <sub>x</sub> )	5.58
Particulate Matter (PM)	0.48
Sulfur Dioxide (SO <sub>2</sub> )	0.03
Volatile Organic Compounds (VOCs)	0.39

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases (GHG) in tons per year of CO<sub>2</sub>e (carbon dioxide equivalents) is less than 100,000 tons. CO<sub>2</sub>e is a calculation of the combined global warming potentials of six GHG (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

## Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is located in Wayne County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants. A small

portion of Wayne County has been designated by the USEPA as nonattainment for sulfur dioxide (SO<sub>2</sub>). MAEP is not located within the SO<sub>2</sub> nonattainment area.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit carbon monoxide (CO) exceeds 100 tons per year.

The stationary source is considered to be a minor source of HAP emissions because the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

The stationary source is considered a "synthetic minor" source in regards to the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451 because the stationary source accepted legally enforceable permit conditions limiting the potential to emit of carbon monoxide to less than 250 tons per year.

There are no New Source Performance Standards (NSPS) subject equipment at the facility.

EU-FIRE\_PUMP1, EU-FIRE\_PUMP2, and EU-FIRE\_PUMP3 at the stationary source are subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) promulgated in 40 CFR, Part 63, Subparts A and ZZZZ (RICE Area Source MACT). The ROP contains special conditions for applicable requirements from 40 CFR Part 63, Subparts A and ZZZZ. The AQD is not delegated the regulatory authority for the provisions of this area source MACT.

EU-FIRE\_PUMP1, EU-FIRE\_PUMP2, and EU-FIRE\_PUMP3 at the stationary source are not subject to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and IIII as they were manufactured before July 1, 2006.

EU-UST1 and EU-UST2 at the stationary source are subject to the National Emissions Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities promulgated in 40 CFR, Part 63, Subparts A and CCCCCC (Gasoline Dispensing Area Source MACT). The ROP contains special conditions for applicable requirements from 40 CFR Part 63, Subparts A and CCCCCC. The AQD is not delegated the regulatory authority for this area source MACT.

EU-UST1 and EU-UST2 are not subject to Michigan Air Pollution Control Rule R 336.1703 as the storage tanks do not meet the definition of a dispensing facility as defined in Rule R 336.1104(g).

EU-DYNO1, EU-DYNO2, and EU-DYNO3 are not subject to the National Emission Standards for Hazardous Air Pollutants 40 CFR 63 Subpart P P P P P for Engine Test Cells/Stands because the facility is not a major source of HAPs.

EU-MARKINGINK and adhesives (EU-HEADSUB\_LOCT, EU-HEAD\_LOCT, EU-BLOCK\_LOCT, EU-STA\_RTV\_400, and EU-STA\_RTV-700) are not subject to Michigan Air Pollution Control Rule R 336.1621 as the marking ink and adhesives coating lines meet the provisions of R 336.1621(10).

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

No emission units are subject to the federal Compliance Assurance Monitoring rule under 40 CFR Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

**Source-wide Permit to Install (PTI)**

Rule 214a requires the issuance of a Source-wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

**Streamlined/Subsumed Requirements**

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

**Non-applicable Requirements**

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4).

<b>Exempt Emission Unit ID</b>	<b>Description of Exempt Emission Unit</b>	<b>Rule 212(4) Exemption</b>	<b>Rule 201 Exemption</b>
EU-HEATERS	Air handling units, heaters, ovens, and hot water boilers; each burning natural gas fuel.	R336.1212(4)(d)	R336.1285(g)
EU-FIRE_PUMP1	368 horse power diesel fueled emergency fire pump engine	R336.1212(4)(d)	R336.1285(g)
EU-FIRE_PUMP2	368 horse power diesel fueled emergency fire pump engine	R336.1212(4)(d)	R336.1285(g)
EU-FIRE_PUMP3	368 horse power diesel fueled emergency fire pump engine	R336.1212(4)(d)	R336.1285(g)
EU-HEADSUB_LOCT	Loctite adhesive applied to head sub assembly spark plug tube install.	R336.1212(4)(g)	R336.1290
EU-HEAD_LOCT	Loctite adhesive applied to head line cup plug install.	R336.1212(4)(g)	R336.1290
EU-BLOCK_LOCT	Loctite adhesive applied to repair blocks.	R336.1212(4)(g)	R336.1290
EU-MARKINGINK	Marking inks for 4.7L head sub-assembly, maintenance painting.	R336.1212(4)(g)	R336.1290
EU-IPA	Isopropyl alcohol used for cleaning engines prior to adhesive application.	R336.1212(4)(g)	R336.1290
EU-STA_RTV_400	RTV adhesive applied to oil pan and front cover.	R336.1212(4)(g)	R336.1290
EU-STA_RTV_700	RTV adhesive applied to valve cover.	R336.1212(4)(g)	R336.1290

**Processes in Application Not Identified in Draft ROP**

There were no processes listed in the ROP Application as exempt devices under Rule 212(4). Exempt devices are not subject to any process-specific emission limits or standards in any applicable requirement.

### **Draft ROP Terms/Conditions Not Agreed to by Applicant**

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

### **Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

### **Action taken by the MDEQ, AQD**

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Ms. Wilhemina McLemore, Detroit District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

**Purpose**

A Staff Report dated April 6, 2015, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

**General Information**

Responsible Official:	Lamarcus Keels, Plant Manager 313-252-6599
AQD Contact:	Todd Zynda, Environmental Engineer 313-456-2761

**Summary of Pertinent Comments**

No pertinent comments were received during the 30-day public comment period.

**Changes to the April 6, 2015 Draft ROP**

No changes were made to the draft ROP.

Michigan Department of Environmental Quality  
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ROP Number

M4085

**OCTOBER 2, 2015 STAFF REPORT FOR RULE  
216(2) MINOR MODIFICATION**

MI-ROP-M4085-2015a

**Purpose**

On June 24, 2015, the Department of Environmental Quality, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-M4085-2015 to FCA US LLC – Mack Engine Plant pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(2).

**General Information**

Responsible Official:	Tyree O. Minner, Plant Manager
AQD Contact:	Kirsten S. Clemens, P.E., Environmental Engineer 517-582-5913
Application Number:	201500145
Date Application For Minor Modification Was Submitted:	September 8, 2015

**Regulatory Analysis**

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to R 336.1216(2).

**Description of Changes to the ROP**

Incorporate Permit to Install (PTI) No. 261-99C. PTI No. 261-99C was for deletion of an obsolete condition regarding tracking lead content. The gas utilized no longer contains lead.

**Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

**Action Taken by the DEQ**

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-M4085-2015, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the U.S. Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the Minor Modification will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by any affected states or the USEPA.

**Purpose**

A Staff Report dated October 2, 2015, was developed in order to set forth the applicable requirements and factual basis for the proposed Minor Modification to the Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1216(2)(c). The purpose of this Staff Report Addendum is to summarize any significant comments received on the proposed ROP modification during the U.S. Environmental Protection Agency's (USEPA) 45-day comment period as described in R 336.1216(2)(c). In addition, this addendum describes any changes to the proposed ROP Minor Modification resulting from these pertinent comments.

**General Information**

Responsible Official:	Tyree O. Minner, Plant Manager
AQD Contact:	Caryn Owens, Environmental Quality Analyst 231-876-4414

**Summary of Pertinent Comments**

No pertinent comments were received during the USEPA's 45-day comment period.

**Changes to the October 2, 2015 Proposed ROP Minor Modification**

No changes were made to the proposed ROP Minor Modification.