

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Self Initiated Inspection

A403334048

FACILITY: The Dow Chemical Company U.S.A., Midland		SRN / ID: A4033
LOCATION: 1790 Building, MIDLAND		DISTRICT: Saginaw Bay
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Kayla Peacock, Environmental Specialist		ACTIVITY DATE: 03/30/2016
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: FGDIVERSIONDIESELS -S1, Newly identified existing RICE MACT non-emergency engines >500 HP at a major source of HAPs.		
RESOLVED COMPLAINTS:		

**EUDIVERSIONDIESELA-S1 & EUDIVERSIONDIESELB-S1** are each a 1050 horsepower engine used to provide power to pumps that direct storm water and wastewater away from the waste water treatment plant headworks and toward holding tanks . I conducted an inspection of the engines during emission tests performed on March 30, 2016. Dow Chemical staff present included Kayla Peacock, Environmental Specialist and Kurt Detrich, Project Manager.

Since June 4, 2015, the engines are being classified as subject to 40 CFR Part 63 Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines. Based on information reviewed during the inspection the facility is complying with the requirements of 40 CFR Part 63 Subpart ZZZZ.

The FGDIVERSIONDIESELS-S1 are not included in the current Renewable Operating Permit MI-ROP-A4033-2011e. Emissions reported in MAERS under EUC3 included emissions from the wastewater treatment plant. The September 15, 2015 ROP Deviation reported submitted by Dow Chemical included the change in classification by Dow Chemical of the engines to non-emergency engines. The deviation report in part states:

“A review of the use of two 1050 horsepower emergency diesel engines has raised some uncertainty as to whether some engine operating scenarios constitute “emergency use”, potentially putting one or both engines above the allowable non-emergency run time.

RICE MACT does not clearly delineate what constitutes emergency use in all situations.

Due to the uncertainty described, Dow has elected to classify the 1050 horsepower diesel engines as non-emergency RICE. Dow is working with the manufacturer to coordinate the purchase and installation of upgrades and complete subsequent performing testing.”

Oxidation catalysts were installed on the engines in December 2015. The facility also requested that the engines be included in the ROP and they have submitted draft conditions to be included as part of an Amendment to the ROP application.

On March 29 and 30, 2016, the engines were tested for CO emissions to demonstrate compliance with the RICE MACT limit of  $\leq 23$  ppmvd at 15% O<sub>2</sub>. The inlet analyzer was providing inexplicably low CO values and the alternative demonstration of a 70% emission reduction across the catalyst was not used. Preliminary results indicate the engine emissions were in compliance with allowed limits. The catalyst inlet temperatures recorded were all between 777 and 788 F. The RICE MACT requires the catalyst inlet temperature be maintained between 450 and 1300 F to operate an engine.

The FGDIVERSIONDIESELS have been on-site since 1986 to manage flow from intense precipitation events and control waste stream flows to the headworks of the WWTP during unexpected process or WWTP upsets. The engines are usually run to provide power to on-site diversion pumps that direct flow to large holding tanks during periods of heavy precipitation. The diversion pumps can also be used to send process waste streams or other wastewater flows to the holding tanks if required for WWTP operations.

During the first quarter of 2016 the EUDIVERSIONDIESELA was run for 96 hours and EUDIVERSIONDIESELB 46 hours, including hours used for testing and tuning after installation of the oxidation catalyst.

While on site I observed the following for EUDIVERSIONDIESELB:

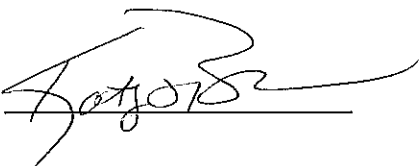
The pressure drop across the catalyst during testing ranged from 0.8 to 1.1 dP. The final range for each

engine allowed will be determined after review of testing results

The temperature of the catalyst inlet temperature ranged from 777 to 778. Catalyst temperatures must be  $\geq 450$  and  $\leq 1350$ F

The facility will initially calculate emissions based 15 minute readings from all emissions including those from startup. Start up periods will not exceed 30 minutes.

All required gauges and monitoring systems were installed and appeared to be operating properly.

NAME 

DATE 4/5/2016

SUPERVISOR 