

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Stack Test Observation**

N339153876

<b>FACILITY:</b> DTE Gas Company - Washington 10 Compressor Station		<b>SRN / ID:</b> N3391
<b>LOCATION:</b> 12700 30 MILE ROAD, WASHINGTON		<b>DISTRICT:</b> Southeast Michigan
<b>CITY:</b> WASHINGTON		<b>COUNTY:</b> MACOMB
<b>CONTACT:</b> Joe Kotwicki , Associate Environmental Specialist		<b>ACTIVITY DATE:</b> 06/10/2020
<b>STAFF:</b> Kerry Kelly	<b>COMPLIANCE STATUS:</b>	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Test of EU-ENGINE6		
<b>RESOLVED COMPLAINTS:</b>		

On Wednesday June 10, 2020, I (Kerry Kelly, EGLE-Air Quality Division) inspected DTE Washington 10 Storage Facility located at 12700 30 Mile Road, Washington Township, Michigan. The purpose of the inspection was to observe the stack test for one of the reciprocating internal combustion engines (EUENGINE6) at this facility. The test was conducted to establish compliance with FGENGINES2 special condition (SC) V.2. of MI-ROP-N3391-2017a. FGENGINES2 SC V.2. requires CO destruction efficiency testing be conducted at 100% speed and load (+/- 10 percent). EUENGINE6 was previously tested June 4, 2019 and May 5, 2020. DTE reviewed the data for EUENGINE6 following all three test runs from May 5, 2020 and determined the average engine load for all three runs combined was 89.4%. I informed DTE that AQD would accept this test though the load was slightly less than 90% if DTE reported, as a deviation, that the load was not 100% +/- 10 percent during testing. DTE chose to re-test the engine on June 10, 2020 instead of reporting a deviation.

AQD received the Test Protocol on February 24, 2020. The test protocol was reviewed and approved by Mark Dziadosz, EGLE-TPU, on April 9, 2020. The stack test consisted of three, one hour runs. The methods used for the analysis are detailed in the test protocol.

I arrived at the facility at approximately 9:05 AM and met with the engine operator, Gene, DTE, and Mr. Joe Kotwicki, DTE, Supervisor. At the time of my arrival, DTE was conducting the first run on EUENGINE6.

At approximately 9:15 AM, Mr. Kotwicki showed me to the control room. During the test, EUENGINE6 was compressing gas for injection into of the storage fields. I noted the engine and catalyst parameters several times periodically during each run. The parameter ranges I noted between 9:17 AM and 11:41 AM are listed in the table below:

<b>PARAMETER</b>	<b>OPERATING RANGE</b>
<b>Fuel Flow</b>	<b>30,371 - 30,484 scfh</b>
<b>Torque</b>	<b>96 - 98 %</b>
<b>Speed</b>	<b>960 - 970 RPM</b>
<b>Load</b>	<b>92 - approx. 95%</b>
<b>Catalyst Inlet Temperature</b>	<b>778 - 791 degrees Fahrenheit</b>
<b>Catalyst Outlet Temperature</b>	<b>728 - 736 degrees Fahrenheit</b>
<b>Catalyst Pressure Drop</b>	<b>2.3 inches water column</b>
<b>Horsepower</b>	<b>4368 - 4500+</b>

Mr. Howard Pann, Principal Engineer – Reliability Group/DTE Energy, provided me with the minute average for various operating parameters during each test run including horsepower, catalyst inlet and outlet temperature, and pressure drop across the catalyst (Attachment 1). This data indicates the load was between 92.6 - 95.0 percent for all runs combined which is within 100 percent +/- 10 percent. The records also indicate the speed, torque, horsepower, catalyst inlet and outlet temperature, and pressure drop across the catalyst ranges were similar to those noted in the table above. The rated speed of the engine is 1,000 RPM at full load, therefore the speed during testing, based on my observations and the records provided, was between 96% and 97% of

the maximum rated speed of the engine.

I went to the stack testing trailer outside of the building containing EUENGINE6 at the end of Run 1 and Run 2 of the test. According to DTE's stack testing crew, Run 1 started at 8:32 AM, Run 2 started at 9:42 AM, and Run 3 started at 10:53 AM. While in the testing trailer between 10:50 AM and 10:55 AM, I noted the inlet CO was 317.8 ppm and the outlet 4.3 ppm. The CO analyzer was reading 476 ppm when connected to the 490 ppm standard during calibrations between Run 2 and Run 3.

I inspected the stack for EUENGINE6 during testing at the beginning of Run 2 and Run 3 and did not observe any visible emissions.

**Conclusion**

DTE appears to be monitoring the parameters required in MI-ROP-N3391-2017a during testing and engine operation for EUENGINE6.

NAME K. Kelly

DATE 6/22/20

SUPERVISOR Joyce