



April 5, 2019

Ms. Joyce Zhu
District Supervisor – Air Quality Division
MDEGLE – Southeast District Office
27700 Donald Court
Warren, MI 48092-2793

-- transmitted via FedEx --

Subject: *Response to MDEGLE-AQD Violation Notice of March 15, 2019
DTE Gas Company – Milford Compressor Station
Milford, MI*

Dear Ms Zhu:

This letter is in response the EGLE Air Quality Division's Violation Notice referenced above. The notice cited the following:

Process Description	Rule/Permit Condition Violated	Comments
<i>Natural gas-fired Compressor Turbines EUTURBINE1 and EUTURBINE2</i>	<i>PTI No. 185-15A, Special Conditions SC 1.3 and SC 1.4</i>	<i>Stack test was performed between December 4-18, 2018 for EUTURBINE1, EUTURBINE2 and EUTURBINE3. The stack test report for EUTURBINE1 and EUTURBINE2 indicates that PM₁₀ and PM_{2.5} emissions exceeded the PM₁₀ and PM_{2.5} limits specified in SC 1.3 and SC 1.4 of PTI number 185-15A.</i>

DTE has completed a thorough review of the December 2018 test event. From this review we have determined that test samples from EUTURBINE1 and EUTURBINE2 were contaminated during sample collection by the equipment used to conduct the sampling. The contamination resulted in a positive bias, based on several evaluations conducted on the turbines and on the sampling equipment.

Retesting is scheduled to begin during the week of April 8th. With the expected lifting of MDOT frost laws, equipment needed to support the retesting will be delivered to the site.

Status of Turbine Operations

From completion of testing on December 17, 2018 through March 27, 2019, EUTURBINE1 and EUTURBINE2 operated for a combined total of 10 hours. Due to increased customer demand for gas, both units were forced back to normal operations during the week of March 25, 2019.

Cause of the High PM Testing Result

Five of the nine samples collected during the test program (3 samples from each of the 3 turbines) displayed an unusual and unexpected discoloration. Laboratory analysis of two of the samples, conducted immediately upon determination that the discolored samples had a much greater mass of particulate than the samples that weren't discolored, identified the presence of a silicone material. The initial focus into the source of the silicone where the turbines. A thorough examination of the turbines was conducted by personnel from both DTE Gas and by the turbine manufacturer, Solar Turbines. The examination did not identify any equipment problem or condition that could be the source of the discoloration, or contamination, of the five suspect samples.

Based upon the results of the turbine examination, the focus shifted to an examination of the sample collection methods and procedures. Through an exhaustive review of every aspect of the testing procedure, tape that is used in the construction of the sample probe was identified as the source of the contamination. The tape is rated for a maximum temperature of 392 °F. The temperature of the turbine exhaust, where the probe is positioned for sampling, is 950 °F. Subsequent testing of the tape at our laboratory discovered that the tape decomposed at approximately 750 °F, releasing the silicone adhesive that is on the tape into the air. This exhaust air was sampled during the laboratory test and found to contain exactly the same material as was identified on the filters from the December test. Analysis by FTIR showed that the silicone released from the tape during high heat decomposition was the identical to the silicone material that collected on the filters during the December test. The samples are not representative of actual turbine emissions.

A detailed report of our analysis of the problem, with supporting documentation, is enclosed.

Actions Taken to Prevent Reoccurrence

From these findings, DTE has implemented the following corrective actions

- Modified scope of pre-job review meetings to ensure team fully understands the nature of the source being tested
- Modified process for selecting equipment to be used during any test event by establishing criteria that is based on source type and operating conditions
- Provide training to test staff on revisions to the process

In conclusion, DTE requests that the NOV be rescinded, and that this retest event be used to demonstrate initial compliance. If you have any additional questions, please contact me at (313) 897-0298 or thomas.durham@dteenergy.com.

Sincerely,
DTE ENERGY CORPORATE SERVICES, LLC



Thomas Durham
Manager, Environmental Field Services
Environmental Management & Resources (EM&R)

- enc *Investigation of Elevated PM₁₀/PM_{2.5} Test Results*
 Attachment A – Turbine Oil Product Data Sheet
 Attachment B – MVA Report on Analysis of Oil/Tape/Experimental Filter
 Attachment C – MVA Report on Analysis of Filters from Test Event
 Attachment D – 3M Tape Product Data Sheet
 Attachment E – Photos of Tape on Sampling probe Used for Test
 Attachment F – Photos of Tape from Laboratory Experiment
 Attachment G – Graph of Sequence of Test Data for All Turbines
- cc Jenine Camilleri – MDEGLE (w/ enc)
 Chris Conley – DTE (w/ enc)