DTE

EXECUTIVE SUMMARY

DTE Energy's Environmental Management and Resources (EM&R), Field Services Group, performed emissions testing at the DTE-Gas Willow Compressor Station, located in Ypsilanti, Michigan. The fieldwork, performed June 1-8, 2020 was conducted to satisfy requirements of the Michigan Permit to Install Nos. 44-16B and 246-07A, 40 CFR Part 63 Subpart ZZZZ, and 40 CFR Part 60 Subpart KKKK. Carbon monoxide (CO) destruction efficiency testing was performed on EURICE1-3 and EUENGINE1 across each catalyst. Nitrogen oxide (NO_x) concentration testing was performed on the exhaust of EUTURBINE1.

A summary of results of the emissions testing are highlighted below:

Emissions Test Results
Willow Run Compressor Station – EURICE1-3, EUENGINE1, EUTURBINE1
Ypsilanti, Michigan
June 1-8, 2020

Emission Unit	Load (% of rated bhp)	CO_{in} (ppmvd at 15% O_2)	CO_{out} (ppmvd at 15% O_2)	CO DE (%)	NO_x (ppmvd at 15% O_2)
EURICE1	97%	163.0	0.4	99.7%	-
EURICE2	96%	140.7	0.6	99.6%	-
EURICE3	98%	158.9	0.4	99.7%	-
EUENGINE1	95%	260.1	3.2	98.8%	-
EUTURBINE1		-	-	-	10.0
Permit Limit	-	-	-	>93%	15

DTE

1.0 INTRODUCTION

DTE Energy's Environmental Management and Resources (EM&R), Field Services Group, performed emissions testing at the DTE-Gas Willow Compressor Station, located in Ypsilanti, Michigan. The fieldwork, performed June 1-8, 2020 was conducted to satisfy requirements of the Michigan Permit to Install Nos. 44-16B and 246-07A, 40 CFR Part 63 Subpart ZZZZ, and 40 CFR Part 60 Subpart KKKK. Carbon monoxide (CO) destruction efficiency testing was performed on EURICE1-3 and EUENGINE1 across each catalyst. Nitrogen oxide (NO_x) concentration testing was performed on the exhaust of EUTURBINE1.

Testing was performed pursuant to Title 40, *Code of Federal Regulations*, Part 60, Appendix A (40 CFR §60 App. A), Methods 3A, 7E, and 10.

The fieldwork was performed in accordance with EPA Reference Methods and EMR's Intent to Test[1], Test Plan Submittal. The following EM&R Field Services personnel participated in the testing program: Mr. Mark Grigereit, Principal Engineer, Mr. Thomas Snyder and Mr. Jason Logan, Environmental Specialists. Mr. Grigereit was the project leader. Ms. Regina Angellotti with the Air Quality Division of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) witnessed portions of the testing.

2.0 SOURCE DESCRIPTION

The Willow Run Compressor Station located at 3020 East Michigan Avenue, Ypsilanti, Michigan, employs the use of four (4) non-emergency natural gas-fired reciprocating internal combustion engines (RICE) and one (1) simple-cycle compressor turbine. The engines are identified as EURICE1-3 in PTI 44-16B (flexible group FGENGINES and FGENGMACT4Z) and EUENGINE1 in PTI 246-07A (flexible group FGENGMACT4Z). The compressor turbine is identified as EUTURBINE1 in PTI 44-16B. EURICE1 and EURICE2 are rated at 2,500 HP, EURICE3 is rated at 5,000 HP, EUENGINE1 is rated at 4,735 HP, and EUTURBINE1 is rated at 7,770 HP. The units generate line pressure assisting the transmission of natural gas into and out of the gas storage field as well as to and from the pipeline transmission system.

The emissions from each engine are exhausted through a catalyst bed and to the atmosphere through individual exhaust stacks. The composition of the emissions from the engine depends both upon the speed of the engine and the torque delivered to the compressor. Ambient atmospheric conditions, as it affects the density of air, limit the speed and torque at which the engine can effectively operate.

[1] EGLE, Test Plan, Submitted February 28, 2020. (Attached-Appendix A)

DTE

The turbine is equipped with low-NO_x burners and exhausts directly to the atmosphere through a dedicated vertical exhaust stack.

Each unit operates on an as needed basis providing pipeline pressure. Each engine was tested at 100% (+/- 10%) rated capacity to meet PTI and National Emissions Standards for Hazardous Air Pollutants (NESHAP) testing requirements. The turbine was tested at a minimum of 75% rated capacity, or the highest load point if 75% is not achievable, in accordance with New Source Performance Standards (NSPS) requirements.

A schematic representation of the engine and turbine exhausts and sampling locations are presented in Figure 1.

3.0 SAMPLING AND ANALYTICAL PROCEDURES

DTE Energy obtained emissions measurements in accordance with procedures specified in the USEPA *Standards of Performance for New Stationary Sources.* The sampling and analytical methods used in the testing program are indicated in the table below

Sampling Method	Parameter	Analysis
USEPA Method 3A	Oxygen	Paramagnetic
USEPA Method 7E	Nitrogen Oxides	Chemiluminescent
USEPA Method 10	Carbon Monoxide	NDIR

3.1 OXYGEN (USEPA METHOD 3A)

3.1.1 Sampling Method

Oxygen (O_2) emissions were evaluated using USEPA Method 3A, "Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)". The analyzer utilizes a paramagnetic sensor.

The EPA Method 3A sampling system (Figure 3) consisted of the following:

(1) Stainless-steel sampling probe
(2) Heated Teflon™ sampling line
(3) Gas conditioner with particulate filter
(4) Flexible unheated Teflon™ sampling line
(5) Servomex 1400 O_2/CO_2 gas analyzer

(6) Appropriate USEPA Protocol 1 calibration gases
(7) Data Acquisition System

Two identical systems were used to measure O_2 on the inlet and the outlet of the catalyst. Only one system was used to measure O_2 on the turbine exhaust.

3.1.2 Sampling Train Calibration

The O_2 analyzer was calibrated according to procedures outlined in USEPA Methods 3A and 7E. Zero, span, and mid range calibration gases were introduced directly into the analyzer to verify the instruments linearity. A zero and upscale (mid) gas was then introduced through the entire sampling system to determine sampling system bias at the completion of each test.

3.1.3 Quality Control and Assurance

All sampling and analytical equipment was calibrated according to the guidelines referenced in Methods 3A and 7E. Calibration gases were EPA Protocol 1 gases and the concentrations were within the acceptable ranges (40-60% mid range and span) specified in Method 7E. Calibration gas certification sheets are located in Appendix C.

3.1.4 Data Reduction

Data collected during the emissions testing was recorded at 10-second intervals and averaged in 1-minute increments. O_2 emissions were recorded in percent (%). The 1-minute readings collected during the testing can be found in Appendix B.

3.2 NITROGEN OXIDES (USEPA METHOD 7E)

3.2.1 Sampling Method

Nitrogen oxides (NO_x) emissions were evaluated using USEPA Method 7E, "Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)". The NO_x analyzer utilizes a chemiluminescent detector. Triplicate 20-minute test runs were performed on the exhaust of EUTURBINE1.

The EPA Method 7E sampling system (Figure 3) consisted of the following:

(1) Stainless-steel sample probe
(2) Heated Teflon™ sampling line
(3) Gas conditioner with particulate filter
(4) Flexible unheated Teflon™ sampling line
(5) TECO 42i NO_x gas analyzer
(6) Appropriate USEPA Protocol 1 calibration gases
(7) Data Acquisition System.

3.2.2 Sampling Train Calibration

The NO_x sampling train was calibrated per procedures outlined in USEPA Method 7E. Zero, span, and mid-range calibration gases were introduced directly into the analyzer to verify the instruments linearity. A zero and upscale (mid) gas was then introduced through the entire sampling system to determine sampling system bias.

3.2.3 Quality Control and Assurance

All sampling and analytical equipment was calibrated per the guidelines referenced in Method 7E. Calibration gases were EPA Protocol 1 gases and the concentrations were within the acceptable ranges (40-60% mid-range and span). Calibration gas certification sheets are in Appendix C.

3.2.4 Data Reduction

Data collected during the emissions testing was recorded at 10-second intervals and averaged in 1-minute increments. NO_x emissions were recorded in parts per million by volume, dry (ppmvd). The 1-minute readings collected can be found in Appendix B.

Emissions readings on the turbine were reduced to parts by million by volume, dry, adjusted to 15% O_2 for comparison to emission limits.

3.3 CARBON MONOXIDE (USEPA METHOD 10)

3.3.1 Sampling Method

Carbon monoxide (CO) emissions were evaluated using USEPA Method 10, "Determination of Carbon Monoxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)". The CO analyzer utilizes an NDIR detector. Triplicate 60-minute tests were performed on the inlet and outlet of each engine catalyst.

The EPA Method 10 sampling system (Figure 3) consisted of the following:

(1) Stainless-steel sample probe
(2) Heated Teflon™ sampling line
(3) Gas conditioner with particulate filter
(4) Flexible unheated Teflon™ sampling line
(5) TECO 48i NDIR CO gas analyzer
(6) Appropriate USEPA Protocol 1 calibration gases
(7) Data Acquisition System.

Two identical systems were used to measure CO on the inlet and the outlet of each engine catalyst.

3.3.2 Sampling Train Calibration

The CO sampling train was calibrated per procedures outlined in USEPA Method 10. Zero, span, and mid range calibration gases were introduced directly into the analyzer to verify the instruments linearity. A zero and upscale (mid) gas was then introduced through the entire sampling system to determine sampling system bias.

3.3.3 Quality Control and Assurance

All sampling and analytical equipment was calibrated per the guidelines referenced in Method 10. Calibration gases were EPA Protocol 1 gases and the concentrations were within the acceptable ranges (40-60% mid range and span). Calibration gas certification sheets are located in Appendix C.

3.3.4 Data Reduction

Data collected during the emissions testing was recorded at 10-second intervals and averaged in 1-minute increments. The CO emissions were recorded in parts per million by volume, dry (ppmvd). The 1-minute readings collected can be found in Appendix B.

Emissions readings on the inlet and outlet of the engine catalysts were reduced to parts by million by volume, dry, adjusted to 15% O_2 in accordance with 40 CFR Part 63 Subpart ZZZZ. The outlet concentration was divided by the inlet concentration to calculate percent destruction efficiency.

4.0 OPERATING PARAMETERS

For each test period (Engines Only), operators took screenshots of the process collection software. Once at the beginning of a test, once in the middle, and once at the end of a test period. Process data includes fuel flow (scfh), fuel BTU content, catalyst pre and post temperature (°F), pressure drop across the catalyst ("H_2O), load (HP), and torque for the engine testing; and gas producer speed, fuel BTU content, fuel flow (scfh), load (HP), compressor discharge temperature, and compressor discharge pressure for the turbine testing.

Operating parameters collected for the turbine test program included the collection of turbine operating data during each test run. Parameters recorded included % Load (reported as Horse Power), gas producer speed, gross dry BTU, fuel feed rate, compressor discharge temperature and pressure.

Operational data is in Appendix D.

DTE

5.0 DISCUSSION OF RESULTS

The results of the CO DE testing for EURICE1-3 and EUENGINE1 are presented in Tables 1-4. The CO emissions on the inlet and outlet of the catalyst were reduced to ppmvd adjusted to 15% O_2. The outlet concentration was then divided by the inlet concentration to calculate percent destruction efficiency. The results of the NO_x emissions testing for EUTURBINE1 are presented in Table 5. Turbine NO_x emissions were reduced to ppmvd adjusted to 15% O_2.

The results of the testing indicate that EURICE1-3, EUENGINE1, and EUTURBINE1 meet the emissions limits established in Michigan Permit to Install Nos. 44-16A and 246-07A, 40 CFR Part 63 Subpart ZZZZ, and 40 CFR Part 60 Subpart KKKK, as appropriate.

DTE

6.0 CERTIFICATION STATEMENT

"I certify that I believe the information provided in this document is true, accurate, and complete. Results of testing are based on the good faith application of sound professional judgment, using techniques, factors, or standards approved by the Local, State, or Federal Governing body, or generally accepted in the trade."

Mark Grigereit, QSTI

This report prepared by:

Mr. Mark Grigereit, QSTI
Principal Engineer, Field Services Group
Environmental Management and Resources
DTE Energy

This report reviewed by:

Mr. Thomas Snyder
Environmental Specialist, Field Services Group
Environmental Management and Resources
DTE Energy

DTE

RESULTS TABLES

Results Table 1
Carbon Monoxide (CO) Emissions Testing Results
Unit 2300 (EURICE1)
DTE Energy, Willow Compressor Station
Ypsilanti, Michigan

Parameter	Run 1	Run 2	Run 3	Average
Sampling Date	06/03/20	06/03/20	06/03/20	
Sampling Start Time	7:51-8:51	9:07-10:07	10:20-11:20	
Gross Dry BTU	1060	1060	1060	1060
Load (%)	94.0	93.0	92.0	93.0
Speed (RPM)	1001.0	1001.0	1002.0	1001.3
Brake-HP	2,416	2,420	2,454	2430
Brake-HP (%)	97%	97%	98%	97%
Fuel Flow (100 scf/hr)	152.8	152.0	156.8	153.8
Heat Input Rate (MMBtu/Hr)	16.20	16.11	16.62	16.31
Average Inlet O_2 Content (%, dry)	11.4	11.4	11.4	11.4
Average Inlet O_2 Content (%, dry, corrected)[1]	11.2	11.2	11.2	11.2
Average Inlet CO Concentration (ppmv, dry)	278.3	272.7	262.2	271.0
Average Inlet CO Concentration (ppmv, dry, corrected)[1]	273.0	269.2	260.1	267.4
Average Inlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	166.3	164.1	158.5	163.0
Average Inlet CO Concentration (lb/MMBtu)	0.373	0.368	0.355	0.365
Average Inlet CO Emission Rate (lb/hr, dry)	6.04	5.93	5.91	5.96
CO Emission Rate (gram/BHP-Hr, dry)	**1.13**	**1.11**	**1.09**	**1.11**
Average Outlet O_2 Content (%, dry)	11.2	11.2	11.2	11.2
Average Outlet O_2 Content (%, dry, corrected)[1]	11.2	11.2	11.2	11.2
Average Outlet CO Concentration (ppmv, dry)	0.9	0.8	1.0	0.9
Average Outlet CO Concentration (ppmv, dry, corrected)[1]	0.7	0.7	0.8	0.7
Average Outlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	0.4	0.4	0.5	0.4
Average Outlet CO Concentration (lb/MMBtu)	0.001	0.001	0.001	0.001
Average Outlet CO Emission Rate (lb/hr, dry)	0.02	0.01	0.02	0.02
CO Emission Rate (gram/BHP-Hr, dry)	**0.003**	**0.003**	**0.003**	**0.003**
CO Destruction Efficiency	**99.7%**	**99.8%**	**99.7%**	**99.7%**

[1]corrected for analyzer drift as per USEPA Method 6C

O_2 : oxygen

CO : carbon monoxide

ppmv : parts per million on a volume-to-volume basis

lb/hr : pounds per hour

Results Table 2
Carbon Monoxide (CO) Emissions Testing Results
Unit 2200 (EURICE2)
DTE Energy, Willow Compressor Station
Ypsilanti, Michigan

Parameter	Run 1	Run 2	Run 3	Average
Sampling Date	06/02/20	06/02/20	06/02/20	
Sampling Start Time	12:04-13:04	13:16-14:16	14:26-15:29	
Gross Dry BTU	1060	1060	1060	1060
Load (%)	93.0	95.0	95.0	94.3
Speed (RPM)	1000.0	1000.0	998.0	999.3
Brake-HP	2,392	2,416	2,403	2404
Brake-HP (%)	96%	97%	96%	96%
Fuel Flow (100 scf/hr)	171.9	171.0	172.2	171.7
Heat Input Rate (MMBtu/Hr)	18.22	18.13	18.26	18.20
Average Inlet O_2 Content (%, dry)	11.0	11.0	11.0	11.0
Average Intlet O_2 Content (%, dry, corrected)[1]	11.0	11.0	11.1	11.1
Average Inlet CO Concentration (ppmv, dry)	230.7	229.3	227.7	229.2
Average Inlet CO Concentration (ppmv, dry, corrected)[1]	234.6	234.6	235.2	234.8
Average Inlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	140.4	140.5	141.2	140.7
Average Inlet CO Concentration (lb/MMBtu)	0.315	0.315	0.317	0.315
Average Inlet CO Emission Rate (lb/hr, dry)	5.74	5.71	5.78	5.74
CO Emission Rate (gram/BHP-Hr, dry)	**1.09**	**1.07**	**1.09**	**1.08**
Average Outlet O_2 Content (%, dry)	11.0	11.0	10.9	11.0
Average Outlet O_2 Content (%, dry, corrected)[1]	11.1	11.0	11.0	11.0
Average Outlet CO Concentration (ppmv, dry)	1.0	1.2	1.2	1.1
Average Outlet CO Concentration (ppmv, dry, corrected)[1]	0.8	1.0	1.0	0.9
Average Outlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	0.5	0.6	0.6	0.6
Average Outlet CO Concentration (lb/MMBtu)	0.001	0.001	0.001	0.001
Average Outlet CO Emission Rate (lb/hr, dry)	0.02	0.03	0.02	0.02
CO Emission Rate (gram/BHP-Hr, dry)	**0.004**	**0.005**	**0.004**	**0.004**
CO Destruction Efficiency	**99.7%**	**99.6%**	**99.6%**	**99.6%**

[1]corrected for analyzer drift as per USEPA Method 6C

O_2 : oxygen

CO : carbon monoxide

ppmv : parts per million on a volume-to-volume basis

lb/hr : pounds per hour

Results Table 3
Carbon Monoxide (CO) Emissions Testing Results
Unit 2100 (EURICE3)
DTE Energy, Willow Compressor Station
Ypsilanti, Michigan

Parameter	Run 1	Run 2	Run 3	Average
Sampling Date	06/02/20	06/02/20	06/02/20	
Sampling Start Time	8:30-9:30	9:39-10:39	10:48-11:48	
Gross Dry BTU	1060	1060	1060	1060
Load (%)	91.0	93.0	90.0	91.3
Speed (RPM)	999.0	999.0	999.0	999.0
Brake-HP	4,925	4,962	4,862	4916
Brake-HP (%)	99%	99%	97%	98%
Fuel Flow (100 scf/hr)	337.3	340.5	335.1	337.7
Heat Input Rate (MMBtu/Hr)	35.75	36.10	35.52	35.79
Average Inlet O_2 Content (%, dry)	11.0	10.9	10.9	11.0
Average Intlet O_2 Content (%, dry, corrected)[1]	11.0	11.0	11.0	11.0
Average Inlet CO Concentration (ppmv, dry)	267.2	267.1	259.4	264.6
Average Inlet CO Concentration (ppmv, dry, corrected)[1]	268.1	268.9	262.8	266.6
Average Inlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	160.0	160.1	156.6	158.9
Average Inlet CO Concentration (lb/MMBtu)	0.359	0.359	0.351	0.356
Average Inlet CO Emission Rate (lb/hr, dry)	12.83	12.96	12.47	12.75
CO Emission Rate (gram/BHP-Hr, dry)	**1.18**	**1.18**	**1.16**	**1.18**
Average Outlet O_2 Content (%, dry)	11.0	10.9	10.9	10.9
Average Outlet O_2 Content (%, dry, corrected)[1]	11.0	11.0	11.0	11.0
Average Outlet CO Concentration (ppmv, dry)	0.7	0.9	0.8	0.8
Average Outlet CO Concentration (ppmv, dry, corrected)[1]	0.6	0.9	0.7	0.7
Average Outlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	0.4	0.5	0.4	0.4
Average Outlet CO Concentration (lb/MMBtu)	0.001	0.001	0.001	0.001
Average Outlet CO Emission Rate (lb/hr, dry)	0.03	0.04	0.03	0.03
CO Emission Rate (gram/BHP-Hr, dry)	**0.003**	**0.004**	**0.003**	**0.003**
CO Destruction Efficiency	**99.8%**	**99.7%**	**99.7%**	**99.7%**

[1]corrected for analyzer drift as per USEPA Method 6C

O_2 : oxygen

CO : carbon monoxide

ppmv : parts per million on a volume-to-volume basis

lb/hr : pounds per hour

Results Table 4
Carbon Monoxide (CO) Emissions Testing Results
Unit 1100 (EUENGINE1)
DTE Energy, Willow Compressor Station
Ypsilanti, Michigan

Parameter	Run 1	Run 2	Run 3	Average
Sampling Date	06/01/20	06/01/20	06/01/20	
Sampling Start Time	11:00-13:32	13:27-14:27	14:36-15:36	
Gross Dry BTU	1060	1060	1060	1060
Load (%)	94.0	97.0	96.0	95.7
Speed (RPM)	996.0	998.0	997.0	997.0
Brake-HP	4,421	4,571	4,546	4513
Brake-HP (%)	93%	97%	96%	95%
Fuel Flow (100 scf/hr)	276.7	288.8	284.6	283.4
Heat Input Rate (MMBtu/Hr)	29.33	30.61	30.17	30.04
Average Inlet O_2 Content (%, dry)	12.1	11.8	11.8	11.9
Average Intlet O_2 Content (%, dry, corrected)[1]	12.1	11.9	11.9	11.9
Average Inlet CO Concentration (ppmv, dry)	389.1	394.8	394.3	392.7
Average Inlet CO Concentration (ppmv, dry, corrected)[1]	389.8	395.9	398.1	394.6
Average Inlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	261.5	258.4	260.2	260.1
Average Inlet CO Concentration (lb/MMBtu)	0.586	0.579	0.584	0.583
Average Inlet CO Emission Rate (lb/hr, dry)	17.20	17.74	17.61	17.52
CO Emission Rate (gram/BHP-Hr, dry)	**1.77**	**1.76**	**1.76**	**1.76**
Average Outlet O_2 Content (%, dry)	11.9	11.7	11.6	11.7
Average Outlet O_2 Content (%, dry, corrected)[1]	12.1	11.9	11.9	11.9
Average Outlet CO Concentration (ppmv, dry)	4.8	5.0	5.2	5.0
Average Outlet CO Concentration (ppmv, dry, corrected)[1]	4.7	4.8	5.0	4.9
Average Outlet CO Concentration (ppmv, dry, corrected @ 15%O_2)[2]	3.1	3.2	3.3	3.2
Average Outlet CO Concentration (lb/MMBtu)	0.007	0.007	0.007	0.007
Average Outlet CO Emission Rate (lb/hr, dry)	0.21	0.22	0.22	0.22
CO Emission Rate (gram/BHP-Hr, dry)	**0.02**	**0.02**	**0.02**	**0.02**
CO Destruction Efficiency	**98.8%**	**98.8%**	**98.7%**	**98.8%**

[1]corrected for analyzer drift as per USEPA Method 6C

O_2 : oxygen

CO : carbon monoxide

ppmv : parts per million on a volume-to-volume basis

lb/hr : pounds per hour

Results Table 5
Oxides of Nitrogen (NOx) Emissions Testing Results
Turbine 1 (EUTURBINE1)
DTE Energy, Willow Compressor Station
Ypsilanti, Michigan

Parameter	Run 1	Run 2	Run 3	Average
Sampling Date	06/08/20	06/08/20	06/08/20	
Sampling Start Time	12:01-12:21	12:30-12:50	12:58-13:18	
Gross Dry BTU	1060	1060	1060	1060
Gas Producer Speed (%)	99.8	99.8	99.8	99.8
Fuel Flow (MMscfh)	24.1	24.0	24.0	
Brake-HP	6,565	6,631	6,555	6584
Brake-HP (%)	84%	85%	84%	85%
Average Outlet O2 Content (%, dry)	15.2	15.2	15.2	15.2
Average Outlet O2 Content (%, dry, Corrected)1	15.3	15.3	15.4	15.3
Average Inlet NOx Concentration (ppmv, dry)	9.2	8.8	8.9	9.0
Average Inlet NOx Concentration (ppmv, dry, Corrected)[1]	9.7	9.3	9.5	9.5
Average Inlet NOx Concentration (ppmv, dry, Corrected @ 15%O2)	10.1	9.8	10.1	10.0

1NOxrrected for analyzer drift as per USEPA Method 6C

O_2 : oxygen

NOx : Oxides of Nitrogen

ppmv : parts per million on a volume-to-volume basis

DTE

FIGURES

Figure 1 – Sampling Locations
Engines 2100-2300
Willow Compressor Station
June 1-8, 2020

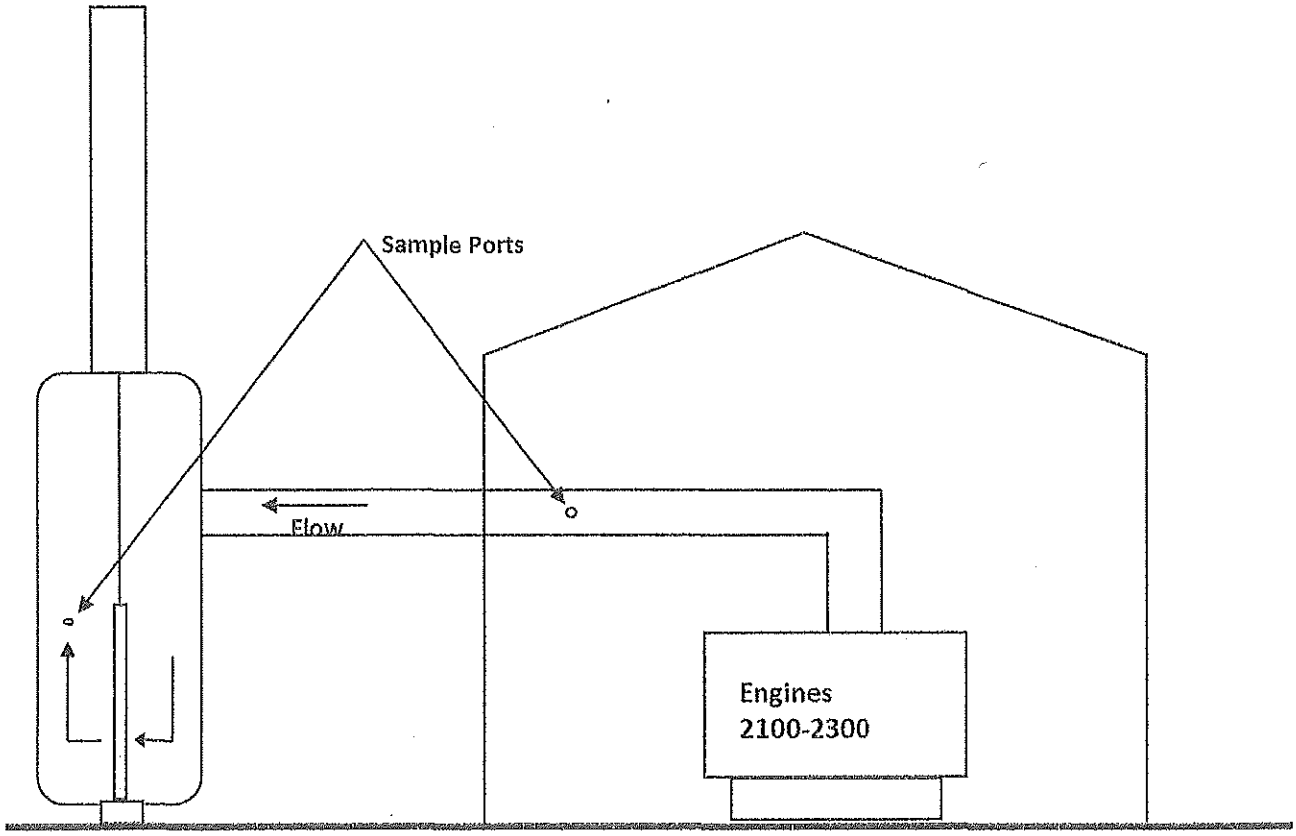
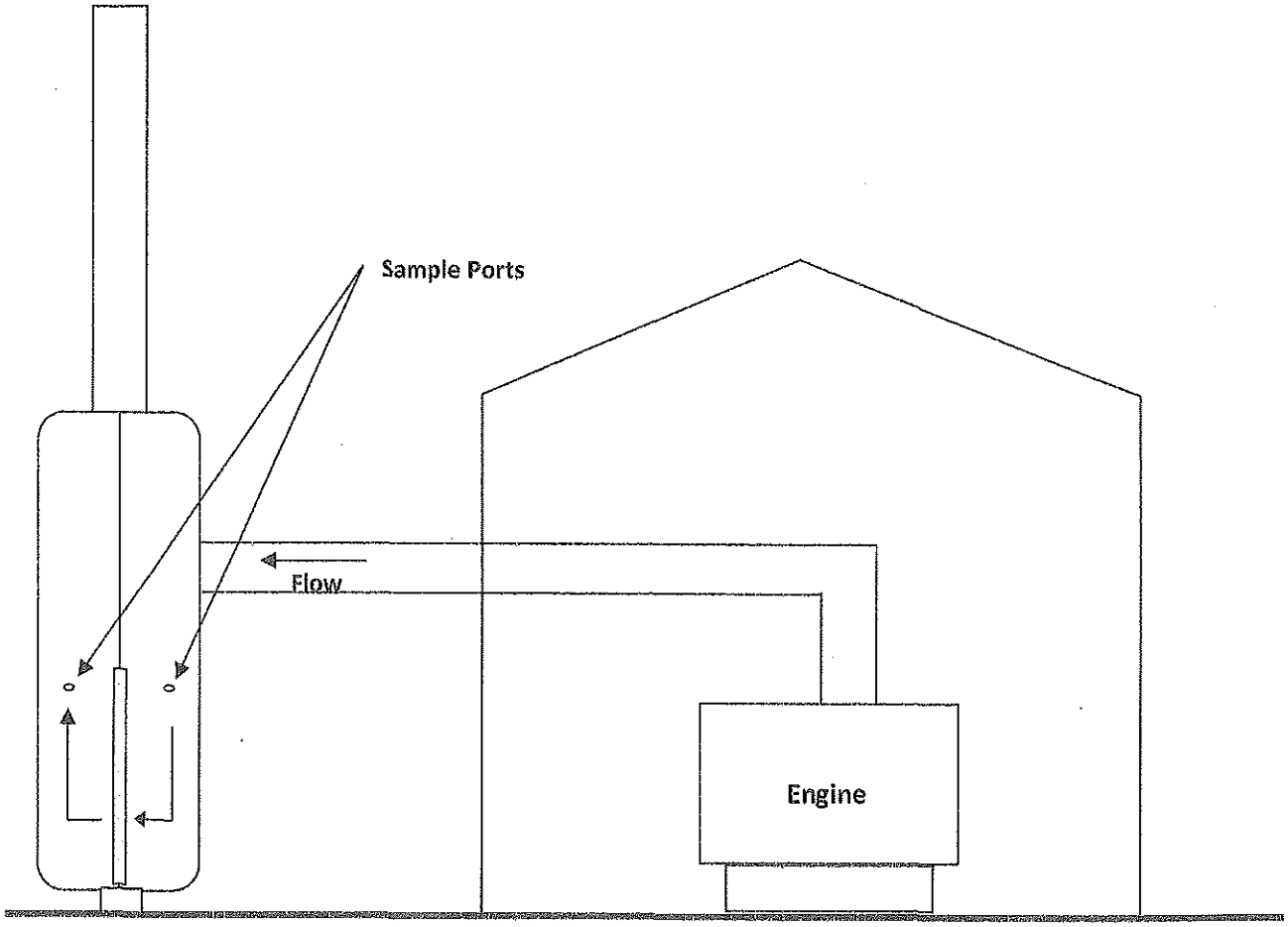
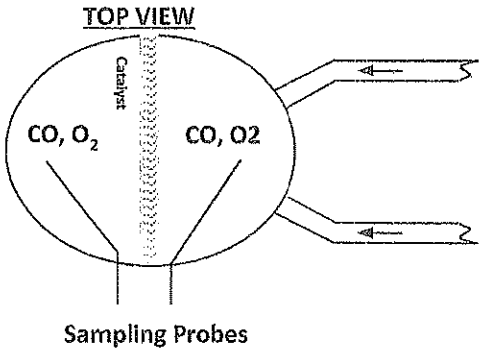


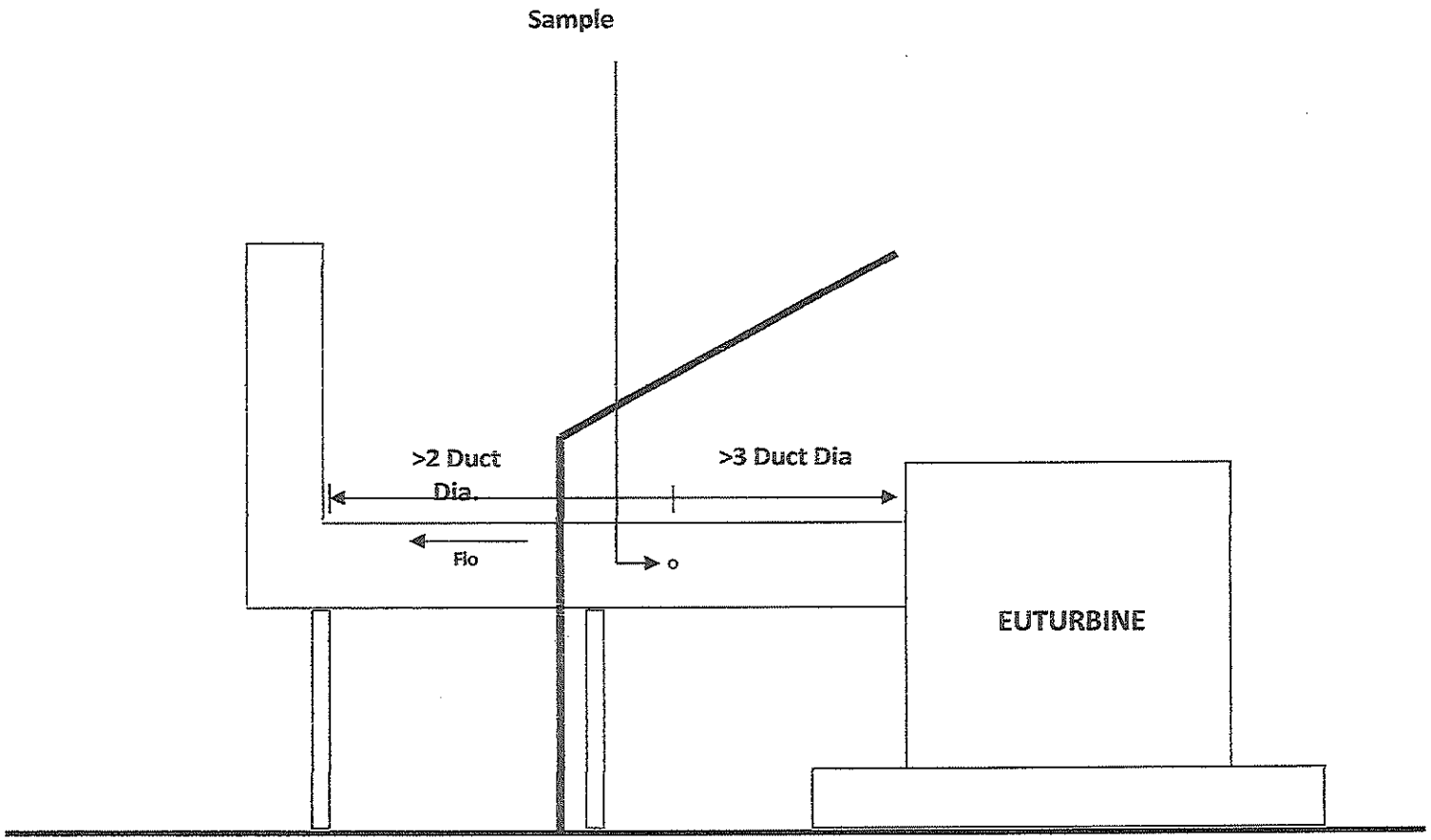
Figure 2 – Sampling Location
Engine 1100
Willow Compressor Station
June 1-8, 2020





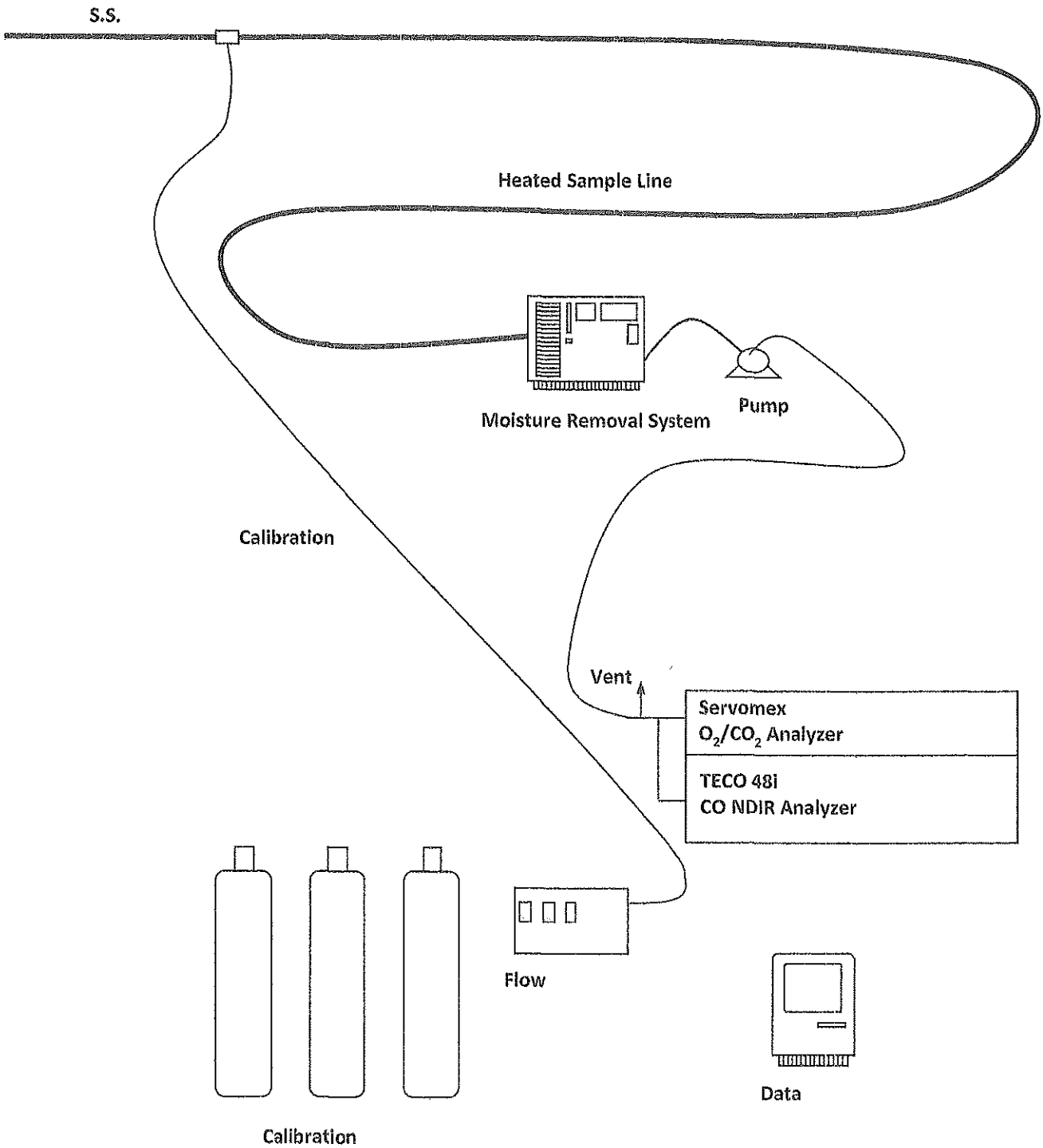
DTE

Figure 3 – Sampling Location
Turbine 1
Willow Run Compressor Station
June 1-8, 2020



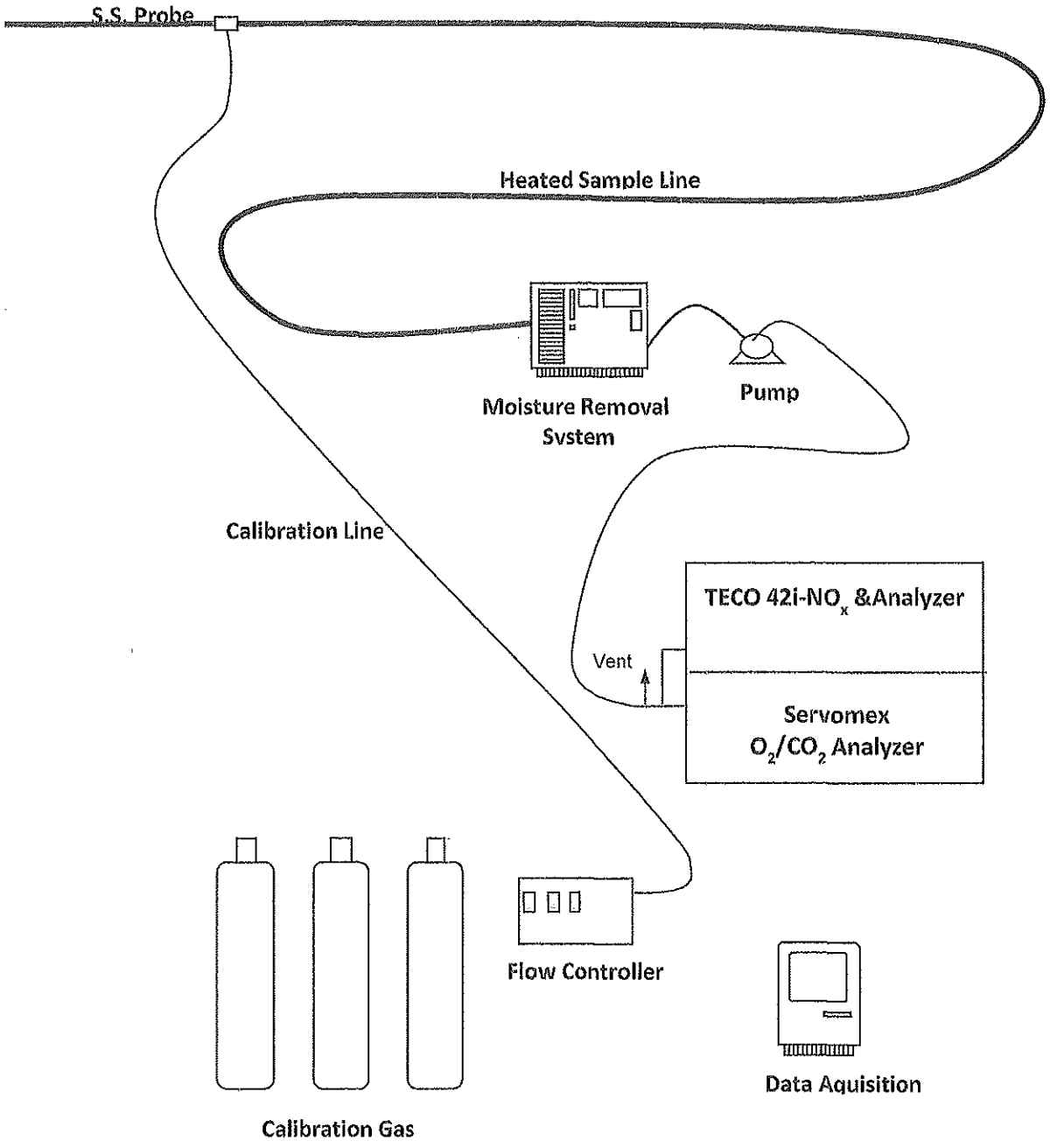
DTE

Figure 4 – EPA Methods 3A/10
Willow Compressor Station
June 1-8, 2020



DTE

Figure 5 – EPA Methods 3A & 7E
Willow Run Compressor Station
June 1-8, 2020



DTE