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COMPLIANCE STACK EMISSION TEST REPORT

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ELPO DIP TANK AND CURING OVEN (EU-ECOAT)

Determination of Total Gaseous Organics Destruction Efficiencies

Utilizing US EPA Method 1, 2, 4, and 25A

Test Date(s): April 16-17, 2019
Facility ID: B1606
Facility Name: GM Flint Assembly
Source Location: Flint, Michigan
Permit: MDEQ Renewable Operating Permit No. MI-ROP-B1606-2014b

Prepared For:

General Motors, LLC
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TO ASTM D7036 ONLY
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REVIEW AND CERTIFICATION

The results of the Compliance Test conducted on April 16-17, 2019 are a product of the application of the United States Environmental Protection Agency (US EPA) Stationary Source Sampling Methods listed in 40 CFR Part 60, Appendix A, that were in effect at the time of this test.

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature: _____ Date: 5/20/2019

Name: Steven Smith Title: Field Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature: _____ Date: 5-21-19

Name: Randal Tysar Title: District Manager

1.0 INTRODUCTION

1.1 SUMMARY OF TEST PROGRAM

General Motors, LLC contracted Montrose Air Quality Services, LLC (Montrose) of Detroit, Michigan, to conduct compliance stack emission testing for the ELPO Dip Tank and Curing Oven (EU-ECOAT) located at the GM Flint Assembly facility (State Regristration No. B1606) in Flint, Michigan. Testing was performed to satisfy the emissions testing requirements pursuant to the Michigan Department of Environmental Quality (MDEQ) Renewable Operating Permit No. MI-ROP-B1606-2014b. The testing was performed on April 16-17, 2019.

Simultaneous sampling was performed at the ELPO regenerative thermal oxidizer (RTO) No. 1 Inlet Duct and ELPO RTO No. 1 Exhaust Stack to determine the total gaseous organic (TGO) destruction efficiency (DE) of ELPO RTO No. 1. Simultaneous sampling was also performed at the ELPO RTO No. 2 Inlet Duct and ELPO RTO No. 2 Exhaust Stack to determine the TGO DE of ELPO RTO No. 2. Testing was conducted during routine operating conditions. During this test, emissions from the ELPO Dip Tank and a portion of the Curing Oven were controlled by RTO No. 1 with emissions from the remaining portion of the Curing Oven controlled by RTO No. 2.

The test methods that were conducted during this test were US EPA Method 1, 2, 4, and 25A.

1.2 KEY PERSONNEL

The key personnel who coordinated this test program (and their phone numbers) were:

- Alexandra Thibeault, CHMM, Senior Environmental Engineer, GM Flint Assembly, 810-577-9003
- Karen Carlson, GM Sustainable Workplaces, 517-204-9011
- Mark Dziadosz, Environmental Quality Analyst, MDEQ-AQD, 586-753-3745
- Robert Byrnes, EES 13, MDEQ, 517-275-0439
- Steven Smith, Field Project Manager, Montrose, 248-548-8070

2.0 SUMMARY AND DISCUSSION OF TEST RESULTS

2.1 OBJECTIVES AND TEST MATRIX

The purpose of this test was to determine the TGO DEs of the RTOs associated with the ELPO Dip Tank and Curing Oven during routine operating conditions. Testing was performed to satisfy the emissions testing requirements pursuant to the MDEQ Renewable Operating Permit No. MI-ROP-B1606-2014b.

The specific test objectives for this test were as follows:

- Simultaneously measure the concentrations of TGO at the ELPO RTO No. 1 Inlet Duct and ELPO RTO No. 1 Exhaust Stack.
- Measure the concentration of methane (CH_4) at the ELPO RTO No. 1 Exhaust Stack.
- Simultaneously measure the actual and dry standard volumetric flow rate of the gas streams at the ELPO RTO No. 1 Inlet Duct and ELPO RTO No. 1 Exhaust Stack.
- Utilize the above variables to determine the TGO DE of ELPO RTO No. 1 during routine operating conditions.
- Simultaneously measure the concentrations of TGO at the ELPO RTO No. 2 Inlet Duct and ELPO RTO No. 2 Exhaust Stack.
- Measure the concentration of methane at the ELPO RTO No. 2 Exhaust Stack.
- Simultaneously measure the actual and dry standard volumetric flow rate of the gas streams at the ELPO RTO No. 2 Inlet Duct and ELPO RTO No. 2 Exhaust Stack.
- Utilize the above variables to determine the TGO DE of ELPO RTO No. 2 during routine operating conditions.

Table 2-1 presents the sampling matrix log for this test.

2.2 FIELD TEST CHANGES AND PROBLEMS

No field test changes or problems occurred during the performance of this test that would bias the accuracy of the results of this test.

2.3 PRESENTATION OF RESULTS

During each run, single sampling trains were utilized at the ELPO RTO Inlet Ducts while two sampling trains were utilized at the ELPO RTO Exhaust Stacks to determine the TGO DEs of the RTOs associated with the ELPO Dip Tank and Curing Oven.

At the RTO Inlet Ducts, the single sampling train measured the duct gas concentration of TGO. At the RTO Exhaust Stacks, one sampling train measured the stack gas concentration of TGO and methane while a second sampling train measured the stack gas moisture content. At both the inlets and exhausts, the gas stream volumetric flow rate was measured during each concentration run.

Table 2-2 displays the TGO DE of ELPO RTO No. 1 and the methane-corrected TGO emissions measured at the RTO Exhaust Stack during routine operating conditions. The methane concentration at the inlet was presumed to be 0 ppm.

Table 2-3 displays the TGO DE of ELPO RTO No. 2 and the methane-corrected TGO emissions measured at the RTO Exhaust Stack during routine operating conditions. The methane concentration at the inlet was presumed to be 0 ppm.

A dry molecular weight value of 29.0 g/g-mole was utilized at all ELPO RTO No. 1 and ELPO RTO No. 2 sampling locations.

The graphs that present the raw, uncorrected concentration data measured in the field by the US EPA Method 25A sampling systems at the ELPO RTO No. 1 and ELPO RTO No. 2 sampling locations are located in the Field Data section of the Appendix.

TABLE 2-1
SAMPLING MATRIX OF TEST METHODS UTILIZED

Date	Run No.	Sampling Location	US EPA METHODS 1/2 (Flow) Sampling Time / Duration (min)	US EPA METHOD 4 ($\%H_2O$) Sampling Time / Duration (min)	US EPA METHOD 25A (TGO) Sampling Time / Duration (min)
4/16/2019	1	ELPO RTO No. 1 Inlet Duct	8:10 - 8:15 / 5	- - -	7:25 - 8:25 / 60
4/16/2019	2	ELPO RTO No. 1 Inlet Duct	10:44 - 10:49 / 5	- - -	9:40 - 10:58 / 60
4/16/2019	3	ELPO RTO No. 1 Inlet Duct	12:10 - 12:15 / 5	- - -	11:20 - 12:30 / 60
4/16/2019	1	ELPO RTO No. 1 Exhaust Stack	7:40 - 7:45 / 5	7:29 - 7:59 / 30	7:25 - 8:25 / 60
4/16/2019	2	ELPO RTO No. 1 Exhaust Stack	10:00 - 10:05 / 5	9:57 - 10:27 / 30	9:40 - 10:58 / 60
4/16/2019	3	ELPO RTO No. 1 Exhaust Stack	11:35 - 11:40 / 5	11:33 - 12:03 / 30	11:20 - 12:30 / 60
4/17/2019	1	ELPO RTO No. 2 Inlet Duct	8:30 - 8:35 / 5	- - -	7:35 - 9:00 / 60
4/17/2019	2	ELPO RTO No. 2 Inlet Duct	10:05 - 10:10 / 5	- - -	9:15 - 10:15 / 60
4/17/2019	3	ELPO RTO No. 2 Inlet Duct	11:35 - 11:40 / 5	- - -	10:40 - 12:15 / 60
4/17/2019	1	ELPO RTO No. 2 Exhaust Stack	7:45 - 7:50 / 5	7:40 - 8:10 / 30	7:35 - 9:00 / 60
4/17/2019	2	ELPO RTO No. 2 Exhaust Stack	9:30 - 9:35 / 5	9:27 - 9:57 / 30	9:15 - 10:15 / 60
4/17/2019	3	ELPO RTO No. 2 Exhaust Stack	10:55 - 11:00 / 5	10:52 - 11:55 / 30	10:40 - 12:15 / 60

All times are Eastern Daylight Time.

TABLE 2-2
EMISSION RESULTS

Parameter	ELPO RTO No. 1 Inlet Duct				ELPO RTO No. 1 Exhaust Stack			
	Run 1	Run 2	Run 3	Average	Run 1	Run 2	Run 3	Average
TGO Destruction Efficiency (%)	-	-	-	-	**96.7**	**96.7**	**96.8**	**96.7**
Methane Corrected TGO Emissions (lb/hr as propane)*	11.2	13.4	12.9	12.5	0.33	0.38	0.37	0.36
TGO Emissions (lb/hr as propane)	11.2	13.4	12.9	12.5	0.37	0.44	0.42	0.41
Methane Corrected TGO Concentration (ppmvw as propane)*	143.8	170.7	164.5	159.7	4.16	4.72	4.69	4.52
TGO Concentration (ppmvw as propane)	143.8	170.7	164.5	159.7	4.60	5.55	5.26	5.14
Methane Concentration (ppmvw as propane)*	-	-	-	-	0.45	0.83	0.56	0.61
Stack Gas Average Flow Rate (acfm)	17,868	18,017	18,088	17,991	20,057	20,061	19,928	20,015
Stack Gas Average Flow Rate (scfm)	11,321	11,408	11,438	11,389	11,643	11,625	11,549	11,606
Stack Gas Average Flow Rate (dscfm)	10,630	10,773	10,800	10,734	10,933	10,977	10,904	10,938
Stack Gas Average Velocity (fpm)	4,332	4,368	4,385	4,362	3,181	3,182	3,161	3,175
Stack Gas Average Static Pressure (in-H_2O)	-1.61	-1.61	-1.61	-1.61	-0.55	-0.55	-0.55	-0.55
Stack Gas Average Temperature (°F)	353	353	354	353	429	430	429	429
Stack Gas Percent by Volume Moisture (%H_2O)	6.10	5.57	5.58	5.75	6.10	5.57	5.58	5.75
Measured Stack Inner Diameter (in)	27.5				34.0			

* Methane concentration at the inlet was presumed to be 0 ppm. See Section 2.3 for details

TABLE 2-3
EMISSION RESULTS

Parameter	ELPO RTO No. 2 Inlet Duct				ELPO RTO No. 2 Exhaust Stack			
	Run 1	Run 2	Run 3	Average	Run 1	Run 2	Run 3	Average
TGO Destruction Efficiency (%)	-	-	-	-	**96.3**	**96.2**	**95.9**	**96.1**
Methane Corrected TGO Emissions (lb/hr as propane)*	8.42	8.27	8.37	8.35	0.29	0.29	0.32	0.30
TGO Emissions (lb/hr as propane)	8.42	8.27	8.37	8.35	0.31	0.31	0.34	0.32
Methane Corrected TGO Concentration (ppmvw as propane)*	99.6	98.2	99.1	99.0	3.50	3.43	3.98	3.64
TGO Concentration (ppmvw as propane)	99.6	98.2	99.1	99.0	3.81	3.75	4.23	3.93
Methane Concentration (ppmvw as propane)*	-	-	-	-	0.31	0.32	0.24	0.29
Stack Gas Average Flow Rate (acfm)	19,253	19,163	19,264	19,227	20,436	20,704	20,320	20,487
Stack Gas Average Flow Rate (scfm)	12,310	12,266	12,301	12,293	11,931	12,121	11,879	11,977
Stack Gas Average Flow Rate (dscfm)	11,838	11,819	11,854	11,837	11,474	11,679	11,447	11,533
Stack Gas Average Velocity (fpm)	4,668	4,646	4,670	4,661	3,241	3,284	3,223	3,249
Stack Gas Average Static Pressure (in-H_2O)	-1.53	-1.53	-1.53	-1.53	-0.73	-0.73	-0.73	-0.73
Stack Gas Average Temperature (°F)	346	346	347	347	424	422	422	423
Stack Gas Percent by Volume Moisture (%H_2O)	3.83	3.64	3.64	3.71	3.83	3.64	3.64	3.71
Measured Stack Inner Diameter (in)	27.5				34.0			

* Methane concentration at the inlet was presumed to be 0 ppm. See Section 2.3 for details

3.0 PLANT AND SAMPLING LOCATION DESCRIPTIONS

3.1 PROCESS DESCRIPTION AND OPERATION

The GM Flint Assembly facility operates a paint shop for the surface coating of light-duty automotive vehicles including Chevy Silverado and GMC Sierra crew cab 2500 and 3500 pickup trucks. The paint shop is equipped with an ELPO Dip Tank and Curing Oven. The ELPO Dip Tank and Curing Oven were in operation for this test event.

Figure 3-1 depicts the process and sampling location schematic.

3.2 CONTROL EQUIPMENT DESCRIPTION

During this test, emissions from the ELPO Dip Tank and the heating section of the ELPO Curing Oven were controlled by RTO No. 1 while emissions from the curing section of the ELPO Curing Oven were controlled by RTO No. 2.

3.3 SAMPLING LOCATION(S)

3.3.1 ELPO RTO No. 1 Inlet Duct

The ELPO RTO No. 1 Inlet Duct had a measured inner diameter of 27.5-inches and was oriented in the horizontal plane. Two sampling ports were located 90° apart from one another at a location that met US EPA Method 1, Section 11.1.1 criteria. Prior to emissions sampling the duct was traversed to verify the absence of cyclonic flow. An average yaw angle of 1.6° was measured. Therefore, the sampling location also met US EPA Method 1, Section 11.4.2 criteria. During emissions sampling, the duct was traversed for duct gas volumetric flow rate. A single point, located within the central 10% of the duct cross-sectional area, was utilized for TGO concentration determination.

3.3.2 ELPO RTO No. 1 Exhaust Stack

The ELPO RTO No. 1 Exhaust Stack had a measured inner diameter of 34.0-inches and was oriented in the vertical plane. Two sampling ports were located 90° apart from one another at a location that met US EPA Method 1, Section 11.1.1 criteria. Prior to emissions sampling, the stack was traversed to verify the absence of cyclonic flow. An average yaw angle of 0.6° was measured. Therefore, the sampling location also met US EPA Method 1, Section 11.4.2 criteria. During emissions sampling the stack was traversed for stack gas volumetric flow rate. A single point, located within the central 10% of the stack cross-sectional area, was utilized for TGO and methane concentration determinations. A second point was utilized to determine stack gas moisture content.

3.3.3 ELPO RTO No. 2 Inlet Duct

The ELPO RTO No. 2 Inlet Duct had a measured inner diameter of 27.5-inches and was oriented in the horizontal plane. Two sampling ports were located 90° apart from one another at a location that met US EPA Method 1, Section 11.1.1 criteria. Prior to emissions sampling the duct was traversed to verify the absence of cyclonic flow. An average yaw angle of 2.3° was measured. Therefore, the sampling location also met US EPA Method 1, Section 11.4.2 criteria. During emissions sampling, the duct was traversed for duct gas volumetric flow rate. A single point, located within the central 10% of the duct cross-sectional area, was utilized for TGO concentration determination.

3.3.4 ELPO RTO No. 2 Exhaust Stack

The ELPO RTO No. 2 Exhaust Stack had a measured inner diameter of 34.0-inches and was oriented in the vertical plane. Two sampling ports were located 90° apart from one another at a location that met US EPA Method 1, Section 11.1.1 criteria. Prior to emissions sampling, the stack was traversed to verify the absence of cyclonic flow. An average yaw angle of 3.4° was measured. Therefore, the sampling location also met US EPA Method 1, Section 11.4.2 criteria. During emissions sampling the stack was traversed for stack gas volumetric flow rate. A single point, located within the central 10% of the stack cross-sectional area, was utilized for TGO and methane concentration determinations. A second point was utilized to determine stack gas moisture content.

Figures 3-2 to 3-5 schematically illustrate the traverse point and sample port locations utilized.

3.4 PROCESS SAMPLING LOCATION(S)

The US EPA Reference Test Methods performed did not specifically require that process samples were to be taken during the performance of this testing event. It is in the best knowledge of Montrose that no process samples were obtained and therefore no process sampling location was identified in this report.

FIGURE 3-1
ELPO DIP TANK AND CURING OVEN PROCESS AND SAMPLING LOCATION SCHEMATIC

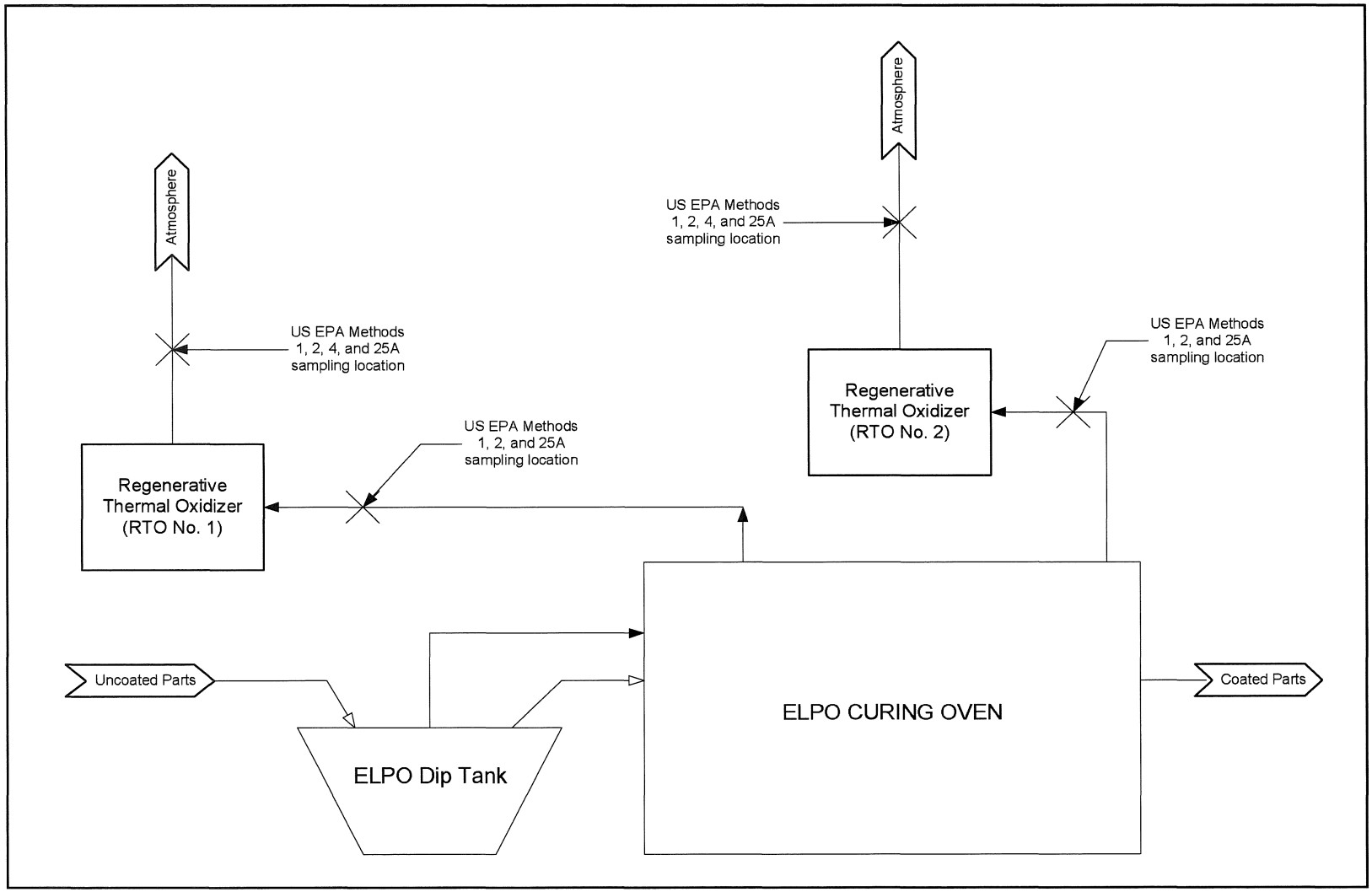
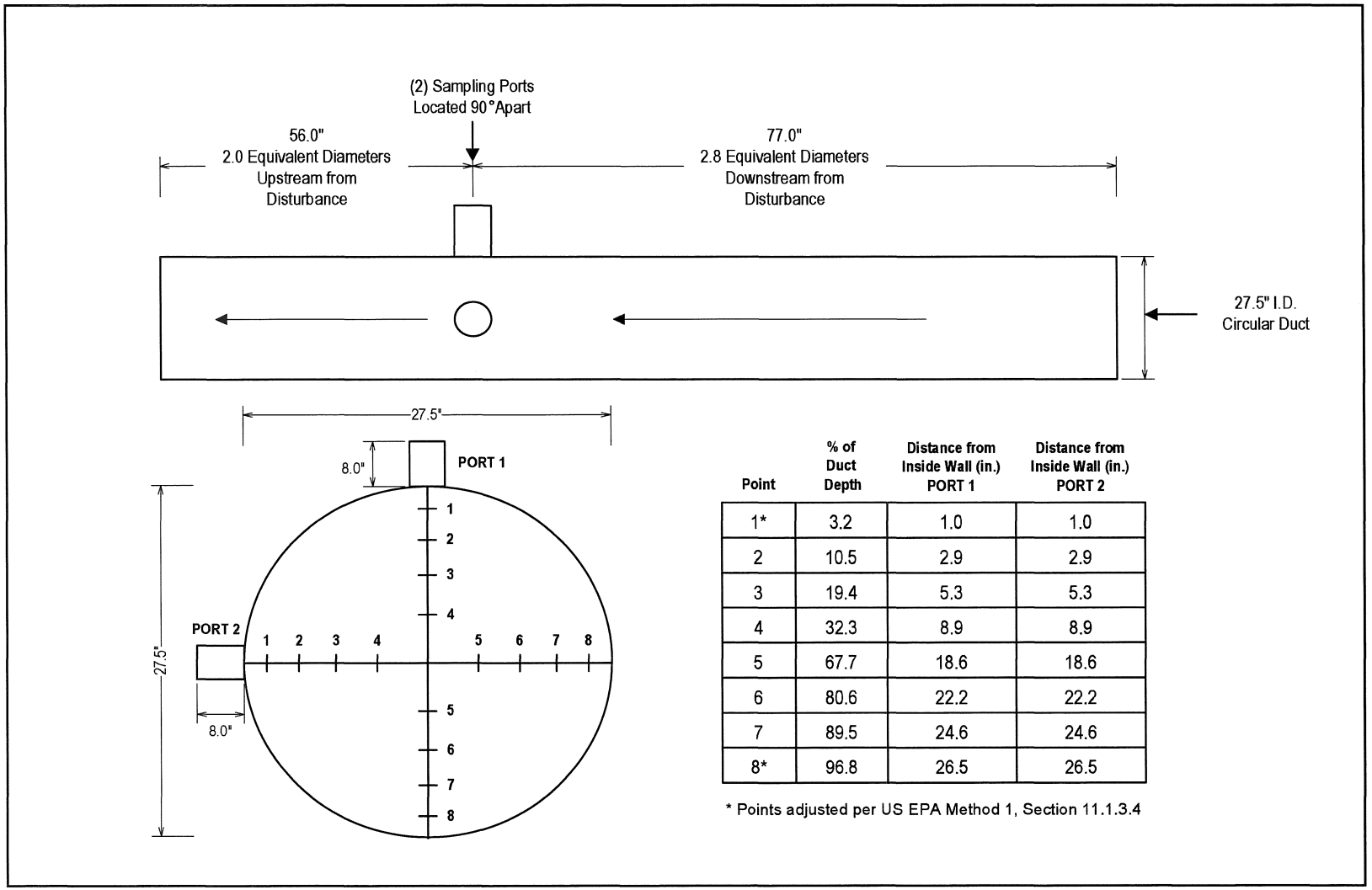


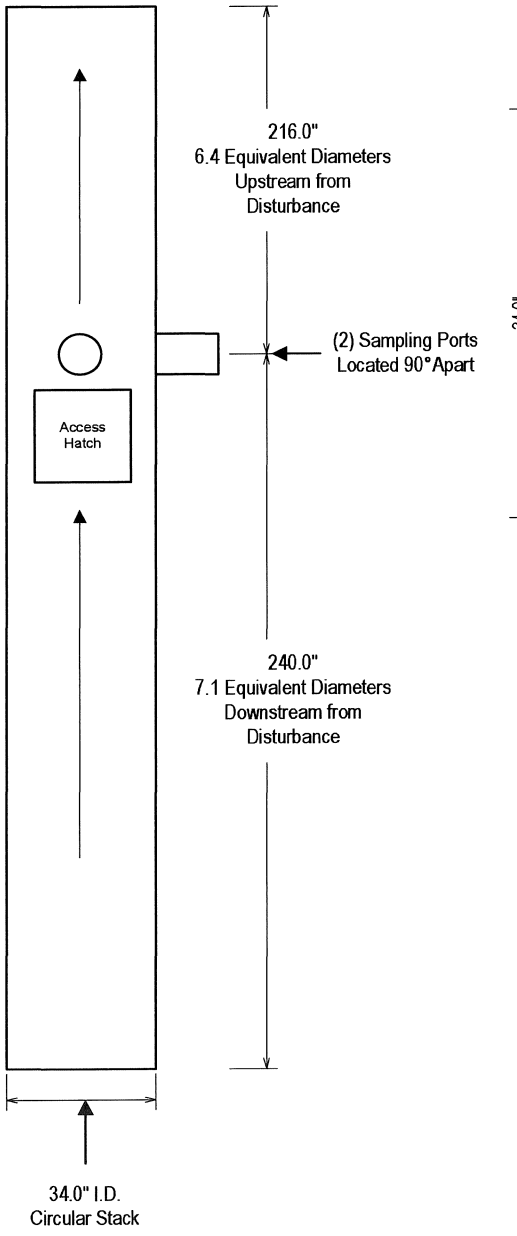
FIGURE 3-2
ELPO RTO No. 1 INLET TRAVERSE POINT LOCATION DRAWING

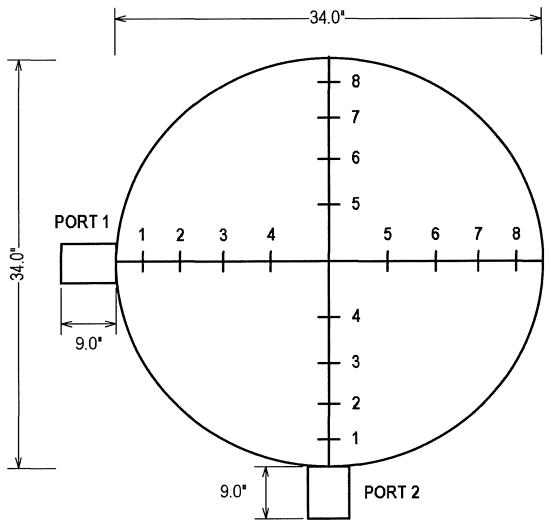


Point	% of Duct Depth	Distance from Inside Wall (in.) PORT 1	Distance from Inside Wall (in.) PORT 2
1*	3.2	1.0	1.0
2	10.5	2.9	2.9
3	19.4	5.3	5.3
4	32.3	8.9	8.9
5	67.7	18.6	18.6
6	80.6	22.2	22.2
7	89.5	24.6	24.6
8*	96.8	26.5	26.5

* Points adjusted per US EPA Method 1, Section 11.1.3.4

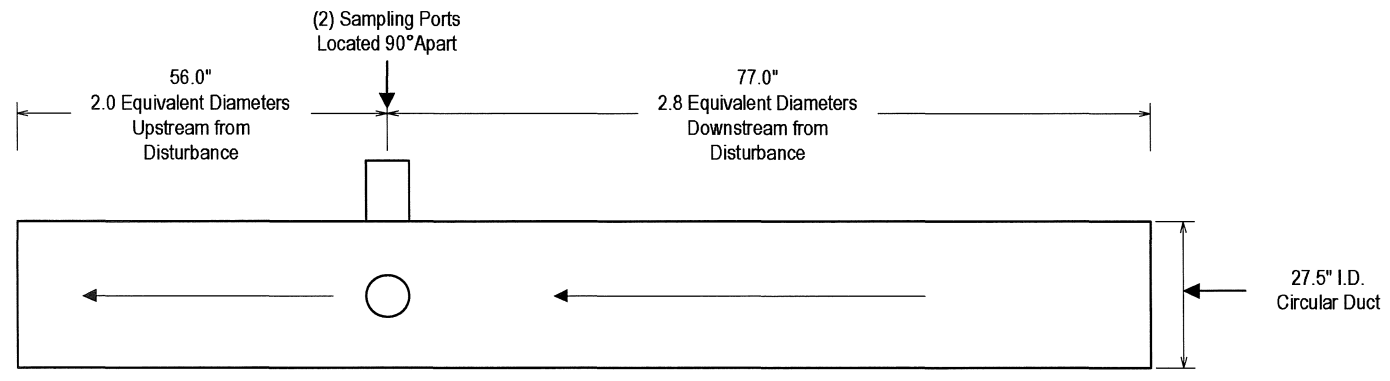
FIGURE 3-3
ELPO RTO No. 1 EXHAUST TRAVERSE POINT LOCATION DRAWING

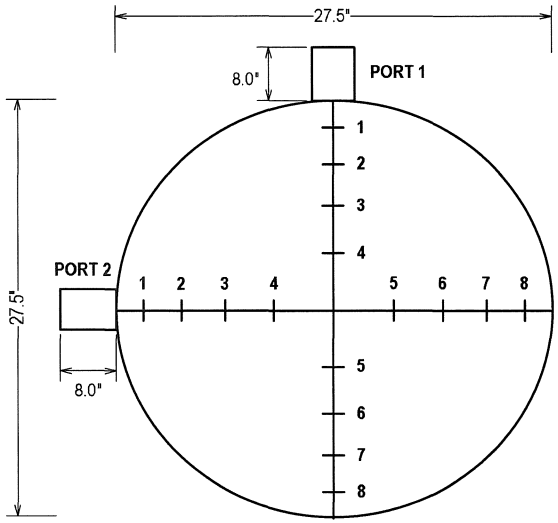




Point	% of Stack Depth	Distance from Inside Wall (in.) PORT 1	Distance from Inside Wall (in.) PORT 2
1	3.2	1.1	1.1
2	10.5	3.6	3.6
3	19.4	6.6	6.6
4	32.3	11.0	11.0
5	67.7	23.0	23.0
6	80.6	27.4	27.4
7	89.5	30.4	30.4
8	96.8	32.9	32.9

FIGURE 3-4
ELPO RTO No. 2 INLET TRAVERSE POINT LOCATION DRAWING

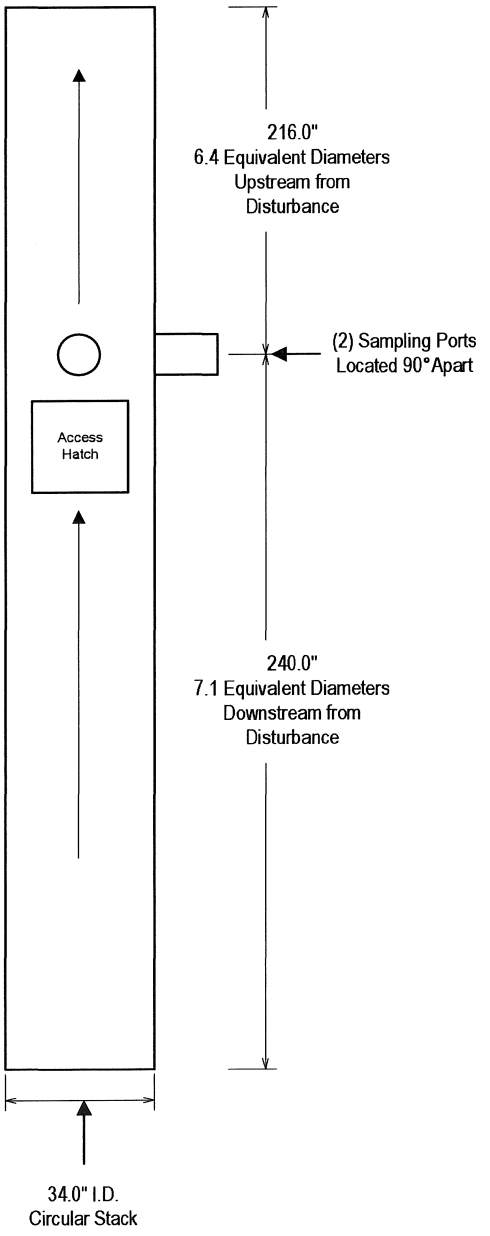


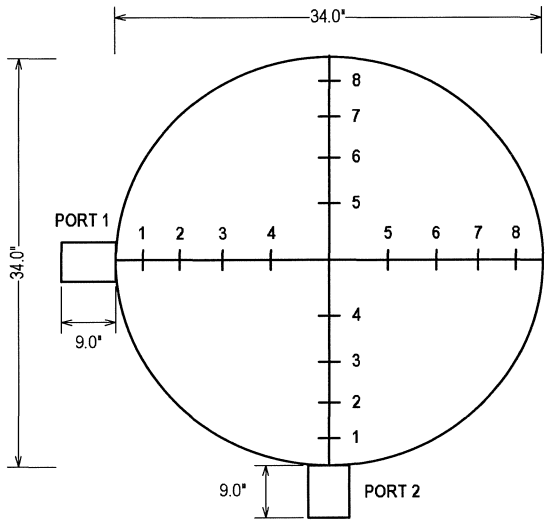


Point	% of Duct Depth	Distance from Inside Wall (in.) PORT 1	Distance from Inside Wall (in.) PORT 2
1*	3.2	1.0	1.0
2	10.5	2.9	2.9
3	19.4	5.3	5.3
4	32.3	8.9	8.9
5	67.7	18.6	18.6
6	80.6	22.2	22.2
7	89.5	24.6	24.6
8*	96.8	26.5	26.5

* Points adjusted per US EPA Method 1, Section 11.1.3.4

FIGURE 3-5
ELPO RTO No. 2 EXHAUST TRAVERSE POINT LOCATION DRAWING





Point	% of Stack Depth	Distance from Inside Wall (in.) PORT 1	Distance from Inside Wall (in.) PORT 2
1	3.2	1.1	1.1
2	10.5	3.6	3.6
3	19.4	6.6	6.6
4	32.3	11.0	11.0
5	67.7	23.0	23.0
6	80.6	27.4	27.4
7	89.5	30.4	30.4
8	96.8	32.9	32.9

4.0 SAMPLING AND ANALYTICAL PROCEDURES

4.1 TEST METHODS

4.1.1 US EPA Method 1: "Sample and Velocity Traverses for Stationary Sources"

Principle: To aid in the representative measurement of pollutant emissions and/or total volumetric flow rate from a stationary source, a measurement site where the effluent stream is flowing in a known direction is selected, and the cross-section of the stack is divided into a number of equal areas. A traverse point is then located within each of these equal areas. This method was utilized in its entirety as per the procedures outlined in 40 CFR Part 60, Appendix A.

4.1.2 US EPA Method 2: "Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)"

Principle: The average gas velocity in a stack is determined from the gas density and from measurement of the average velocity head with a Type S (Stausscheibe or reverse type) pitot tube. This method was utilized in its entirety as per the procedures outlined in 40 CFR Part 60, Appendix A.

4.1.3 US EPA Method 4: "Determination of Moisture Content in Stack Gases"

Principle: A gas sample is extracted at a constant rate from the source; moisture is removed from the sample stream and determined either volumetrically or gravimetrically. This method was utilized in its entirety as per the procedures outlined in 40 CFR Part 60, Appendix A.

4.1.4 US EPA Method 25A: "Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer"

Principle: A gas sample is extracted from the source through a heated sample line, if necessary, and glass fiber filter to a flame ionization analyzer (FIA). Results are reported as volume concentration equivalents of the calibration gas or as carbon equivalents. Performance specifications and test procedures are provided to ensure reliable data. This method was utilized in its entirety as per the procedures outlined in 40 CFR Part 60,

The sampling trains utilized during this testing project are depicted in Figures 4-1 and 4-2.

4.2 PROCEDURES FOR OBTAINING PROCESS DATA

Process data was recorded by GM Flint Assembly personnel utilizing their typical record keeping procedures. Recorded process data was provided to Montrose personnel at the conclusion of this test event. The process data is located in the Appendix.

FIGURE 4-1
US EPA METHOD 4 SAMPLING TRAIN SCHEMATIC

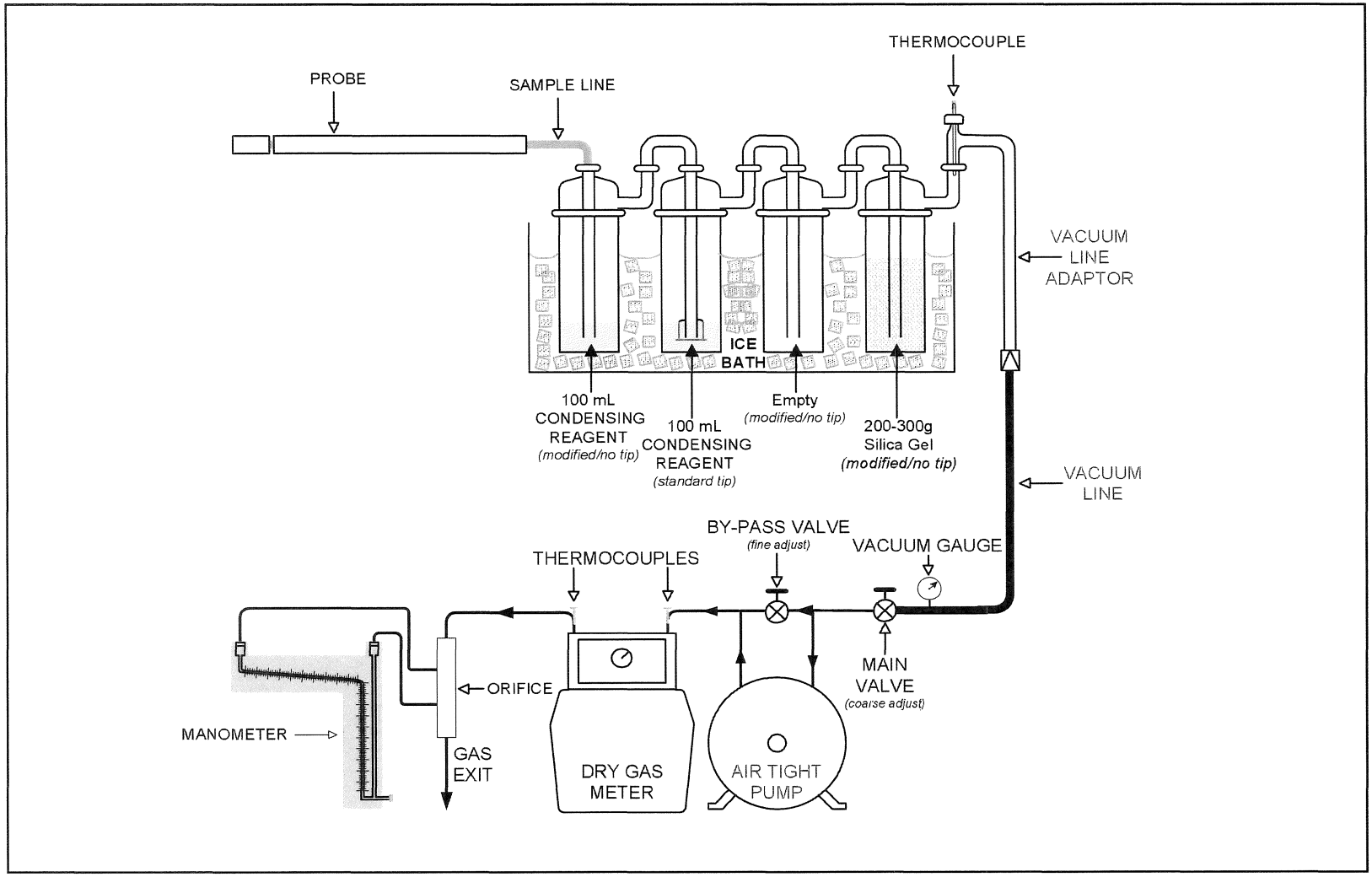
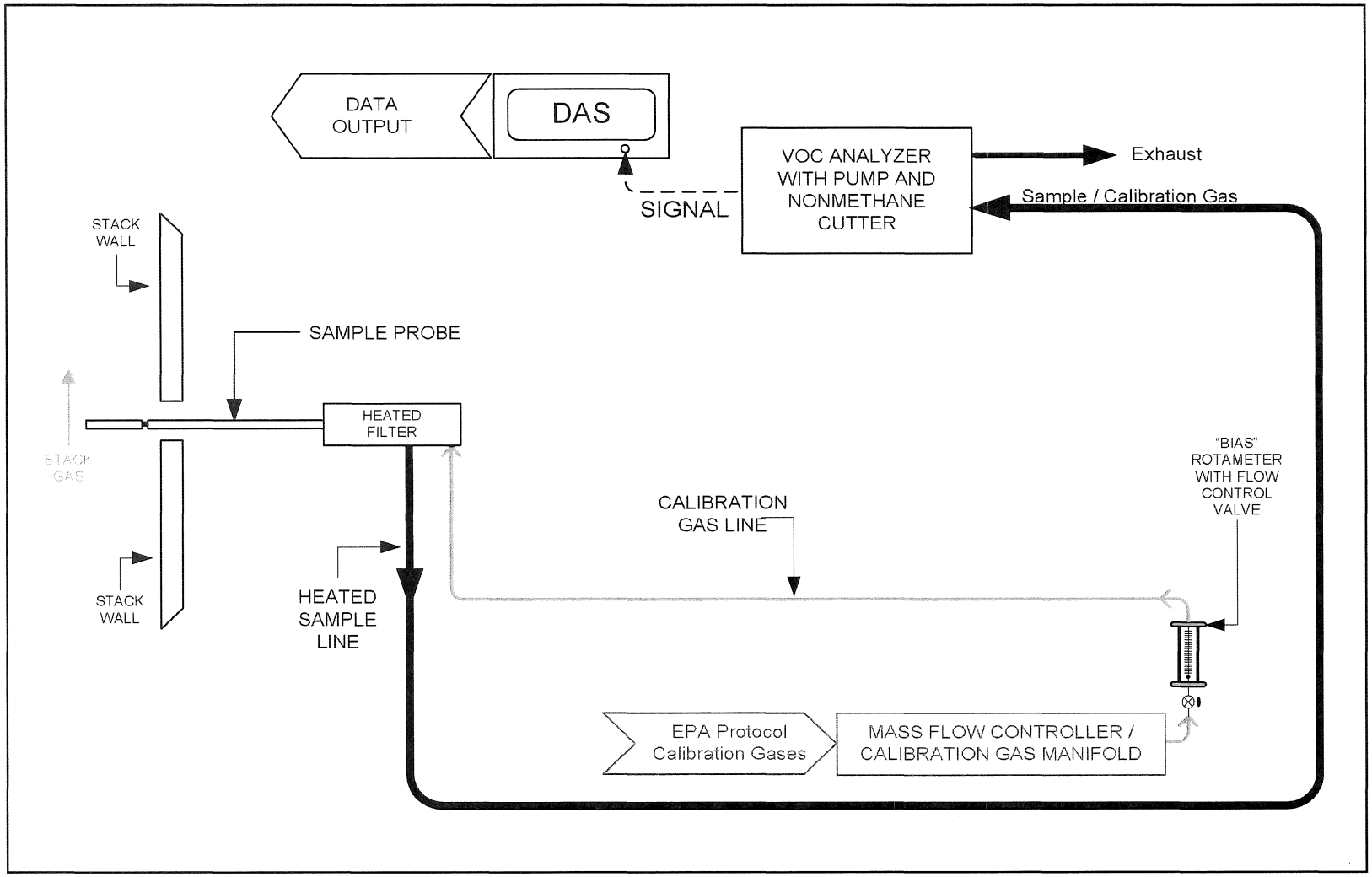


FIGURE 4-2
US EPA METHOD 25A SAMPLING TRAIN SCHEMATIC



5.0 INTERNAL QA/QC ACTIVITIES

5.1 QA AUDITS

Tables 5-1 to 5-5 illustrate the QA audits that were performed during this test.

All meter boxes and sampling trains used during sampling performed within the requirements of their respective methods as is shown in Tables 5-1 and 5-2. All post-test leak checks were well below the applicable limit. Minimum metered volumes were also met where applicable.

Tables 5-3 and 5-4 illustrate the FIA calibration audits which were performed during this test (and integral to performing US EPA Method 25A correctly) were, except where noted, within the Measurement System Performance Specifications of ±3% of span for the Zero and Calibration Drift Checks, and ±5% of the respective cylinder concentrations for the Calibration Error Checks.

Table 5-5 displays the US EPA Method 205 field evaluation of the calibration gas dilution system utilized during this test event. As shown, the average concentration output at each dilution level was within ±2% of the predicted value. The average concentration output of the mid-level gas was also within ±2% of the certified concentration.

5.2 QA/QC PROBLEMS

No QA/QC problems occurred during this test event.

5.3 QUALITY STATEMENT

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

TABLE 5-1
US EPA METHOD 4 SAMPLING TRAIN AUDIT RESULTS

Parameter	Run 1	Run 2	Run 3
Sampling Location	**ELPO RTO No. 1 Exhaust Stack**		
Post-Test Leak Rate Observed (cfm)	0.000	0.000	0.000
Applicable Method Allowable Leak Rate (cfm)	0.020	0.020	0.020
Acceptable	Yes	Yes	Yes
Volume of Dry Gas Collected (dscf)	22.499	22.370	22.327
Recommended Volume of Dry Gas Collected (dscf)	21.000	21.000	21.000
Acceptable	Yes	Yes	Yes
Sampling Location	**ELPO RTO No. 2 Exhaust Stack**		
Post-Test Leak Rate Observed (cfm)	0.000	0.000	0.000
Applicable Method Allowable Leak Rate (cfm)	0.020	0.020	0.020
Acceptable	Yes	Yes	Yes
Volume of Dry Gas Collected (dscf)	22.466	22.441	22.465
Recommended Volume of Dry Gas Collected (dscf)	21.000	21.000	21.000
Acceptable	Yes	Yes	Yes

TABLE 5-2
US EPA METHOD 4 DRY GAS METER AUDIT RESULTS

Sampling Location	Pre-Test Dry Gas Meter Calibration Factor (Y)	Average Post-Test Dry Gas Meter Calibration Check Value (Yqa)	Post Test Dry Gas Meter Calibration Check Value Difference From Pre-Test Calibration Factor (%)	Applicable Method Allowable Difference (%)	Acceptable
ELPO RTO No. 1 Exhaust Stack	0.9840	1.0096	-2.60%	5.00%	Yes
ELPO RTO No. 2 Exhaust Stack	0.9840	1.0078	-2.42%	5.00%	Yes

TABLE 5-3
US EPA METHOD 25A ANALYZER CALIBRATION AND QA

	ELPO RTO No. 1 Inlet Duct					
FID ANALYZER	**RUN 1**	**Acceptable**	**RUN 2**	**Acceptable**	**RUN 3**	**Acceptable**
Analyzer Span During Test Run (ppmv as propane)	500.0	YES	500.0	YES	500.0	YES
Average Stack Gas Concentration (ppmv as propane)	146.2	YES	174.2	YES	167.7	YES
Zero Drift (% of Span)	1.47	YES	-0.01	YES	0.36	YES
Calibration Drift for Mid-Level Gas (% of Span)	0.43	YES	-0.29	YES	-0.19	YES
Calibration Error for Low-Level Gas (% of Cal. Gas Tag Value)	1.04	YES	1.04	YES	1.04	YES
Calibration Error for Mid-Level Gas (% of Cal. Gas Tag Value)	0.00	YES	-0.86	YES	-0.29	YES

	ELPO RTO No. 1 Exhaust Stack					
FID ANALYZER/NON-METHANE CUTTER	**RUN 1**	**Acceptable**	**RUN 2**	**Acceptable**	**RUN 3**	**Acceptable**
Analyzer Span During Test Run (ppmv as propane)	100.0	YES	100.0	YES	100.0	YES
Average Stack Gas Concentration (ppmv as propane)	4.9	YES	5.8	YES	5.5	YES
Zero Drift (% of Span)	0.09	YES	-0.14	YES	-0.01	YES
Calibration Drift for Mid-Level Gas (% of Span)	-0.02	YES	0.00	YES	0.43	YES
Calibration Error for Low-Level Gas (% of Cal. Gas Tag Value)	0.67	YES	0.67	YES	0.67	YES
Calibration Error for Mid-Level Gas (% of Cal. Gas Tag Value)	1.14	YES	1.18	YES	1.18	YES

TABLE 5-4
US EPA METHOD 25A ANALYZER CALIBRATION AND QA

	ELPO RTO No. 2 Inlet Duct					
FID ANALYZER	**RUN 1**	**Acceptable**	**RUN 2**	**Acceptable**	**RUN 3**	**Acceptable**
Analyzer Span During Test Run (ppmv as propane)	500.0	YES	500.0	YES	500.0	YES
Average Stack Gas Concentration (ppmv as propane)	101.9	YES	100.8	YES	101.1	YES
Zero Drift (% of Span)	0.98	YES	-0.34	YES	0.65	YES
Calibration Drift for Mid-Level Gas (% of Span)	-0.19	YES	-0.59	YES	-0.41	YES
Calibration Error for Low-Level Gas (% of Cal. Gas Tag Value)	0.67	YES	0.67	YES	0.67	YES
Calibration Error for Mid-Level Gas (% of Cal. Gas Tag Value)	-0.26	YES	0.11	YES	1.30	YES

	ELPO RTO No. 2 Exhaust Stack					
FID ANALYZER/NON-METHANE CUTTER	**RUN 1**	**Acceptable**	**RUN 2**	**Acceptable**	**RUN 3**	**Acceptable**
Analyzer Span During Test Run (ppmv as propane)	50.0	YES	50.0	YES	50.0	YES
Average Stack Gas Concentration (ppmv as propane)	3.9	YES	3.8	YES	4.3	YES
Zero Drift (% of Span)	0.00	YES	-0.14	YES	0.04	YES
Calibration Drift for Mid-Level Gas (% of Span)	-0.62	YES	0.32	YES	-0.44	YES
Calibration Error for Low-Level Gas (% of Cal. Gas Tag Value)	-2.93	YES	-2.93	YES	-2.93	YES
Calibration Error for Mid-Level Gas (% of Cal. Gas Tag Value)	-1.36	YES	-0.12	YES	-0.76	YES

TABLE 5-5
US EPA METHOD 205 GAS DILUTION SYSTEM QA

Analyzer Serial Number: 06111923-99
Dilution System Serial Number: 8240

	Dilution Level 1	Dilution Level 2	Mid-Level Gas
Calibration Tag Value (ppm):	901.4	901.4	90.68
Dilution Ratio:	10.02	18.03	-
Predicted Diluted Value (ppm):	90	50	-
Injection 1 Response (ppm):	90.18	49.72	91.05
Injection 2 Response (ppm):	90.29	49.35	90.59
Injection 3 Response (ppm):	89.41	49.31	90.30
Average Response (ppm):	89.96	49.46	90.65
Difference From Predicted (%):	0.04	1.08	0.04
Acceptable :	Yes	Yes	Yes