SOURCE TEST REPORT
2021 SOURCE TESTING
CHRONIC HEALTH RISK
COVANTA MARION, INC.
SOLID WASTE COMBUSTOR UNIT 2
BROOKS, OREGON

Prepared For:

Covanta Marion, Inc.
4850 Brooklake Road NE
Brooks, OR 97305

For Submittal To:

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Prepared By:

Montrose Air Quality Services, LLC
13585 NE Whitaker Way
Portland, OR 97230

Document Number:	**W006AS-010935B-RT-1922**
Test Date:	**December 8, 2021**
Submittal Date:	**January 31, 2022**

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA ACCREDITED TO ASTM D7036 ONLY CERT #3925.01

MONTROSE AIR QUALITY SERVICES

REVIEW AND CERTIFICATION

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: 01 / 31 / 2022

Name: Peter Becker Title: Client 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: 01 / 31 / 2022

Name: Amber Little Title: Reporting Hub Manager

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

1.1 SUMMARY OF TEST PROGRAM

Covanta Marion, Inc. (Covanta) contracted Montrose Air Quality Services, LLC (Montrose) to perform an emissions test program on Solid Waste Combustors Units 1 and 2 at their facility located in Brooks, Oregon. The tests were conducted to measure specific reportable Toxic Air Contaminants (TAC) included under OAR 340-245-8020 for the purposes of generating representative emissions inventory pursuant to OAR 340-245-0040 for the Cleaner Air Oregon (CAO) Program.

Montrose performed the tests to measure the emission parameters listed in Table 1-1.

TABLE 1-1
SUMMARY OF TEST PROGRAM

Test Date	Unit ID/ Source Name	Activity/ Parameters	Test Methods	No. of Runs	Duration (Minutes)
12/8/2021	Unit 2	Velocity/Volumetric Flow Rate	EPA 1 & 2	3	60/120
“”	“”	O_2, CO_2	EPA 3A	3	120
“”	“”	Moisture	EPA 4	3	60/120
“”	“”	HCl, HF, HBr, Cl_2, Br_2	Mod. EPA 26A	3	60
“”	“”	NH_3	BAAQMD ST-1B	3	60
“”	“”	CH_2O, C_2H_4O, C_3H_4O	CARB 430	3	60
“”	“”	SLO-SMVOC and SMVOC	EPA SW-846 0031	3	120
“”	“”	Post-test thermocouple calibration check	EPA ALT-011	--	--

To simplify this report, a list of Units and Abbreviations is included in Appendix D.1. Throughout this report, chemical nomenclature, acronyms, and reporting units are not defined. Please refer to the list for specific details.

This report presents the test results and supporting data, descriptions of the testing procedures, descriptions of the facility and sampling locations, and a summary of the quality assurance procedures used by Montrose. Detailed results for individual test runs can be found in Section 4.0. All supporting data can be found in the appendices.

The testing was conducted by the Montrose personnel listed in Table 1-2. The tests were conducted according to the test plan (protocol) dated November 24, 2021 that was submitted to the ODEQ and approved on December 3, 2021.

1.2 KEY PERSONNEL

A list of project participants is included on the following page:

Facility Information

Source Location:	Covanta Marion, Inc. 4850 Brooklake Road Brooks, OR 97305	
Project Contact:	Andrew Willis	Jeffrey Hahn
Role:	Environmental Compliance Specialist	Consultant
Company:	Covanta	Covanta
Telephone:	503-979-1807	201-723-6447
Email:	awillis@covanta.com	jhahn@covanta.com

Agency Information

Regulatory Agency:	Oregon DEQ	
Agency Contact:	Kenzie Billings	Thomas Rhodes
Telephone:	503-229-5247	503-229-5534
Email:	kenzie.billings@deq.oregon.gov	thomas.rhodes@deq.oregon.gov

Testing Company Information

Testing Firm:	Montrose Air Quality Services, LLC	
Contact:	Peter Becker	Kristina Schafer
Title:	Client Project Manager	Hub District Manager
Telephone:	330-285-6884	253-480-3801
Email:	pbecker@montrose-env.com	kschafer@montrose-env.com

Laboratory Information

Laboratory:	Enthalpy Analytical	Eurofins Test America
City, State:	Durham, NC	Knoxville, TN
Method:	EPA Mod. 26A	EPA SW-846 0031
Laboratory:	Montrose Air Quality	Atmospheric Analysis & Consulting
City, State:	Antioch, CA	Ventura, CA
Method:	BAAQMD ST-1B	CARB 430

Test personnel and observers are summarized in Table 1-2.

TABLE 1-2
TEST PERSONNEL AND OBSERVERS

Name	Affiliation	Role/Responsibility
Kevin Crosby	Montrose	Test Coordinator
Peter Becker	Montrose	Project Manager/Field Team Leader/Qualified Individual (QI)/Trailer operator/Sample recovery/Sample train operator
Esha Chetty	Montrose	Sample recovery
Sebastian Wolfendale	Montrose	Stack Lead
Austin Goracke	Montrose	Sample train operator
Preston Bauder	Montrose	Sample train operator
Lesly Wolf	Montrose	Sample train operator
Andy Vella	Montrose	Calculations and report preparation
Andrew Willis	Covanta	Observer/Client Liaison/Test Coordinator
Paul Kantola	Covanta	Corporate EHS
Jeff Hahn	Covanta	Consultant
Kenzie Billings	Oregon DEQ	CAO Project Manager
Thomas Rhodes	Oregon DEQ	CAO Source Test Coordinator

2.0 PLANT AND SAMPLING LOCATION DESCRIPTIONS

2.1 PROCESS DESCRIPTION, OPERATION, AND CONTROL EQUIPMENT

The Marion County Solid Waste-to-Energy Facility is located in Brooks, Oregon. The facility consists of two identical municipal solid waste-fired boilers of Martin GmbH Stoker Combustion System design. The combustors each have a capacity greater than 250 tons per day. The facility produces up to 13.1 MW of electricity daily. Each MWC unit exhausts through a common flue stack. Air pollution equipment for each independent train includes semi-dry flue gas scrubbers for acid gas control, fabric filter for particulate removal, selective non-catalytic reduction (SNCR) for control of nitrogen oxides and dry activated carbon injection for mercury emission controls. Each unit is also equipped with a continuous emission monitoring system to monitor emissions of nitrogen oxides, sulfur dioxide, carbon monoxide, and related process parameters.

2.2 FLUE GAS SAMPLING LOCATIONS

Information regarding the sampling locations is presented in Table 2-1.

TABLE 2-1
SAMPLING LOCATIONS

Sampling Location	Stack Inside Diameter (in.)	Distance from Nearest Disturbance		Number of Traverse Points
		Downstream EPA "B" (in./dia.)	Upstream EPA "A" (in./dia.)	
Unit 2	48	1200 / 25	1440 / 30	EPA 26A: 12 (6/port); Other methods: 1; Gaseous: 3

Sample locations were verified in the field to conform to EPA Method 1. Acceptable cyclonic flow conditions were confirmed prior to testing using EPA Method 1, Section 11.4. See Appendix A.1 for more information.

2.3 OPERATING CONDITIONS AND PROCESS DATA

Emission testing was performed under two distinct operating scenarios which included:

- A low fire/reduced steam load (80-90% of design steam load) to provide results used in calculation of acute health risk, and
- A high fire/increased steam load (90-110% of design steam load) to characterize chronic health risk.

The design steam load capacity is approximately 67 Klbs/hr. CMI operated under "worst case" conditions (refer to operating scenarios referenced above) for the Cleaner Air Oregon required testing, as described in detail in Section 2.9 of the DEQ Source Sampling Manual, i.e., both the low fire/reduced steam load and the high fire/increased steam load operating scenarios.

The “low fire/reduced steam load” scenario, which represents the maximum “worst case” boiler operating condition, would only occur in a few hours of operation in any given year. The results from the high fire operating scenario are presented in this test report.

The fuel processed during testing primarily consisted of municipal solid waste and other approved wastes (e.g., regulated medical waste, industrial solid wastes, liquid waste). CMI tracked the amounts of regulated medical waste and liquid wastes processed in each unit as well as the amount of industrial waste that was received during each testing day. These parameters are summarized in a supplemental document to this report. Operating data including continuous emissions monitoring (CEM), continuous opacity monitoring (COM), continuous parameter monitoring (CPM), and reagent feed rates are presented in Appendix B. These include:

- Steam flow, 1000 lb/hr
- Baghouse inlet temperature, °F
- Carbon injection rate, lb/hr
- Lime flow, lb/hr
- Ammonia flow, gph
- Auxiliary natural gas flow, kscfh
- NO_X, ppm (@ 7% O_2)
- SO_2, ppm (@ 7% O_2)
- CO, ppm (@ 7% O_2)
- Opacity (%)

3.0 SAMPLING AND ANALYTICAL PROCEDURES

3.1 TEST METHODS

The test methods for this test program were presented previously in Table 1-1. Additional information regarding specific applications or modifications to standard procedures is presented below.

3.1.1 EPA Method 1, Sample and Velocity Traverses for Stationary Sources

EPA Method 1 is used to assure that representative samples or measurements of volumetric flow rate are obtained by dividing the cross-section of the stack or duct into equal areas, and then locating a traverse point within each of the equal areas. Acceptable sample locations must be located at least two stack or duct equivalent diameters downstream from a flow disturbance and one-half equivalent diameter upstream from a flow disturbance.

Pertinent information regarding the performance of the method is presented below:

- Method Options: NA
- Method Exceptions: None

The sample port and traverse point locations are detailed in Appendix A.

3.1.2 EPA Method 2, Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

EPA Method 2 is used to measure the gas velocity using an S-type pitot tube connected to a pressure measurement device, and to measure the gas temperature using a calibrated thermocouple connected to a thermocouple indicator. Typically, Type S (Stausscheibe) pitot tubes conforming to the geometric specifications in the test method are used, along with an inclined manometer. The measurements are made at traverse points specified by EPA Method 1. The molecular weight of the gas stream is determined from independent measurements of O_2, CO_2, and moisture. The stack gas volumetric flow rate is calculated using the measured average velocity head, the area of the duct at the measurement plane, the measured average temperature, the measured duct static pressure, the molecular weight of the gas stream, and the measured moisture.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - S-type pitot tube coefficient is 0.84
  - Inclined manometer is used to measure velocity
  - ALT-011 used to verify thermocouple functionality
- Method Exceptions: None

The typical sampling system is detailed in Figures 3-2 and 3-3.

3.1.3 EPA Method 3A, Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)

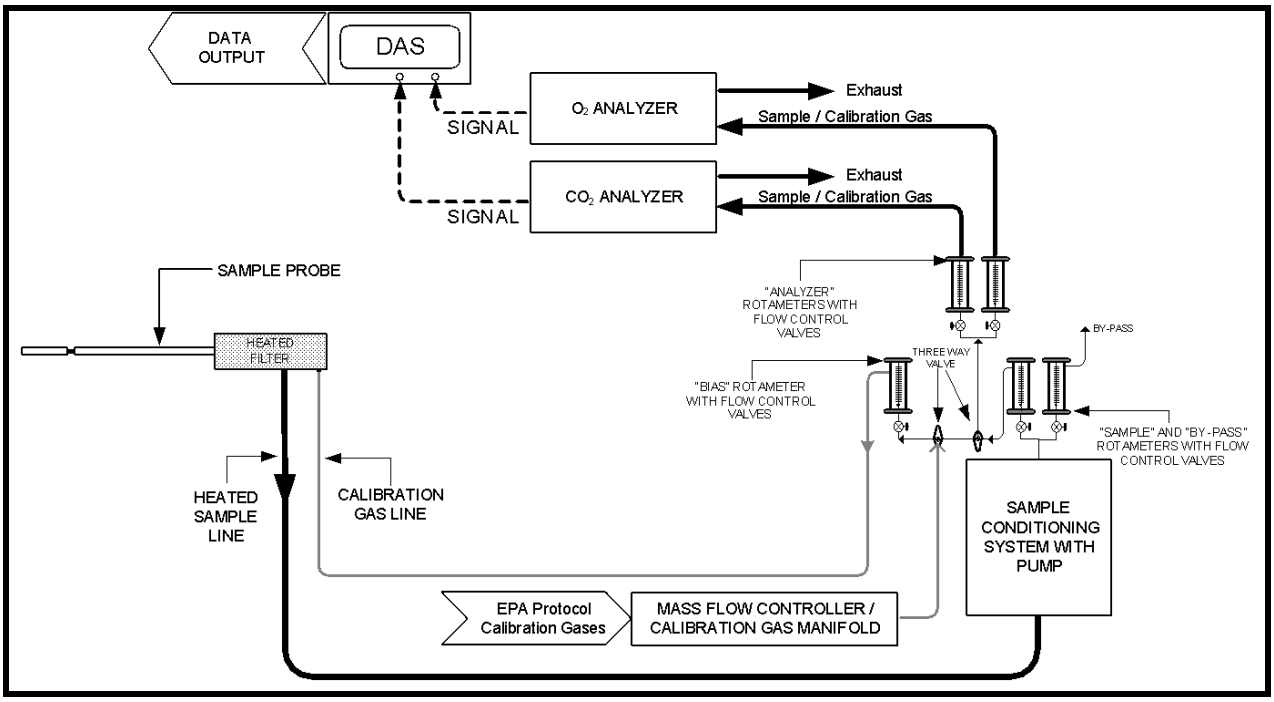
EPA Method 3A is an instrumental test method used to measure the concentration of O_2 and CO_2 in stack gas. The effluent gas is continuously or intermittently sampled and conveyed to analyzers that measure the concentration of O_2 and CO_2. The performance requirements of the method must be met to validate data.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - Calibration span values are 23.04% O_2 and 22.66% CO_2
- Method Exceptions: None
- Target and/or Minimum Required Sample Duration: 120 minutes (concurrent with EPA SW846 Method 0031)

The typical sampling system is detailed in Figure 3-1.

FIGURE 3-1
US EPA METHOD 3A (O_2/CO_2) SAMPLING TRAIN



3.1.4 EPA Method 4, Determination of Moisture Content in Stack Gas

EPA Method 4 is a manual, non-isokinetic method used to measure the moisture content of gas streams. Gas is sampled at a constant sampling rate through a probe and impinger train. Moisture is removed using a series of pre-weighed impingers containing methodology-specific liquids and silica gel immersed in an ice water bath. The impingers are weighed after each run to determine the percent moisture.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - The reference method is used to measure moisture
  - Moisture sampling is performed as part of the pollutant sample trains
  - Since it is theoretically impossible for measured moisture to be higher than psychrometric moisture, the psychrometric moisture is also calculated, and the lower moisture value is used in the calculations
- Method Exceptions: None
- Target and/or Minimum Required Sample Duration: Concurrent with Mod. EPA Method 26A and BAAQMD Method ST-1B sampling
- Target and/or Minimum Required Sample Volume: 21 scf

The typical sampling system is detailed in Figures 3-2 and 3-3.

3.1.5 EPA Method 26A, Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic Method

EPA Method 26A is a manual, isokinetic method used to measure hydrogen chloride and hydrogen fluoride emissions from stationary sources. Gaseous and particulate pollutants are withdrawn isokinetically from the source and collected in an optional cyclone, on a filter, and in absorbing solutions. The cyclone collects any liquid droplets and is not necessary if the source emissions do not contain them; however, it is preferable to include the cyclone in the sampling train to protect the filter from any liquid present. The filter collects particulate matter including halide salts but is not routinely recovered or analyzed. Acidic and alkaline absorbing solutions collect the gaseous hydrogen halides and halogens, respectively. Following sampling of emissions containing liquid droplets, any halides/halogens dissolved in the liquid in the cyclone and on the filter are vaporized to gas and collected in the impingers by pulling conditioned ambient air through the sampling train. The hydrogen halides are solubilized in the acidic solution and form chloride (Cl^-), bromide (Br^-), and fluoride (F^-) ions. The halogens have a very low solubility in the acidic solution and pass through to the alkaline solution where they are hydrolyzed to form a proton (H^+), the halide ion, and the hypohalous acid (HClO or HBrO). Sodium thiosulfate is added to the alkaline solution to assure reaction with the hypohalous acid to form a second halide ion such that two halide ions are formed for each molecule of halogen gas. The halide ions in the separate solutions are measured by ion chromatography (IC). If desired, the particulate matter recovered from the filter and the probe is analyzed following the procedures in Method 5.

NOTE: If the tester intends to use this sampling arrangement to sample concurrently for particulate matter, the alternative Teflon probe liner, cyclone, and filter holder should not be used. The Teflon filter support must be used. The tester must also meet the probe and filter temperature requirements of both sampling trains.

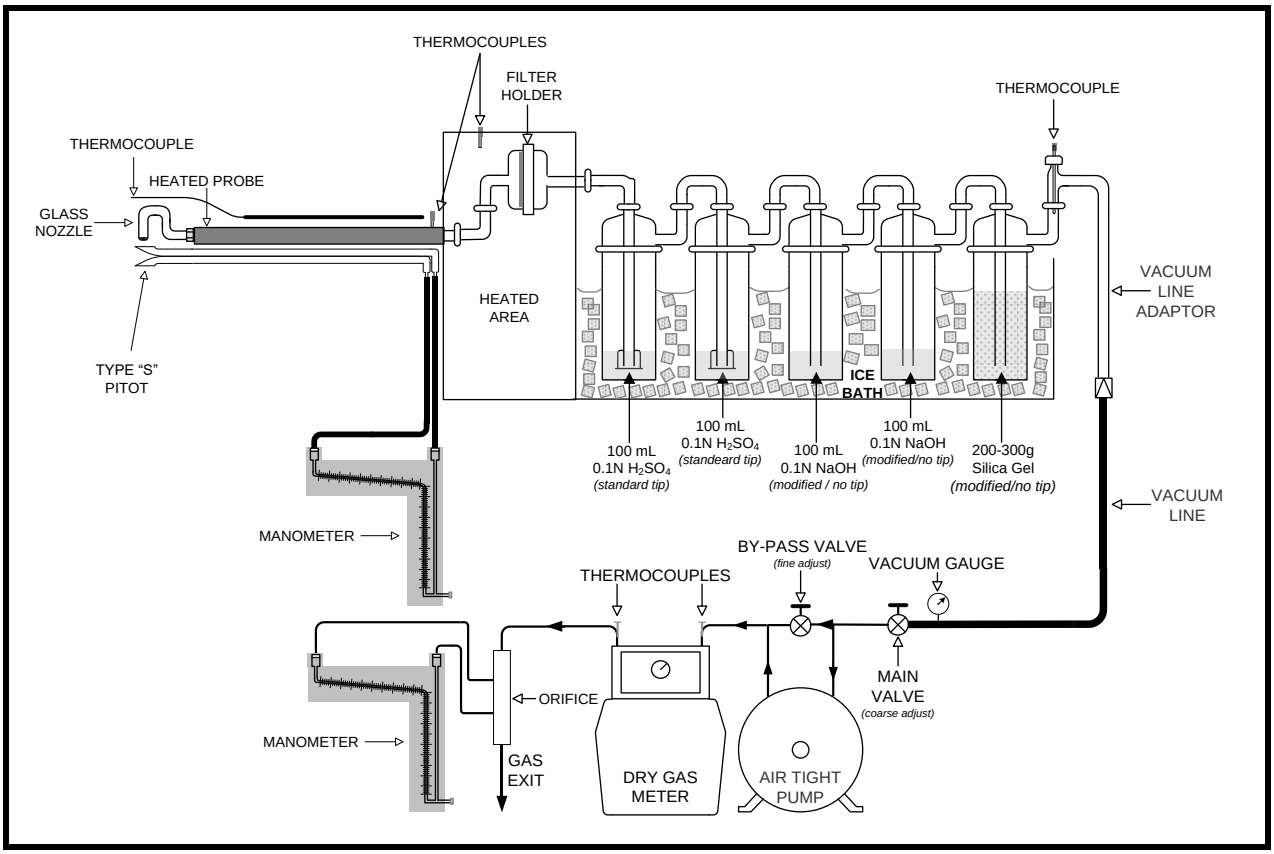
Pertinent information regarding the performance of the method is presented below:

- Method Options: NA
- Method Exceptions: Sampling was not performed isokinetically
- Target and/or Minimum Required Sample Duration: 60 minutes

- Target and/or Minimum Required Sample Volume: 30 dscf
- Analytical Laboratory: Enthalpy Analytical, Durham, NC

The typical sampling system is detailed in Figure 3-2.

FIGURE 3-2
US EPA METHOD 26A (HALIDES & HALOGENS) SAMPLING TRAIN



3.1.6 Bay Area AQMD Method ST-1B, Ammonia Integrated Sampling

BAAQMD ST-1B is a manual, non-isokinetic method used to measure ammonia emissions. This method is performed in conjunction with EPA Methods 1 through 4. The stack gas is sampled through a glass probe and a Greenburg-Smith impinger train consisting of four impingers. The first two impingers are filled with a solution of 0.1 normal (0.1N) hydrochloric acid which absorbs the ammonia. The third impinger is empty. A final impinger contains silica gel to ensure the stack gas is dry before entering the test meter. The method specifies the use of an ion selective electrode (ISE) to detect ammonia in the samples.

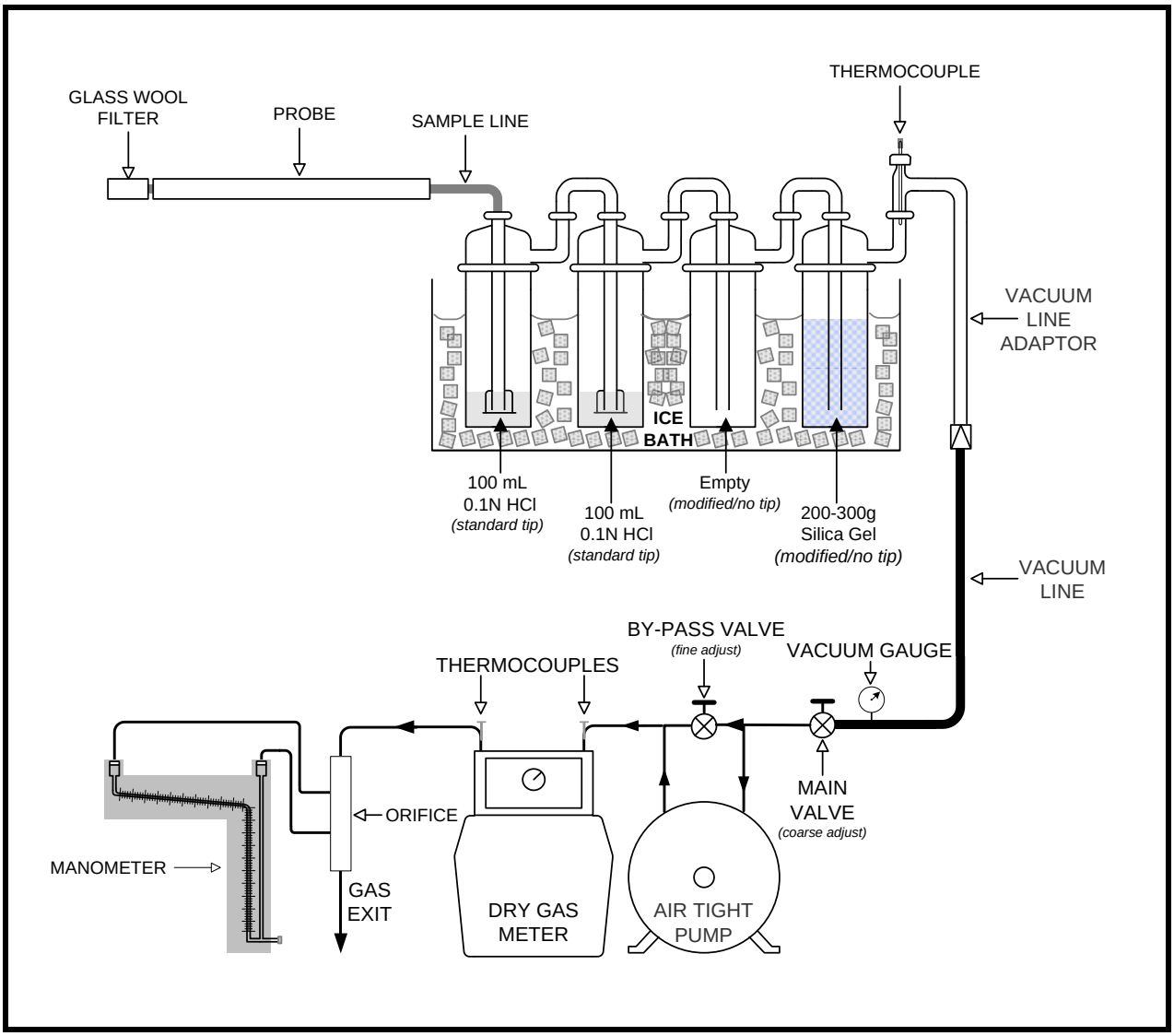
Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - Tests are 60 minutes long instead of the required 30-minute duration
- Method Exceptions:

  - Analysis by ion chromatography (IC) rather than ISE. Lower detection limits can be achieved with IC than with ISE.
- Minimum Required Sample Duration: 30 minutes
- Target Sample Rate: 0.5 cfm
- Maximum Sample Rate: 0.75 cfm
- Analytical Laboratory: Montrose Air Quality Services, Antioch, CA

The typical sampling system is detailed in Figure 3-3.

FIGURE 3-3
BAAQMD ST-1B SAMPLING TRAIN



3.1.7 CARB Method 430, Aldehydes

CARB Method 430 is a non-isokinetic method used to measure aldehyde emissions. Sampling and analysis are modified to include quantification of acrolein and to mitigate interference form NO_X in the stack gas. Gaseous emissions are drawn through a probe and sample line (tubing) and two impingers in series, each impinger containing an aqueous acidic solution of 2,4-dinitropheyl-hydrazine (DNPH). The sampling train includes a probe of heated glass or Teflon tubing, a connecting sample line of Teflon tubing, the two impingers, vacuum pump, control valves and dry gas meter.

Modifications for sampling include the use of a calibrated liter-range dry gas meter to measure the volume of sampled dry stack gas (in place of the rotameter described in the Method, as the rotameter measures only the sampling rate). Note that the meter box includes a rotameter or similar device for measurement of the sampling rate so that the rate is no higher than 500 ml per minute.

Sampling is also modified by the addition of a toluene "float" to each DNPH impinger. This modification has been well-studied by several researchers and has become common practice among testers who routinely use CARB Method 430. The modification prevents interference from NO_X, allows accurate measurement of acrolein, and provides immediate, continuous extraction to stay within the 7-day hold-time for extraction described in Section 8.3 of Method 430.

Approximately 2 to 5 ml of toluene is added to each DNPH impinger prior to sampling and is recovered from the impinger with the DNPH solution. This modification provides continuous extraction of the hydrazone derivatives (formed from the aldehydes reacting with the DNPH) as the samples are collected. Since the derivative for acrolein is not water-soluble, it is continuously extracted into and preserved in the toluene; this allows for accurate laboratory analysis of the acrolein content (which would not be possible using the Method as written). The continuous extraction of the other derivatives (from formaldehyde and acetaldehyde) into the toluene prevents interference from NO_X, as the reactions with NO_X take place only in an aqueous solution.

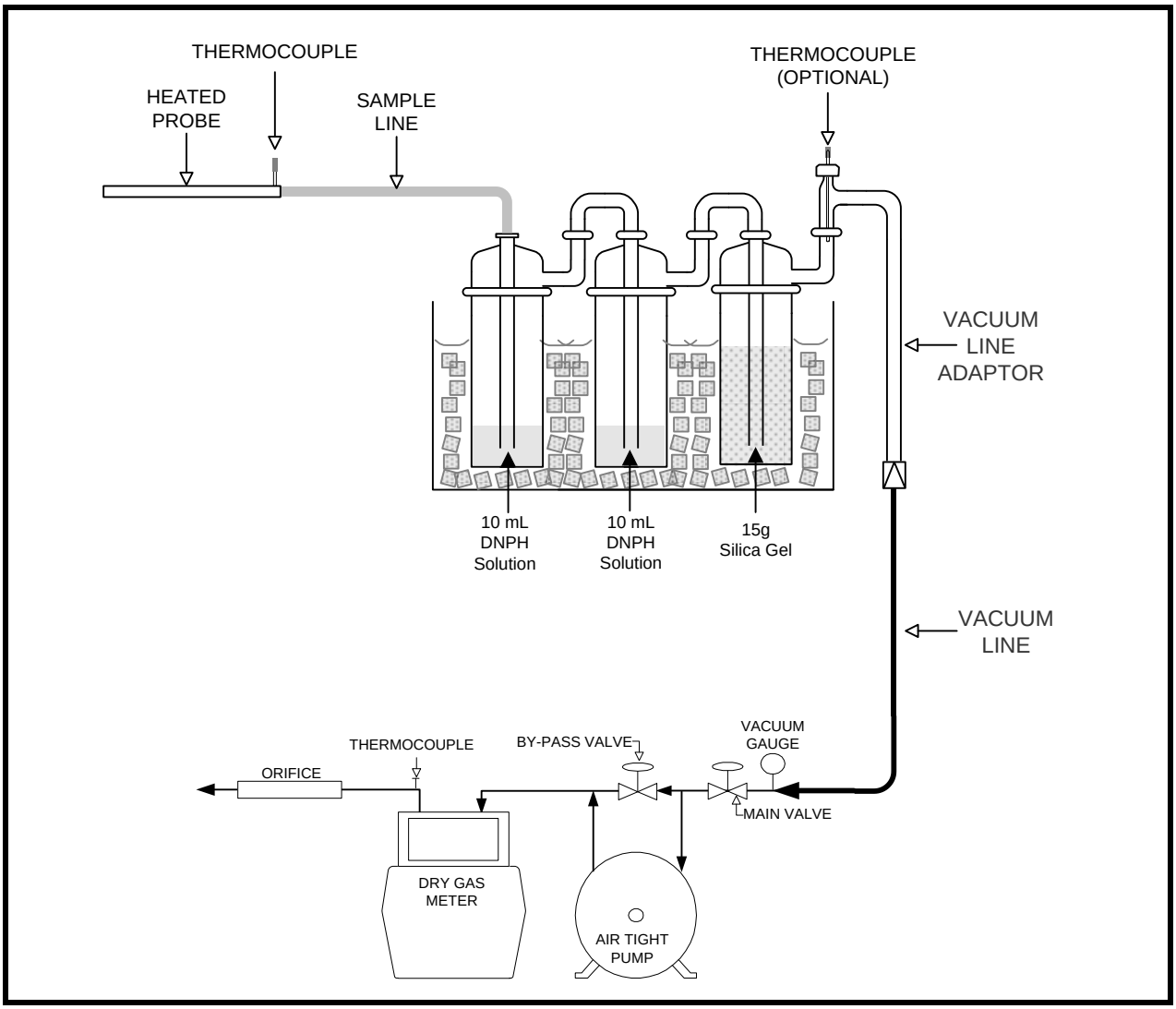
At the completion of sampling, the probe is rinsed with 2 ml of impinger solution into the first impinger. Each impinger is recovered separately into a glass sample vial with a gas tight lid and each impinger is rinsed with 2 ml of impinger solution. An aldehyde reacts with DNPH by nucleophilic addition on the carbonyl followed by 1,2- elimination of water and the formation of a 2,4-dinitrophenylhydrazone. Acid is required to promote protonation of the carbonyl because DNPH is a weak nucleophile. After organic solvent extraction, the sample is analyzed using reverse phase HPLC with an ultraviolet (UV) absorption detector operated at 360 nm. Impingers are analyzed separately. Formaldehyde and acetaldehyde in the sample are identified and quantified by comparison for retention times and area counts of sample extracts with those of standards.

- Method Options:
  - If the sample to blank ratio is less than 5, then the reporting limit of five times the average field blank concentration shall be used rather than the concentration of the blank corrected field samples in all calculations
- Method Exceptions:
  - Toluene "float" added for acrolein extraction
- Target and/or Minimum Required Sample Duration: 120 minutes

- Target and/or Minimum Required Sample Volume: 30 dry standard liters
- Analytical Laboratory: Atmospheric Analysis & Consulting, Ventura, CA

The typical sampling system is detailed in Figure 3-4.

FIGURE 3-4
CARB METHOD 430 SAMPLING TRAIN



3.1.8 EPA SW-846 Method 0031, Sampling Method for Volatile Organic Compounds (SMVOC)

This method employs a sampling module and meter box to withdraw a 20-L sample of effluent gas containing volatile organic compounds from a stationary source at a flow rate of 1 L/min, using a glass-lined probe heated to 130 ±5°C and a sampling method for volatile organic compounds (SMVOC) train.

The gas stream is cooled to 20°C by passage through a water-cooled condenser and volatile organic compounds are collected on a set of sorbent traps (Tenax®-GC/Tenax®-GC/Anasorb®-747). Liquid condensate is collected in an impinger placed between the two Tenax®-GC traps and the Anasorb®-747 trap. The first and second traps contain 1.6 g of Tenax®-GC each and the third trap (back trap) contains 5.0 g of Anasorb®-747. A total number of sorbent tube sets to encompass a total sampling time of two hours is collected: i.e., if a sampling rate of one L/min for 20 minutes is used, a total of six sorbent tube sets will be collected in two hours of sampling.

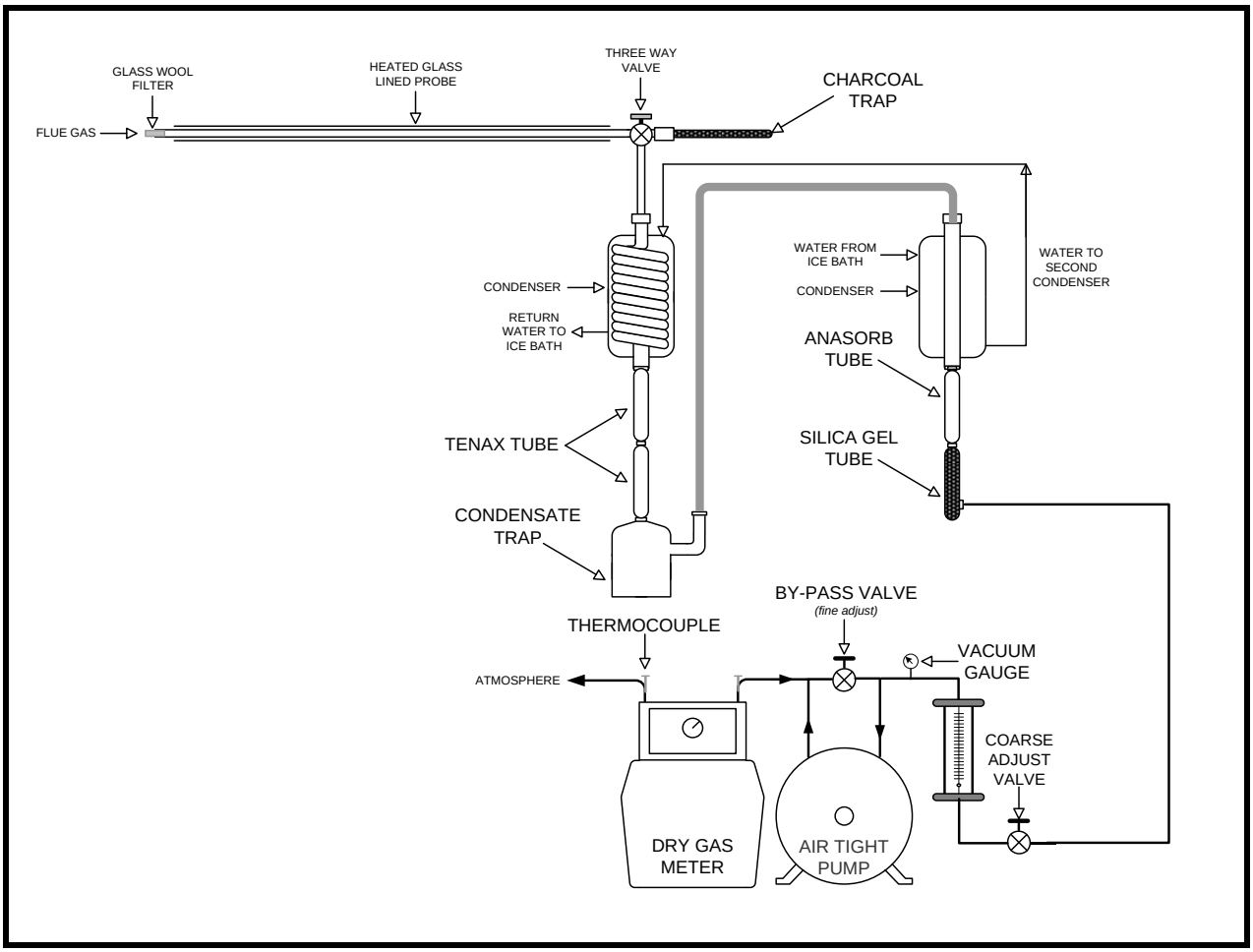
Alternative conditions for sample collection may be used, collecting a sample volume of 20 L or less at a flow rate reduced from one L/min. (Operation of the SMVOC under these conditions is referred to as SLO-SMVOC.) The SLO-SMVOC may be used to collect five L of sample (0.25 mL/min for 20 minutes) or 20 L of sample (0.5 L/min for 40 minutes) on each set of sorbent tubes. These smaller sample volumes collected at lower flow rates should be considered when the points of the volatile organic compounds of interest are below 0°C (see table one of the test method) to prevent breakthrough. Refer to Section 2.2 of the test method for the total number of tube sets collected per run.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - The alternative “SLO-SMVOC” procedure was performed
- Method Exceptions: None
- Target and/or Minimum Required Sample Duration: 120 minutes
- Target and/or Minimum Required Sample Volume: 20 L
- Analytical Laboratory: Eurofins TestAmerica, Knoxville, TN

The typical sampling system is detailed in Figure 3-5.

FIGURE 3-5
SW846-METHOD 0031 SAMPLING TRAIN



3.1.9 EPA Method ALT-011, Alternative Method 2 Thermocouple Calibration

EPA Approved Alternative Method 011 (ALT-011) is used as an alternative to the EPA Method 2 two-point thermocouple calibration. This procedure involves a single-point in-field check using a reference thermometer to confirm that the thermocouple system is operating properly. The temperatures of the thermocouple and reference thermometers shall agree to within ±2 °F.

3.2 PROCESS TEST METHODS

The test plan did not require that process samples be collected during this test program; therefore, no process sample data are presented in this test report.

4.0 TEST DISCUSSION AND RESULTS

4.1 FIELD TEST DEVIATIONS AND EXCEPTIONS

Montrose had planned to perform testing for EPA Methods 23, 29, 0061 and 0023A for the Chronic Health Risk test program, but was not able to due to operational interruption. Covanta was informed of a disruption in the delivery of the leachate from the Marion County ash monofill, which prevented completion of the remaining testing due to insufficient quantities of leachate to meet minimum feed rates outlined in the DEQ-approved source test plan.

4.2 PRESENTATION OF RESULTS

The results of individual test runs performed are presented in Tables 4-1 through 4-5. Emissions are reported in units consistent with those in the applicable regulations or requirements. Additional information is included in the appendices as presented in the Table of Contents.

TABLE 4-1
HCl/HF/HBr EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Time	0937-1037	1123-1223	1628-1728	--
Process Data				
steam rate, 1000 lb/hr	68.3	67.9	66.7	67.6
baghouse inlet temperature, °F	303	304	304	304
carbon injection rate, lb/hr	9.78	9.79	9.85	9.81
lime flow, lb/hr	249.3	249.2	283.2	260.6
ammonia flow, gph	0.0	0.1	0.0	0.0
aux. natural gas flow, kscfh	0.0	0.0	0.0	0.0
Sampling & Flue Gas Parameters				
sample duration, minutes	60	60	60	--
O_2, % volume dry	11.0	11.0	11.1	11.0
CO_2, % volume dry	8.4	8.5	8.3	8.4
flue gas temperature, °F	268	269	264	267
moisture content, % volume	16.2	15.8	16.6	16.2
volumetric flow rate, dscfm	36,737	38,545	37,016	37,433
Hydrogen Chloride (HCl)				
mg	8.14	12.44	8.99	9.86
ppmvd	4.40	6.71	4.95	5.35
ppmvd @ 7% O_2	6.17	9.42	7.03	7.54
lb/hr	0.917	1.47	1.04	1.14
lb/1000 lb steam	0.0134	0.0216	0.0156	0.0169
Hydrogen Fluoride (HF)				
mg	<0.0226	<0.0226	<0.0217	<0.0223
ppmvd	<0.0222	<0.0222	<0.0218	<0.0221
ppmvd @ 7% O_2	<0.0312	<0.0312	<0.0309	<0.0311
lb/hr	<0.00255	<0.00267	<0.00251	<0.00257
lb/1000 lb steam	$<3.73 \times 10^{-5}$	$<3.93 \times 10^{-5}$	$<3.77 \times 10^{-5}$	$<3.81 \times 10^{-5}$
Hydrogen Bromide (HBr)				
mg	0.268	0.201	0.219	0.229
ppmvd	0.0652	0.0488	0.0544	0.0561
ppmvd @ 7% O_2	0.0916	0.0685	0.0772	0.0791
lb/hr	0.0302	0.0237	0.0253	0.0264
lb/1000 lb steam	4.42×10^{-4}	3.49×10^{-4}	3.80×10^{-4}	3.90×10^{-4}

TABLE 4-2
Cl_2/Br_2 EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Time	0937-1037	1123-1223	1628-1728	--
Process Data				
steam rate, 1000 lb/hr	68.3	67.9	66.7	
baghouse inlet temperature, °F	303	304	304	304
carbon injection rate, lb/hr	9.78	9.79	9.85	9.81
lime flow, lb/hr	249.3	249.2	283.2	260.6
ammonia flow, gph	0.0	0.1	0.0	0.0
aux. natural gas flow, kscfh	0.0	0.0	0.0	0.0
Sampling & Flue Gas Parameters				
sample duration, minutes	60	60	60	--
O_2, % volume dry	11.0	11.0	11.1	11.0
CO_2, % volume dry	8.4	8.5	8.3	8.4
flue gas temperature, °F	268	269	264	267
moisture content, % volume	16.2	15.8	16.6	16.2
volumetric flow rate, dscfm	36,737	38,545	37,016	37,433
Chlorine (Cl_2)				
mg	0.242	0.241	0.262	0.248
ppmvd	0.0672	0.0669	0.0741	0.0694
ppmvd @ 7% O_2	0.0943	0.0939	0.105	0.0978
lb/hr	0.0272	0.0285	0.0303	0.0287
lb/1000 lb steam	3.99×10^{-4}	4.19×10^{-4}	4.54×10^{-4}	4.24×10^{-4}
Bromine (Br_2)				
mg	<0.0345	<0.0313	<0.0335	<0.0331
ppmvd	<0.00425	<0.00385	<0.00421	<0.00410
ppmvd @ 7% O_2	<0.00597	<0.00540	<0.00598	<0.00578
lb/hr	<0.00389	<0.00369	<0.00388	<0.00382
lb/1000 lb steam	$<5.69 \times 10^{-5}$	$<5.44 \times 10^{-5}$	$<5.81 \times 10^{-5}$	$<5.65 \times 10^{-5}$

TABLE 4-3
NH_3 EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Time	0937-1037	1123-1223	1313-1413	--
Process Data				
steam rate, 1000 lb/hr	68.3	67.9	66.7	67.6
baghouse inlet temperature, °F	303	304	311	306
carbon injection rate, lb/hr	9.78	9.79	9.78	9.78
lime flow, lb/hr	249.3	249.2	249.4	249.3
ammonia flow, gph	0.0	0.1	0.0	0.0
aux. natural gas flow, kscfh	0.0	0.0	0.0	0.0
Sampling & Flue Gas Parameters				
sample duration, minutes	60	60	60	--
O_2, % volume dry	11.0	11.0	11.1	11.0
CO_2, % volume dry	8.4	8.5	8.3	8.4
moisture content, % volume	16.4	15.6	16.7	16.2
volumetric flow rate, dscfm[1]	36,737	38,545	37,016	37,433
Ammonia (NH_3)				
ppmvd	1.54	1.47	2.74	1.92
ppmvd @ 7% O_2	2.16	2.06	3.90	2.71
lb/hr	0.150	0.150	0.269	0.190
lb/1000 lb steam	0.00220	0.00221	0.00404	0.00282

1 Stack velocity not measured during ammonia runs. Volumetric flow rates are from EPA 26A tests.

TABLE 4-4
ALDEHYDES EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Time	1139-1239	1313-1413	1440-1540	--
Process Data				
steam rate, 1000 lb/hr	68.2	66.7	68.0	67.6
baghouse inlet temperature, °F	305	311	314	310
carbon injection rate, lb/hr	9.80	9.78	9.85	9.81
lime flow, lb/hr	249.4	249.4	250.1	249.6
ammonia flow, gph	0.1	0.0	0.0	0.0
aux. natural gas flow, kscfh	0.0	0.0	0.0	0.0
Sampling & Flue Gas Parameters				
sample duration, minutes	60	60	60	--
sample volume, dsL	30.12	29.90	30.29	30.10
O_2, % volume dry	11.0	11.0	11.1	11.0
CO_2, % volume dry	8.4	8.5	8.3	8.4
volumetric flow rate, dscfm[2]	36,737	38,545	37,016	37,433
Formaldehyde (CH_2O)				
µg	<0.83	<0.86	<1.06	<0.91
ppmvd	<0.033	<0.034	<0.033	<0.033
ppmvd @ 7% O_2	<0.047	<0.047	<0.047	<0.047
lb/hr	$<5.74 \times 10^{-3}$	$<6.07 \times 10^{-3}$	$<5.76 \times 10^{-3}$	$<5.86 \times 10^{-3}$
lb/1000 lb steam	$<8.42 \times 10^{-5}$	$<9.10 \times 10^{-5}$	$<8.47 \times 10^{-5}$	$<8.66 \times 10^{-5}$
Acetaldehyde (C_2H_4O)[3]				
µg	<0.66	1.27	<0.83	<0.92
ppmvd	<0.023	0.023	<0.023	<0.023
ppmvd @ 7% O_2	<0.032	0.033	<0.032	<0.032
lb/hr	$<5.74 \times 10^{-3}$	6.13×10^{-3}	$<5.76 \times 10^{-3}$	$<5.88 \times 10^{-3}$
lb/1000 lb steam	$<8.42 \times 10^{-5}$	9.19×10^{-5}	$<8.47 \times 10^{-5}$	$<8.69 \times 10^{-5}$
Acrolein (C_3H_4O)				
µg	<0.51	<0.50	<0.50	<0.50
ppmvd	<0.018	<0.018	<0.018	<0.018
ppmvd @ 7% O_2	<0.025	<0.025	<0.025	<0.025
lb/hr	$<5.74 \times 10^{-3}$	$<6.07 \times 10^{-3}$	$<5.76 \times 10^{-3}$	$<5.86 \times 10^{-3}$
lb/1000 lb steam	$<8.42 \times 10^{-5}$	$<9.10 \times 10^{-5}$	$<8.47 \times 10^{-5}$	$<8.66 \times 10^{-5}$

2 Stack velocity not measured during aldehydes runs. Volumetric flow rates are from EPA 26A tests.
3 Acetaldehyde Run 2 was the only run where the sample to blank ratio was more than 5, and actual "as-measured" results are presented. For all other runs, the reporting limit of five times the average field blank concentration was used in calculations, per CARB 430 §11.9. All "as-measured" results are available in Appendix A.9 of this report.

TABLE 4-5
VOST EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Time	0937-1209	1245-1514	1547-1806	--
Process Data				
steam rate, 1000 lb/hr	68.1	66.9	67.8	67.6
baghouse inlet temperature, °F	304	313	306	308
carbon injection rate, lb/hr	9.79	9.80	9.82	9.80
lime flow, lb/hr	249.3	250.8	273.3	257.8
ammonia flow, gph	0.0	0.0	0.0	0.0
aux. natural gas flow, kscfh	0.0	0.0	0.0	0.0
Sampling & Flue Gas Parameters				
sample duration, minutes	120	120	120	--
sample volume, dscm	0.0623	0.0615	0.0617	0.0618
O_2, % volume dry	11.0	11.0	11.1	11.0
CO_2, % volume dry	8.4	8.5	8.3	8.4
volumetric flow rate, dscfm[4]	36,737	38,545	37,016	37,433
Acetone(C_3H_6O)				
µg	<1.22	<1.24	<1.29	<1.25
µg/dscm	<19.5	<20.1	<20.9	<20.2
µg/dscm @ 7% O_2	<27.4	<28.3	<29.7	<28.5
ppbvd	<8.08	<8.33	<8.65	<8.35
lb/hr	$<2.69 \times 10^{-3}$	$<2.91 \times 10^{-3}$	$<2.90 \times 10^{-3}$	$<2.83 \times 10^{-3}$
lb/1000 lb steam	$<3.95 \times 10^{-5}$	$<4.34 \times 10^{-5}$	$<4.28 \times 10^{-5}$	$<4.19 \times 10^{-5}$
Benzene (C_6H_6)				
µg	<1.08	<2.20	<1.79	<1.69
µg/dscm	<17.3	<35.8	<29.0	<27.4
µg/dscm @ 7% O_2	<24.2	<50.3	<41.2	<38.6
ppbvd	<5.31	<11.02	<8.93	<8.42
lb/hr	$<2.38 \times 10^{-3}$	$<5.17 \times 10^{-3}$	$<4.02 \times 10^{-3}$	$<3.86 \times 10^{-3}$
lb/1000 lb steam	$<3.49 \times 10^{-5}$	$<7.73 \times 10^{-5}$	$<5.93 \times 10^{-5}$	$<5.72 \times 10^{-5}$
Bromodichloromethane ($CHBrCl_2$)				
µg	<0.128	<0.126	<0.122	<0.125
µg/dscm	<2.06	<2.06	<1.98	<2.03
µg/dscm @ 7% O_2	<2.89	<2.89	<2.81	<2.86
ppbvd	<0.302	<0.302	<0.290	<0.298
lb/hr	$<2.83 \times 10^{-4}$	$<2.97 \times 10^{-4}$	$<2.74 \times 10^{-4}$	$<2.85 \times 10^{-4}$
lb/1000 lb steam	$<4.15 \times 10^{-6}$	$<4.44 \times 10^{-6}$	$<4.04 \times 10^{-6}$	$<4.21 \times 10^{-6}$

4 Stack velocity not measured during VOST runs. Volumetric flow rates are from EPA 26A tests. Only compounds measured above detection limit are presented in this table. Full results are available in Appendices A.10 and C.4 of this test report.

TABLE 4-5 CONTINUED
VOST EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Bromomethane (CH_3Br)				
µg	<0.398	<0.378	<0.278	<0.351
µg/dscm	<6.39	<6.16	<4.51	<5.68
µg/dscm @ 7% O_2	<8.97	<8.64	<6.40	<8.00
ppbvd	<1.62	<1.56	<1.14	<1.44
lb/hr	$<8.79 \times 10^{-4}$	$<8.89 \times 10^{-4}$	$<6.25 \times 10^{-4}$	$<7.98 \times 10^{-4}$
lb/1000 lb steam	$<1.29 \times 10^{-5}$	$<1.33 \times 10^{-5}$	$<9.21 \times 10^{-6}$	$<1.18 \times 10^{-5}$
Carbon Disulfide (CS_2)				
µg	<0.219	<0.366	<0.305	<0.297
µg/dscm	<3.51	<5.96	<4.94	<4.80
µg/dscm @ 7% O_2	<4.93	<8.36	<7.02	<6.77
ppbvd	<1.11	<1.88	<1.56	<1.52
lb/hr	$<4.83 \times 10^{-4}$	$<8.60 \times 10^{-4}$	$<6.86 \times 10^{-4}$	$<6.76 \times 10^{-4}$
lb/1000 lb steam	$<7.09 \times 10^{-6}$	$<1.29 \times 10^{-5}$	$<1.01 \times 10^{-5}$	$<1.00 \times 10^{-5}$
Carbon tetrachloride (CCl_4)				
µg	<0.183	<0.183	<0.187	<0.184
µg/dscm	<2.94	<2.98	<3.04	<2.99
µg/dscm @ 7% O_2	<4.13	<4.18	<4.31	<4.21
ppbvd	<0.460	<0.466	<0.474	<0.466
lb/hr	$<4.05 \times 10^{-4}$	$<4.30 \times 10^{-4}$	$<4.21 \times 10^{-4}$	$<4.19 \times 10^{-4}$
lb/1000 lb steam	$<5.94 \times 10^{-6}$	$<6.43 \times 10^{-6}$	$<6.21 \times 10^{-6}$	$<6.19 \times 10^{-6}$
Chlorobenzene (C_6H_5Cl)				
µg	<0.0407	<0.0421	<0.0411	<0.0413
µg/dscm	<0.653	<0.686	<0.666	<0.668
µg/dscm @ 7% O_2	<0.917	<0.962	<0.946	<0.942
ppbvd	<0.139	<0.146	<0.142	<0.143
lb/hr	$<8.99 \times 10^{-5}$	$<9.90 \times 10^{-5}$	$<9.24 \times 10^{-5}$	$<9.37 \times 10^{-5}$
lb/1000 lb steam	$<1.32 \times 10^{-6}$	$<1.48 \times 10^{-6}$	$<1.36 \times 10^{-6}$	$<1.39 \times 10^{-6}$
Chlorodibromomethane ($CHBr_2Cl$)				
µg	<0.0530	<0.0514	<0.0502	<0.0515
µg/dscm	<0.850	<0.836	<0.813	<0.833
µg/dscm @ 7% O_2	<1.19	<1.17	<1.15	<1.17
ppbvd	<0.098	<0.096	<0.094	<0.096
lb/hr	$<1.17 \times 10^{-4}$	$<1.21 \times 10^{-4}$	$<1.13 \times 10^{-4}$	$<1.17 \times 10^{-4}$
lb/1000 lb steam	$<1.72 \times 10^{-6}$	$<1.80 \times 10^{-6}$	$<1.66 \times 10^{-6}$	$<1.73 \times 10^{-6}$

TABLE 4-5 CONTINUED
VOST EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Chloroform ($CHCl_3$)				
µg	<0.305	<0.323	<0.219	<0.282
µg/dscm	<4.90	<5.25	<3.55	<4.57
µg/dscm @ 7% O_2	<6.88	<7.38	<5.04	<6.43
ppbvd	<0.987	<1.058	<0.715	<0.920
lb/hr	$<6.75 \times 10^{-4}$	$<7.58 \times 10^{-4}$	$<4.92 \times 10^{-4}$	$<6.42 \times 10^{-4}$
lb/1000 lb steam	$<9.91 \times 10^{-6}$	$<1.13 \times 10^{-5}$	$<7.26 \times 10^{-6}$	$<9.50 \times 10^{-6}$
Chloromethane (CH_3Cl)				
µg	<0.214	<0.410	<0.370	<0.331
µg/dscm	<3.44	<6.67	<5.99	<5.37
µg/dscm @ 7% O_2	<4.82	<9.36	<8.51	<7.57
ppbvd	<1.64	<3.17	<2.85	<2.55
lb/hr	$<4.73 \times 10^{-4}$	$<9.63 \times 10^{-4}$	$<8.31 \times 10^{-4}$	$<7.56 \times 10^{-4}$
lb/1000 lb steam	$<6.94 \times 10^{-6}$	$<1.44 \times 10^{-5}$	$<1.23 \times 10^{-5}$	$<1.12 \times 10^{-5}$
Dichlorodifluoromethane (CCl_2F_2)				
µg	<0.118	<0.115	<0.115	<0.116
µg/dscm	<1.89	<1.87	<1.86	<1.88
µg/dscm @ 7% O_2	<2.66	<2.63	<2.64	<2.64
ppbvd	<0.376	<0.373	<0.369	<0.373
lb/hr	$<2.61 \times 10^{-4}$	$<2.71 \times 10^{-4}$	$<2.58 \times 10^{-4}$	$<2.63 \times 10^{-4}$
lb/1000 lb steam	$<3.83 \times 10^{-6}$	$<4.05 \times 10^{-6}$	$<3.80 \times 10^{-6}$	$<3.89 \times 10^{-6}$
1,2-Dichloroethane ($C_2H_4Cl_2$)				
µg	<0.0271	<0.0335	<0.0493	<0.0366
µg/dscm	<0.436	<0.545	<0.799	<0.593
µg/dscm @ 7% O_2	<0.611	<0.765	<1.13	<0.837
ppbvd	<0.106	<0.132	<0.194	<0.144
lb/hr	$<5.99 \times 10^{-5}$	$<7.87 \times 10^{-5}$	$<1.11 \times 10^{-4}$	$<8.31 \times 10^{-5}$
lb/1000 lb steam	$<8.80 \times 10^{-7}$	$<1.18 \times 10^{-6}$	$<1.63 \times 10^{-6}$	$<1.23 \times 10^{-6}$
Methylene Chloride (CH_2Cl_2)				
µg	<0.923	<0.884	<0.781	<0.863
µg/dscm	<14.8	<14.4	<12.6	<13.9
µg/dscm @ 7% O_2	<20.8	<20.2	<18.0	<19.7
ppbvd	<4.19	<4.07	<3.58	<3.95
lb/hr	$<2.04 \times 10^{-3}$	$<2.08 \times 10^{-3}$	$<1.75 \times 10^{-3}$	$<1.96 \times 10^{-3}$
lb/1000 lb steam	$<2.99 \times 10^{-5}$	$<3.10 \times 10^{-5}$	$<2.59 \times 10^{-5}$	$<2.89 \times 10^{-5}$

TABLE 4-5 CONTINUED
VOST EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Styrene (C_8H_8)				
µg	<0.0234	<0.0283	<0.0259	<0.0259
µg/dscm	<0.375	<0.461	<0.419	<0.418
µg/dscm @ 7% O_2	<0.527	<0.647	<0.595	<0.590
ppbvd	<0.087	<0.106	<0.097	<0.097
lb/hr	$<5.16 \times 10^{-5}$	$<6.66 \times 10^{-5}$	$<5.81 \times 10^{-5}$	$<5.88 \times 10^{-5}$
lb/1000 lb steam	$<7.58 \times 10^{-7}$	$<9.95 \times 10^{-7}$	$<8.57 \times 10^{-7}$	$<8.70 \times 10^{-7}$
Tetrachloroethene (C_2Cl_4)				
µg	<0.0593	<0.0633	<0.156	<0.0929
µg/dscm	<0.951	<1.03	<2.53	<1.50
µg/dscm @ 7% O_2	<1.34	<1.45	<3.60	<2.13
ppbvd	<0.138	<0.149	<0.367	<0.218
lb/hr	$<1.31 \times 10^{-4}$	$<1.49 \times 10^{-4}$	$<3.51 \times 10^{-4}$	$<2.10 \times 10^{-4}$
lb/1000 lb steam	$<1.92 \times 10^{-6}$	$<2.22 \times 10^{-6}$	$<5.18 \times 10^{-6}$	$<3.11 \times 10^{-6}$
Toluene (C_7H_8)				
µg	0.303	<0.298	<0.416	<0.339
µg/dscm	4.86	<4.85	<6.74	<5.48
µg/dscm @ 7% O_2	6.82	<6.81	<9.57	<7.73
ppbvd	1.27	<1.27	<1.76	<1.43
lb/hr	6.68×10^{-4}	$<7.01 \times 10^{-4}$	$<9.35 \times 10^{-4}$	$<7.68 \times 10^{-4}$
lb/1000 lb steam	9.82×10^{-6}	$<1.05 \times 10^{-5}$	$<1.38 \times 10^{-5}$	$<1.14 \times 10^{-5}$
Trichloroethene (C_2HCl_3)				
µg	<0.0429	<0.0494	<0.0464	<0.0462
µg/dscm	<0.688	<0.804	<0.751	<0.748
µg/dscm @ 7% O_2	<0.966	<1.13	<1.07	<1.05
ppbvd	<0.124	<0.145	<0.135	<0.135
lb/hr	$<9.47 \times 10^{-5}$	$<1.16 \times 10^{-4}$	$<1.04 \times 10^{-4}$	$<1.05 \times 10^{-4}$
lb/1000 lb steam	$<1.39 \times 10^{-6}$	$<1.74 \times 10^{-6}$	$<1.54 \times 10^{-6}$	$<1.55 \times 10^{-6}$
Trichlorofluoromethane (CCl_3F)				
µg	<0.0735	<0.0737	<0.0711	<0.0728
µg/dscm	<1.18	<1.20	<1.15	<1.18
µg/dscm @ 7% O_2	<1.66	<1.68	<1.63	<1.66
ppbvd	<0.206	<0.210	<0.201	<0.206
lb/hr	$<1.62 \times 10^{-4}$	$<1.73 \times 10^{-4}$	$<1.60 \times 10^{-4}$	$<1.65 \times 10^{-4}$
lb/1000 lb steam	$<2.38 \times 10^{-6}$	$<2.59 \times 10^{-6}$	$<2.35 \times 10^{-6}$	$<2.44 \times 10^{-6}$

TABLE 4-5 CONTINUED
VOST EMISSIONS RESULTS -
UNIT 2

Run Number	1	2	3	Average
Vinyl Chloride (C_2H_3Cl)				
µg	<0.0641	<0.0720	<0.0767	<0.0709
µg/dscm	<1.03	<1.17	<1.24	<1.15
µg/dscm @ 7% O_2	<1.45	<1.65	<1.76	<1.62
ppbvd	<0.396	<0.451	<0.478	<0.441
lb/hr	$<1.42 \times 10^{-4}$	$<1.69 \times 10^{-4}$	$<1.72 \times 10^{-4}$	$<1.61 \times 10^{-4}$
lb/1000 lb steam	$<2.08 \times 10^{-6}$	$<2.53 \times 10^{-6}$	$<2.54 \times 10^{-6}$	$<2.38 \times 10^{-6}$
m,p-Xylene (C_8H_{10})				
µg	<0.0577	<0.0552	<0.0520	<0.0550
µg/dscm	<0.926	<0.898	<0.841	<0.889
µg/dscm @ 7% O_2	<1.30	<1.26	<1.20	<1.25
ppbvd	<0.210	<0.203	<0.191	<0.201
lb/hr	$<1.27 \times 10^{-4}$	$<1.30 \times 10^{-4}$	$<1.17 \times 10^{-4}$	$<1.25 \times 10^{-4}$
lb/1000 lb steam	$<1.87 \times 10^{-6}$	$<1.94 \times 10^{-6}$	$<1.72 \times 10^{-6}$	$<1.84 \times 10^{-6}$

5.0 INTERNAL QA/QC ACTIVITIES

5.1 QA/QC AUDITS

The meter boxes and sampling trains used during sampling performed within the requirements of their respective methods. All post-test leak checks, minimum metered volumes, and minimum sample durations met the applicable QA/QC criteria.

EPA Method 3A calibration audits were all within the measurement system performance specifications for the calibration drift checks, system calibration bias checks, and calibration error checks.

EPA Method 26A analytical QA/QC results are included in the laboratory report. The method QA/QC criteria were met.

BAAQMD Method ST-1B analytical QA/QC results are included in the laboratory report. The method QA/QC criteria were met.

CARB Method 430 analytical QA/QC results are included in the laboratory report. The method QA/QC criteria were met.

EPA SW846 Method 0031 analytical QA/QC results are included in the laboratory report. The method QA/QC criteria were met, except where noted in Section 5.2.

5.2 QA/QC DISCUSSION

The following notes were provided by Eurofins TestAmerica in the Method 0031 Job Narrative (see Appendix C.4).

- Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 140-56885. The laboratory analyzed the laboratory control spike and laboratory control spike duplicate (LCS/LCSD).
- The method requirement for no headspace was not met. The following volatile samples were analyzed with significant headspace in their sample container(s): M0031 RUN 1 CONDENSATE, M0031 RUN 2 CONDENSATE, M0031 RUN 3 CONDENSATE. Significant headspace is defined as a bubble greater than 6 mm in diameter.
- The following analyte(s) recovered outside control limits for the LCSD associated with analytical batch 140-57159: 1,3,5-Tri-methylbenzene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.
- The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 140-57494 recovered outside control limits for the following analytes: 1,2-Dibromo-3-Chloropropane and 1,2,3-Trichlorobenzene
- Several analytes were outside the recovery range for the client provided audit sample. The audit sample was reanalyzed for confirmation with similar results. Both sets of results were reported. All method criteria were met.

All other QA/QC criteria were met during this test program.

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 included in the report appendices. The content of this report is modeled after the EPA Emission Measurement Center Guideline Document (GD-043).

APPENDIX A
FIELD DATA AND CALCULATIONS

Appendix A.1
Sampling Locations

MONTROSE AIR QUALITY SERVICES

EPA METHOD 1 FIELD DATA

Project Information

Client / Facility: COVANTA Marion — Date: 12.6.2021

Source / Location: Unit 2 — Data taken by: PB / SW

Circular/Elliptical Duct Measurements

	Port 1	Port 2	Port 3	Port 4
Far wall to outside of port distance, in.:	53.5	53.5		
Port length, in. (confirm flush with inside wall):	5.5	5.5		
Duct inner diameter, in.:	48	48		
Port diameter, in.:	4.0	4.0		
Upstream distance (A), in.:	1440.0			
Downstream distance (B), in.:	1200.0			
Number of ports (must be 90° to each other):	2			

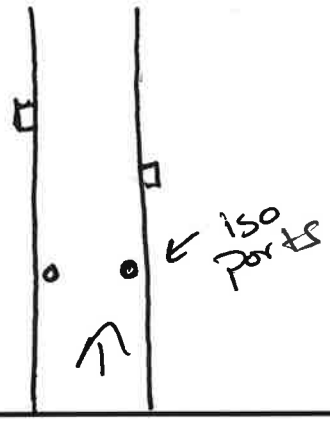
Duct Parameters

Material (steel, fiberglass, PVC)	Steel
Type of port (flange, npt nipple, etc.)	Nipple
Orientation (vertical, horizontal, if diagonal specify angle)	Vertical
Elevation of ports above ground, ft.	~140

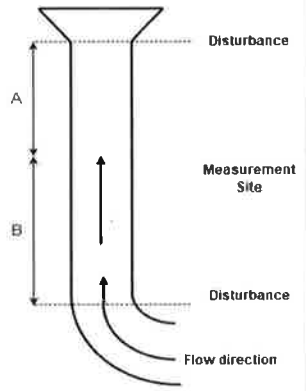
Cyclonic flow expected?	NO
Pitot ID	176-TP-6
Manometer ID	MB-30
Angle finder / protractor ID	700

Traverse point	Outside port distance, in.	Null angle, α
1	7.6	3
2	12.5	2
3	19.7	3
4	39.3	1
5	46.5	4
6	51.4	7
1	7.6	1
2	12.5	4
3	19.7	3
4	39.3	4
5	46.5	9
6	51.4	14
Average of absolute α		

Diagram of duct and sampling location



Example:

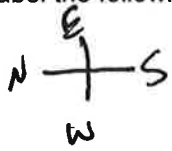


Cross-section sketch showing port locations and numbering

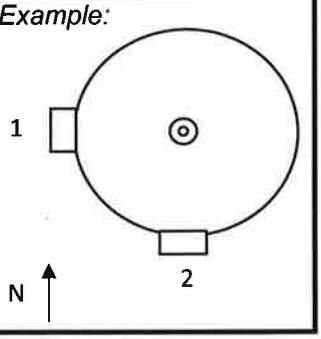
Label the following: port number 1, 2, etc.

north direction or other landmark

flow direction - ⊗ into page ⊙ out of page



Example:

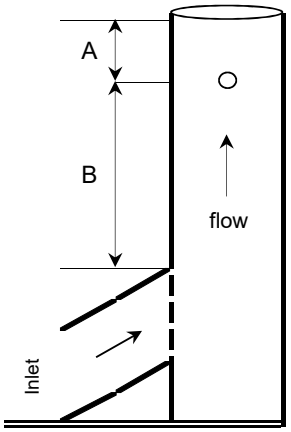


*For stacks having diameters greater than 24 in., no traverse points shall be within 1.00 in. of the stack walls; and for stack diameters equal to or less than 24 in., no traverse points shall be located within 0.50 in. - EPA Method 1 section 11.3.1 & 11.3.2

**If schematics are unavailable, internal width can be estimated by measuring the portion of the port length not visible on the outside of the duct, which would be an estimate of the insulation thickness. Double this distance and subtract it from the outside width.

Covanta Marion / Unit 2 Stack
TRAVERSE POINT LAYOUT (PARTICULATE)
CIRCULAR STACKS OVER 24 INCHES

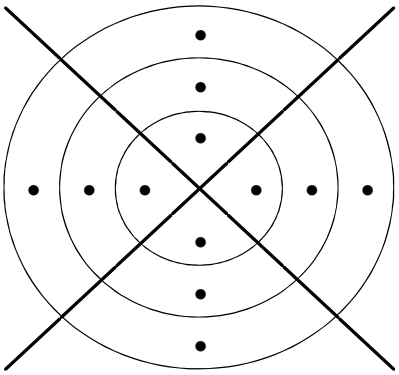
Stack diameter:	**48.0**	***inches***
Upstream diameter (A):	**1440.0**	***inches***
Downstream diameter (B):	**1200.0**	***inches***
Port length:	**5.50**	***inches***
Number of ports being used:	**2**	***see note***
Equivalent upstream diameter (A):	**30.000**	***Pass***
Equivalent downstream diameter (B):	**25.000**	***Pass***
All points at least 1.0" from stack wall:	**2.112**	***Pass***
Total points:	**12**	
Points per port:	**6**	



Typical vertical exhaust stack

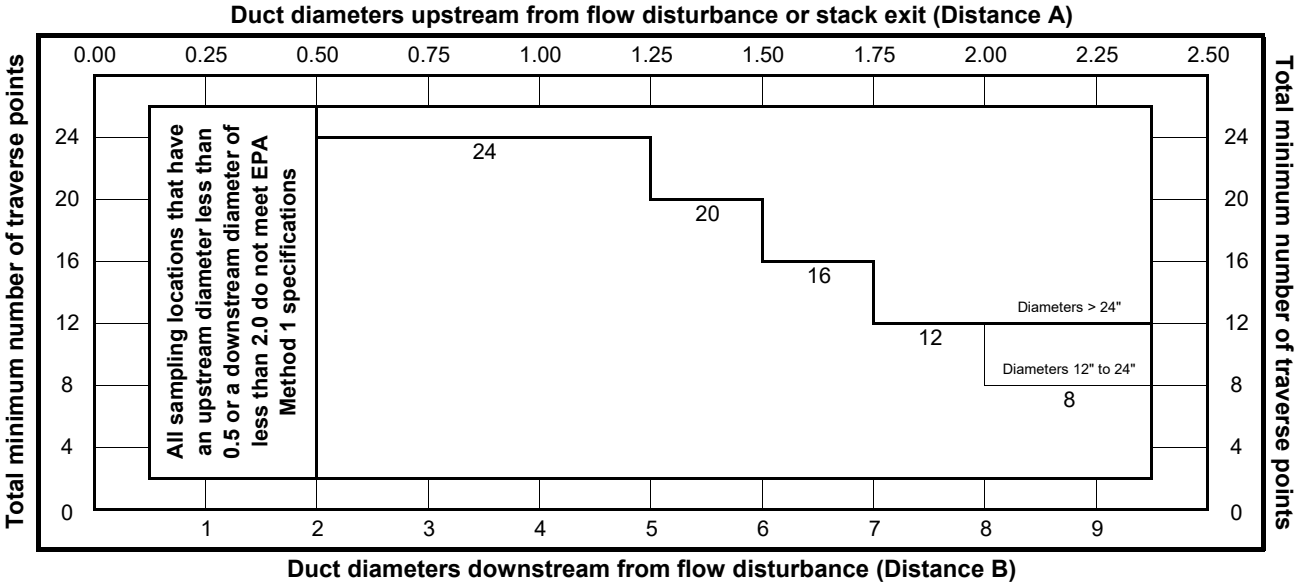
Point	% Diameter	Inside wall Distance (in)	Outside port Distance (in)
1	4.4	2.1	7.6
2	14.6	7.0	12.5
3	29.6	14.2	19.7
4	70.4	33.8	39.3
5	85.4	41.0	46.5
6	95.6	45.9	51.4
N/A	#N/A	#N/A	#N/A
N/A	#N/A	#N/A	#N/A
N/A	#N/A	#N/A	#N/A
N/A	#N/A	#N/A	#N/A
N/A	#N/A	#N/A	#N/A
N/A	#N/A	#N/A	#N/A

DUCT AREA = 12.566 ft^2



Example: Location of 12 points

Note: No traverse point shall be within 1.0" of the stack walls (see EPA 1 section 11.3.1). Points automatically adjusted to meet this criterion.



Appendix A.2
Hydrogen Halides & Halogen Data Sheets

Chronic

MONTROSE AIR QUALITY SERVICES

EPA Method 26A Field Datasheet (Isokinetic)

Page 1 of 1

Project Information

Date 12/8/21 Project # PROJ-010935

Customer/Facility Covanta

Unit ID/Sample Location #2 South

Run # 1 Operator AG

Sampling Conditions

Static Pressure, in. H_2O -1.6 Ambient Temp, °F 46

Barometric Pressure, in. Hg 29.70 Ref. Barometer ID NOAA

Wind Speed / Direction 10 W Precipitation (Y) N, type Light

Probe / Filter Temp Range, °F 248-273

Sampling Equipment IDs

Meterbox ID MB24

Umbilical ID PDX-UD-2

Nozzle ID —

Pitot / Probe ID 007

Manometer ID MB24

Sensitivity 0.01

Calibration

Meterbox Y 1.0201

Meterbox ΔH@, in. H_2O 1.6051

Nozzle diameter, Dn, in. —

Pitot coefficient, Cp 0.84

Manometer zero and level ☑ yes

K-Factor —

Equipment Checks

	Pre	Mid	Post
Pitot (+), pass @ in. H_2O	☑ @ 4	☐ @	☑ @ 5
Pitot (-), pass @ in. H_2O	☑ @ 3.5	☐ @	☑ @ 4
Pitot visual inspection	☑ pass	☐ pass	☑ pass
Nozzle visual inspection	☑ pass	☐ pass	☑ pass
Meter, cfm @ in. Hg	0.001 @ 10	@	0.001 @ 11
Intermediate leak check volume, ft^3	/	/	/

ALT 011 TC ID:

	Ambient °F	Ref. °F
Stack		
Probe		
Filter Box	See Final Run	
Filter Exit		
Meter outlet		
Impinger Exit		
Other		

Ref. Thermometer ID

Continuity Check ☐ Continuity w/ Proper Polarity

Notes:

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft^3	Velocity Head, ΔP in H_2O	Orifice Pressure Differential, ΔH Target	Orifice Pressure Differential, ΔH Actual	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F Box	Filter Temp, °F Exit	Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F Inlet	Dry Gas Meter Temperature, °F Outlet	Pump Vacuum, in. Hg
1	0	0937	572.467	0.95	1.5	1.5	261	249	247	251	50		52	3.0
2	5		575.59	1.4			267	248	250	253	47		52	3.0
3	10		579.26	1.5			267	248	250	255	48		52	3.0
4	15		583.41	1.4			269	253	249	255	50		52	3.0
5	20		586.35	1.3			271	250	247	253	51		53	3.0
6	25		589.49	1.3			263	249	247	254	51		53	3.0
1	30		593.72	1.3			265	249	249	256	52		53	3.0
2	35		596.35	1.7			269	248	248	255	52		53	3.0
3	40		599.73	1.9			271	248	250	256	53		54	3.0
4	45		603.19	1.8			272	249	249	253	53		54	3.0
5	50		606.68	1.7			270	256	248	252	54		54	3.0
6	55		610.18	1.2			265	251	249	253	54		55	3.0
	60	1037	613.675											
Averages														

QA/QC Check: Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Checked By PB Team Leader PB

001AS-QM

Flows Done with pitot 176-TR6

Chromic

MONTROSE AIR QUALITY SERVICES

EPA Method 26A Field Datasheet (Isokinetic)

Project Information
Date 12/8/21 Project # PROJ-010935
Customer/Facility Covanta
Unit ID/Sample Location #2 South
Run # 2 Operator AG

Sampling Conditions
Static Pressure, in. H_2O -1.6 Ambient Temp, °F 47
Barometric Pressure, in. Hg 29.70 Ref. Barometer ID NOAA
Wind Speed / Direction 11/W Precipitation, Y (N) type None
Probe / Filter Temp Range, °F 248-273

ALT 011 TC ID:

	Ambient °F	Ref. °F
Stack		
Probe	Stack	
Filter Box		
Filter Exit	Final	
Meter outlet	Run	
Impinger Exit		
Other		

Ref. Thermometer ID
Continuity Check ☐ Continuity w/ Proper Polarity
Notes:

Sampling Equipment IDs
Meterbox ID MB24
Umbilical ID PDX-40-2
Nozzle ID —
Pitot / Probe ID 007
Manometer ID MB24
Sensitivity 0.01

Calibration
Meterbox Y 1.02.01
Meterbox ΔH@, in. H_2O 1.6081
Nozzle diameter, Dn, in. —
Pitot coefficient, Cp 0.84
Manometer zero and level ☑ yes
K-Factor —

Equipment Checks

	Pre	Mid	Post
Pitot (+), pass @ in. H_2O	☑ @ 4	☐ @ —	☑ @ 4
Pitot (-), pass @ in. H_2O	☑ @ 4	☐ @ —	☑ @ 4
Pitot visual inspection	☑ pass	☐ pass	☑ pass
Nozzle visual inspection	☑ pass	☐ pass	☑ pass
Meter, cfm @ in. Hg	0.001 @ 10"	— @ —	0.001 @ 12"
Intermediate leak check volume, ft^3	/	/	/

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft^3	Velocity Head, ΔP in H_2O	Orifice Pressure Differential, ΔH Target	Orifice Pressure Differential, ΔH Actual	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F Box	Filter Temp, °F Exit	Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F Inlet	Dry Gas Meter Temperature, °F Outlet		Pump Vacuum, in. Hg
1	0	1173	613.896	1.3	1.5	1.5	263	248	249	250	51		54		5.0
2	5		617.32	1.8			270	248	248	253	51		55		5.0
3	10		629.39	1.8			273	249	248	256	53		55		5.0
4	15		624.41	1.6			273	250	248	257	54		55		5.0
5	20		627.82	1.5			273	248	248	249	54		56		5.0
6	25		631.38	1.5			264	249	248	252	55		56		5.0
1	30		634.71	1.5			258	248	248	254	54		56		5.0
2	35		638.14	1.6			269	249	248	253	52		57		5.0
3	40		641.52	1.7			272	249	248	252	49		58		5.0
4	45		645.09	1.8			274	248	248	253	48		58		5.0
5	50		648.55	1.6			275	249	249	255	48		58		5.0
6	55		652.01	1.3			260	249	249	254	48		59		5.0
	60	1223	655.461												
Averages															

QA/QC Check: Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Checked By PB Team Leader PB

001AS-QMS-FM-225

Flows Done with pitot 176-TP-6

MONTROSE AIR QUALITY SERVICES

Chromic

EPA Method 26A Field Datasheet (Isokinetic)

Project Information

Date 12/8/21 Project # PROJ-010935

Customer/Facility Covanta

Unit ID/Sample Location #2 South

Run # 3 Operator AG

Sampling Conditions

Static Pressure, in. H_2O -.6 Ambient Temp, °F 43

Barometric Pressure, in. Hg 29.70 Ref. Barometer ID NOAA

Wind Speed / Direction 4 W Precipitation, Y / (N) type None

Probe / Filter Temp Range, °F 248-273

Sampling Equipment IDs

Meterbox ID MB24

Umbilical ID PDX-40-2

Nozzle ID —

Pitot / Probe ID ~~S-2~~ 007

Manometer ID MB24

Sensitivity 0.01

Calibration

Meterbox Y 1.0201

Meterbox ΔH@, in. H_2O 1.6081

Nozzle diameter, Dn, in. —

Pitot coefficient, Cp 0.84

Manometer zero and level ☑ yes

K-Factor —

Equipment Checks

	Pre	Mid	Post
Pitot (+), pass @ in. H_2O	☑ @ 4	☐ @ —	☑ @ 3.5
Pitot (-), pass @ in. H_2O	☑ @ 5	☐ @ —	☑ @ 5
Pitot visual inspection	☑ pass	☐ pass	☑ pass
Nozzle visual inspection	☑ pass	☐ pass	☑ pass
Meter, cfm @ in. Hg	0.001 @ 9	@	0.001 @ 11
Intermediate leak check volume, ft^3		/	/

ALT 011 TC ID:

	Ambient °F	Ref. °F
Stack 007	66	66.4
Probe 007	66	66.4
Filter Box SEA-05-1	67	66.4
Filter Exit 6451	67	66.4
Meter outlet MB24	67	66.4
Impinger Exit 1-31	66	66.4
Other		

Ref. Thermometer ID 210187011

Continuity Check ☑ Continuity w/ Proper Polarity

Notes:

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft^3	Velocity Head, ΔP in H_2O	Orifice Pressure Differential, ΔH Target	Orifice Pressure Differential, ΔH Actual	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F Box	Filter Temp, °F Exit	Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F Inlet	Dry Gas Meter Temperature, °F Outlet		Pump Vacuum, in. Hg
1	0	~~1633~~ +313	655.855	1.2	1.5	1.5	260	249	248	251	51		52		4.0
2	5		659.22	1.5			262	248	248	253	44		52		4.0
3	10		662.62	1.6			263	248	249	255	45		52		4.0
4	15		666.15	1.8			265	248	248	253	47		52		4.0
5	20		669.35	1.5			267	249	249	255	48		52		4.0
6	25		672.66	1.2			263	248	248	252	49		53		4.0
1	30		676.02	1.2			263	249	248	254	50		53		4.0
2	35		679.28	1.5			265	249	248	256	50		53		4.0
3	40		682.59	1.6			267	249	248	252	50		53		4.0
4	45		685.85	1.7			266	248	248	254	50		54		4.0
5	50		689.13	1.6			268	249	249	255	50		54		4.0
6	55		693.02	1.3			260	249	248	252	50		55		4.0
	60	1728	696.252												
Averages															

QA/QC Check: Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Checked By PD Team Leader PD

Flows Done with pito 176 TR6

MONTROSE AIR QUALITY SERVICES

Unit 2 26A Chronic

Sample Recovery & Calibration Check Datasheet

Project Information

Date 12/08/21 Project # PROJ-010935

Customer / Facility Covanta

Unit ID / Sample Location Unit 2 26A Chronic

Run # R-1-3 EPA 26 Operator EC

Equipment Identification

Ref. Thermometer NOAA

Hygrometer

Field Balance 23350312

Check Weights 106410

Calipers /

Balance Audit (Field balance must be within 0.5g of check weight mass)

Date	12.7.2021	12.8.2021	
Standard mass, g	500.0	500.0	
Field balance mass, g	499.9	499.9	

Ambient Conditions (Mobile Lab)

Relative humidity, %

Temperature, °F 68

Mobile lab # Sprinter VAN

Moisture Determination

	Contents	Run1 Initial	Run1 Final	Run1 Net	Run 2 Initial	Run 2 Final	Run 2 Net	Run 3 Initial	Run 3 Final	Run 3 Net
Knockout										
Impinger 1	0.1 H_2SO_4	692.6	812.0	119.4	715.2	847.0	131.8	692.8	827.6	134.8
Impinger 2	0.1N H_2SO_4	759.2	800.3	41.1	710.4	734.9	24.5	760.3	792.5	32.2
Impinger 3	0.1N NaOH	693.3	699.3	6.0	723.0	726.8	3.8	696.1	699.5	3.4
Impinger 4	0.1N NaOH	694.9	698.3	3.4	729.3	730.9	1.6	699.9	701.9	2.0
Impinger 5										
Impinger 6										
Impinger 7										
Impinger 8										
Silica Gel	S.G	939.3	945.6	6.3	984.7	994.7	10.0	945.6	951.3	5.7
Line Rinse										
Train Net Gain (Vlc)				176.2			171.7			178.1

Nozzle Measurements (Difference between any two measurements must not be more than 0.004 in (0.1 mm))

Nozzle 1 diameters / D1 / D2 / D3 / Average

Nozzle 2 diameters / D1 / D2 / D3 / Average

Nozzle 3 diameters / D1 / D2 / D3 / Average

Nozzle Material ☐ quartz ☑ glass ☐ steel ☐ titanium ☐ inconel ☐ other

Probe Type ☑ heated ☐ unheated ☐ air-cooled ☐ water-cooled ☐ other

Probe Liner ☐ quartz ☑ glass ☐ steel ☐ Teflon ☐ other

Filter Information

Front Half: ☑ quartz fiber ☐ glass fiber ☐ Teflon ☐ Teflon/quartz ☐ other

Filter Number: Run 1: N/A Run 2: N/A Run 3: N/A Run :

Back Half: ☐ quartz fiber ☐ glass fiber ☐ Teflon ☐ Teflon/quartz ☐ other

Reagent Information

Type	Lot Number
0.1N H_2SO_4	60030
0.1N NaOH	Q093002
DI	R000591

Sample Observations

QA/QC Check: Completeness ____ Legibility ____ Accuracy ____ Specifications ____

Checked by: Team Leader:

001AS-QMS-FM-226

Appendix A.3
Ammonia Data Sheets

MONTROSE AIR QUALITY SERVICES

STIB. Method NH3. Field Datasheet (Isokinetic)

Page 1 of 1

Project Information

Date 12/8/21 Project # PROJ-010935

Customer/Facility Covanta

Unit ID/Sample Location 2 South.

Run # 1 Operator SW

Sampling Conditions

Static Pressure, in. H_2O —

Ambient Temp, °F 49°F

Barometric Pressure, in. Hg 29.70

Ref. Barometer ID —

Wind Speed / Direction —

Precipitation, Y / N, type —

Probe / Filter Temp Range, °F —

ALT 011 TC ID:

	Ambient °F	Ref. °F
Stack		
Probe		
Filter Box	See	
Filter Exit	Final	
Meter outlet		
Impinger Exit	Run	
Other		

Ref. Thermometer ID

Continuity Check ☐ Continuity w/ Proper Polarity

Notes:

Sampling Equipment IDs

Meterbox ID MB31

Umbilical ID PDX 50-1

Nozzle ID —

Pitot / Probe ID MB31

Manometer ID ~~PDX 50-1~~ SGW 12-8

Sensitivity —

Calibration

Meterbox Y 0.9902

Meterbox ΔH@, in. H_2O 1.8162

Nozzle diameter, Dn, in. —

Pitot coefficient, Cp 0.84

Manometer zero and level ☑ yes

K-Factor Constant 1.4.

Equipment Checks

	Pre	Mid	Post
Pitot (+), pass @ in. H_2O	~~☐ @~~	~~☐ @~~	~~☐ @~~
Pitot (-), pass @ in. H_2O	~~☐ @~~	~~☐ @~~	~~☐ @~~
Pitot visual inspection	~~☐ pass~~	~~☐ pass~~	~~☐ pass~~
Nozzle visual inspection	~~☐ pass~~	~~☐ pass~~	~~☐ pass~~
Meter, cfm @ in. Hg	0.008 @ 15"	~~@~~	0.005 @ 13"
Intermediate leak check volume, ft^3	—	—	—

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft^3	Velocity Head, ΔP in H_2O	Orifice Pressure Differential, ΔH Target	Orifice Pressure Differential, ΔH Actual	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F Box	Filter Temp, °F Exit	Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F Inlet	Dry Gas Meter Temperature, °F Outlet		Pump Vacuum, in. Hg
1	0	0937	091.482.	N/A	1.4	1.4	~~43~~ SGW 12-8 N/A	N/A	N/A	N/A	43	N/A	52.		3.
	5		94.71								43.		51.		3.
	10		97.90.								43.		51.		3.
	15		101.12.								~~43~~.		50.		3.
	20		104.32.								42.		49.		3.
	25		107.55.								43.		49.		3.
	30		110.80.								43.		49.		3.
	35		113.91.								43.		50.		3.
	40		117.07								43.		52.		3.
	45		120.25.								42.		53.		4.
	50		123.45.								43.		55.		4.
	55		126.65.								43.		57.		4.
	60.	1037.	129.858.												
Averages															

QA/QC Check: Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Checked By RB Team Leader RB

001AS-QMS-FM-225

MONTROSE AIR QUALITY SERVICES

ST1B Method NH3. Chrom. C Field Datasheet (Isokinetic)

Page 1 of 1

Project Information
Date 12/8/21 Project # PROJ-010935.
Customer/Facility Covanta.
Unit ID/Sample Location 2 SOUTH.
Run # 2. Operator SW.

Sampling Conditions
Static Pressure, in. H_2O —
Ambient Temp, °F 57.
Barometric Pressure, in. Hg 29.70 Ref. Barometer ID —
Wind Speed / Direction — Precipitation, Y (N), type —
Probe / Filter Temp Range, °F —

ALT 011 TC ID:

	Ambient °F	Ref. °F
Stack		
Probe		
Filter Box	See	
Filter Exit		
Meter outlet	Final	
Impinger Exit	Run	
Other		

Ref. Thermometer ID
Continuity Check ☐ Continuity w/ Proper Polarity
Notes:

Sampling Equipment IDs
Meterbox ID MB31
Umbilical ID PDX 50-1
Nozzle ID —
Pitot / Probe ID —
Manometer ID MB31
Sensitivity —

Calibration
Meterbox Y 0.9902.
Meterbox ΔH@, in. H_2O 1.8162
Nozzle diameter, Dn, in. —
Pitot coefficient, Cp 0.84
Manometer zero and level ☑ yes
K-Factor Constant 1.4.

Equipment Checks

	Pre	Mid	Post
Pitot (+), pass @ in. H_2O	☐ @	☐ @	☐ @
Pitot (-), pass @ in. H_2O	☐ @	☐ @	☐ @
Pitot visual inspection	☐ pass	☐ pass	☐ pass
Nozzle visual inspection	☐ pass	☐ pass	☐ pass
Meter, cfm @ in. Hg	0.010 @ 12"	@	0.009 @ 13"
Intermediate leak check volume, ft^3	— /	— /	— /

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft^3	Velocity Head, ΔP in H_2O	Orifice Pressure Differential, ΔH Target	Orifice Pressure Differential, ΔH Actual	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F Box	Filter Temp, °F Exit	Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F Inlet	Dry Gas Meter Temperature, °F Outlet		Pump Vacuum, in. Hg
1	0	1123	130.234	N/A	1.4	1.4	N/A	N/A	N/A	N/A	44.	N/A	62.		3.
	5		133.51.								43.		63.		3.
	10		136.71.								43.		65.		3.
	15		139.90.								43.		66.		3.
	20		143.20								43.		68.		3.
	25		146.35.								43.		68.		3.
	30		149.60.								42.		68.		3.
	35		152.75.								43.		70.		3.
	40		156.00.								43.		67.		3.
	45		159.20								42.		65.		3.
	50		162.40.								42.		63.		3.
	55		165.61.								43.		63.		3.
	60.	1223.	168.799								—		—		—
Averages															

QA/QC Check: Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Checked By PBS Team Leader PBS

001AS-QMS-FM-225

MONTROSE AIR QUALITY SERVICES

STIB Method NH3. Field Datasheet (Isokinetic)

Project Information
Date 12/8/21 Project # PROJ-010935.
Customer/Facility Covanta.
Unit ID/Sample Location 2 South
Run # 3. Operator SN

Sampling Conditions
Static Pressure, in. H_2O -1.6 Ambient Temp, °F 78
Barometric Pressure, in. Hg 29.70. Ref. Barometer ID —
Wind Speed / Direction — Precipitation, Y / (N), type —
Probe / Filter Temp Range, °F —

ALT 011	TC ID:	Ambient °F	Ref. °F
Stack	/		
Probe	/		
Filter Box	/		
Filter Exit	/		
Meter outlet	MB31	66	66.4
Impinger Exit	GN-057	66	66.4
Other	/		

Ref. Thermometer ID —
Continuity Check ☐ Continuity w/ Proper Polarity
Notes: —

Sampling Equipment IDs
Meterbox ID MB31
Umbilical ID PDX 50-1
Nozzle ID —
Pitot / Probe ID —
Manometer ID MB31
Sensitivity —

Calibration
Meterbox Y 0.9902.
Meterbox ΔH@, in. H_2O 1.8162.
Nozzle diameter, Dn, in. —
Pitot coefficient, Cp 0.84
Manometer zero and level, ☑ yes
K-Factor Constant 1.4.

Equipment Checks

	Pre	Mid	Post
Pitot (+), pass @ in. H_2O	☐ ~~@~~	☐ ~~@~~	☐ ~~@~~
Pitot (-), pass @ in. H_2O	☐ ~~@~~	☐ ~~@~~	☐ ~~@~~
Pitot visual inspection	☐ ~~pass~~	☐ ~~pass~~	☐ ~~pass~~
Nozzle visual inspection	☐ ~~pass~~	☐ ~~pass~~	☐ ~~pass~~
Meter, cfm @ in. Hg	0.015 @ 12"	~~@~~	0.012 @ 11"
Intermediate leak check volume, ft^3	— /	— /	— /

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft^3	Velocity Head, ΔP in H_2O	Orifice Pressure Differential, ΔH Target	Orifice Pressure Differential, ΔH Actual	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F Box	Filter Temp, °F Exit	Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F Inlet	Dry Gas Meter Temperature, °F Outlet		Pump Vacuum, in. Hg
1	0	1313	170.001	N/A	1.4	1.4	N/A	N/A	N/A	N/A	44.	N/A	82.		4.
	5		173.31.								44.		81.		4.
	10		176.60.								43.		81.		4.
	15		179.85.								43.		78.		4.
	20		183.13.								44.		78		4.
	25		186.40								43.		77		4.
	30		189.70.								42.		74.		4.
	35		192.90.								42.		76.		4.
	40		196.10								43.		76.		4.
	45		199.36.								43.		77		4.
	50		202.60								43.		73.		4.
	55		205.85.								43.		72.		4.
	60	1413.	209.100								—		—		—
Averages															

QA/QC Check: Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Checked By PB Team Leader PB

ST1-B

MONTROSE AIR QUALITY SERVICES

Sample Recovery & Calibration Check Datasheet

Page 1 of 1

Project Information

Date 12/8/21 Project # PROJ-010935

Customer / Facility Covanta Marion, Inc

Unit ID / Sample Location U2 St-1B

Run # R1-3 · St-1B Operator EC

Equipment Identification

Ref. Thermometer NOAA

Hygrometer

Field Balance 23350312

Check Weights 10640

Calipers

Balance Audit (Field balance must be within 0.5g of check weight mass)

Date 12/8/2021

Standard mass, g 500.0

Field balance mass, g 499.9

Ambient Conditions (Mobile Lab)

Relative humidity, %

Temperature, °F 68

Mobile lab # Sprinter Van

Moisture Determination

		Run1			Run 2			Run 3		
	Contents	Initial	Final	Net	Initial	Final	Net	Initial	Final	Net
Knockout										
Impinger 1	0.1N HCl	708.1	858.1	150.0	756.7	893.1	136.4	709.4	859.5	150.1
Impinger 2	0.1N HCl	733.0	735.9	2.9	736.1	740.5	4.4	732.9	736.4	3.5
Impinger 3	Empty	614.8	~~732.9~~ 615.8 12/8	1.0	657.2	658.3	1.1	616.7	618.1	1.4
Impinger 4										
Impinger 5										
Impinger 6										
Impinger 7										
Impinger 8										
Silica Gel	S.G	909.0	917.2	8.2	810.9	818.5	7.6	917.2	923.2	6.0
Line Rinse										
Train Net Gain (Vlc)				162.1			149.5			161.0

Nozzle Measurements (Difference between any two measurements must not be more than 0.004 in (0.1 mm))

Nozzle 1 diameters D1 D2 D3 Average

Nozzle 2 diameters D1 D2 D3 Average

Nozzle 3 diameters D1 D2 D3 Average

Nozzle Material ☐ quartz ☐ glass ☐ steel ☑ titanium ☐ inconel ☐ other

Probe Type ☐ heated ☑ unheated ☐ air-cooled ☐ water-cooled ☐ other

Probe Liner ☐ quartz ☑ glass ☐ steel ☐ Teflon ☐ other

Filter Information

Front Half: ☐ quartz fiber ☐ glass fiber ☐ Teflon ☐ Teflon/quartz ☐ other

Filter Number: Run 1: Run 2: Run 3: Run :

Back Half: ☐ quartz fiber ☐ glass fiber ☐ Teflon ☐ Teflon/quartz ☐ other

Reagent Information

Type	Lot Number
0.1N HCl	61181
Type 1 H_2O	R000591

Sample Observations

QA/QC Check: Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓

Checked by: RB Team Leader: RB

001AS-QMS-FM-226

Appendix A.4
Aldehydes Data Sheets

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta — Page: 2 of 7

Source / Location: 2 South — Method: CARB 430

Run no.: 1 — Date: 12/8/21 — Operator / Assistant: [illegible] — Project No.: [illegible]

Equipment Identification

Meter console ID	LFCB2
Critical orifice ID	—
Rotameter ID	LFCB2
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	—
Side B Meter Yd	1.004
Orifice choked flow rate	500

ALT-011 TC Check

Std. TC ID	
Std. TC temp., °F	
Stack TC temp., °F	
Continuity check + or -	

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 5 — Side B — @ —

Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B / can — / —

Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A — @ — — Side B — @ —

Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B — / —

Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Other:

Test / Sampling Parameters

Run duration, min.	60
No. of traverse pts.	1
Time per point, min.	60
Probe/filter range, °F	—
Imp. outlet max., °F	—
Sample rate, cc/min	500

Ambient / Stack Gas Conditions

Baro. press., in. Hg	29.20
Ambient temp., °F	47
Static (P_g), in. H_2O	-1.0
Dry bulb temp., °F	—
Wet bulb temp., °F	—

Comments:

Impingers

	Initial, g	Final, g	Difference
1A-FORM Imp	106.3	102.6 ~~104.2~~ 108.7	
1B-FORM Imp	107.9	107.9	
S.G	102.6 ~~106.3~~	~~108.7~~ 104.2	
Tared Line Rinse			
Total impinger weight gain, g			

Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Side A: Meter Reading (Vm), L	Side A: Meter temp., °F inlet	Side A: Meter temp., °F outlet	Side A: Sample rate cc/min	Side A: System or orifice Δ vac., in. Hg	Side B / Canister: Meter Reading (Vm), L	Side B / Canister: Meter/can temp., °F inlet	Side B / Canister: Meter/can temp., °F outlet	Side B / Canister: Sample rate cc/min	Side B / Canister: System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F		
1	0	1139	0		61	500	.5										
	10		5.480		61		.5										
	20		10.759		62		.5										
	30		15.689		64		.5										
	40		20.138		67		.5										
	50		25.428		69		.5										
	60	1239	30.031		71		.5										

W006AS-010935B-RT-1922

47 of 563

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta — Page: 1 of 1

Source / Location: 2 South — Method: CARB 430

Run no.: 2 — Date: 12/8/21 — Operator / Assistant: PS — Project No.: P201-010935

Equipment Identification

Meter console ID	LFCB2
Critical orifice ID	—
Rotameter ID	LFCB2
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	—
Side B Meter Yd	1.0047
Orifice choked flow rate	500

ALT-011 TC Check

Std. TC ID	
Std. TC temp., °F	
Stack TC temp., °F	
Continuity check + or -	

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 6 — Side B — @ —

Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B / can — / —

Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A — @ — — Side B — @ —

Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B — / —

Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Other:

Test / Sampling Parameters

Run duration, min.	60
No. of traverse pts.	1
Time per point, min.	60
Probe/filter range, °F	—
Imp. outlet max., °F	—
Sample rate, cc/min	500

Ambient / Stack Gas Conditions

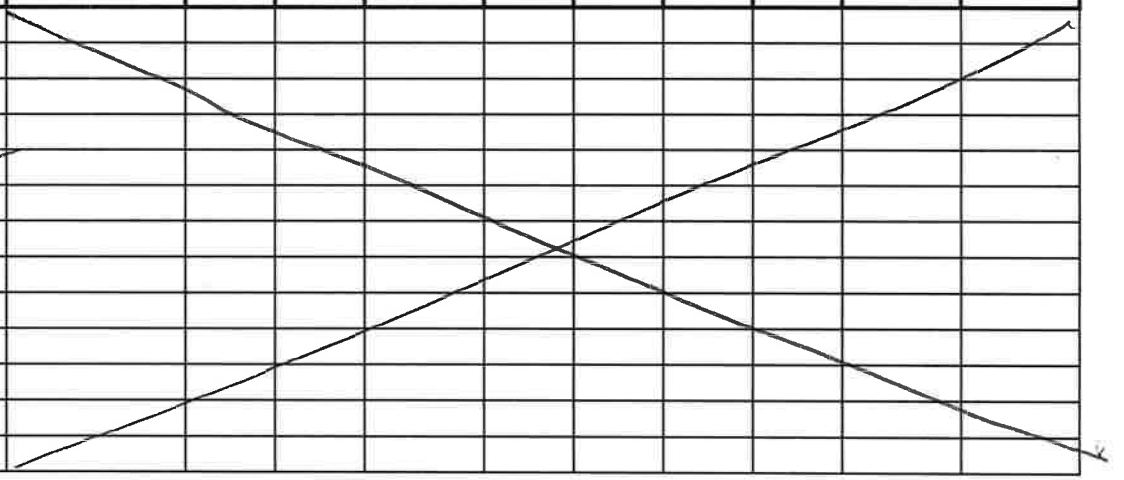
Baro. press., in. Hg	29.70
Ambient temp., °F	47
Static (P_g), in. H_2O	-1.6
Dry bulb temp., °F	
Wet bulb temp., °F	—

Comments:

Impingers

	Initial, g	Final, g	Difference
2A-FORM Imp A	99.6	101.4	
2B-FORM Imp B	103.9	103.9	
S.G	104.6	106.1	
Tared Line Rinse			
Total impinger weight gain, g			

			Side A					Side B / Canister									
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F		
1	0	1313	0		72	500	.5										
	10		5.919		71		.5										
	20		11.018		70		.5										
	30		16.766		69		.5										
	40		21.718		68		.5										
	50		25.694		66		.5										
	60	1413	30.857														



MAQS LowFlowSampleTrainData R0

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Calmat CA — Page: 1 of 1

Source / Location: 2 South — Method: CARB 432

Run no.: 3 — Date: 12/4/21 — Operator / Assistant: TB — Project No.: R20J-010935

Equipment Identification

Meter console ID	LFCB2
Critical orifice ID	—
Rotameter ID	LFCB2
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	—
Side B Meter Yd	1.0004
Orifice choked flow rate	500

ALT-011 TC Check

Std. TC ID	210187011
Std. TC temp., °F	66.4
Stack TC temp., °F	67.0
Continuity check + or -	+

Test / Sampling Parameters

Run duration, min.	60
No. of traverse pts.	1
Time per point, min.	60
Probe/filter range, °F	—
Imp. outlet max., °F	—
Sample rate, cc/min	500

Ambient / Stack Gas Conditions

Baro. press., in. Hg	29.70
Ambient temp., °F	48
Static (P_g), in. H_2O	-1.6
Dry bulb temp., °F	—
Wet bulb temp., °F	—

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg	Side A	0	@	5	Side B	0	@	—	
Canister/orifice: 2 minutes, in. Hg before/after	Side A	—	/	—	Side B / can	—	/	—	
Sample flow rate check, cc/min	1	—	2	—	3	—	4	—	5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg	Side A	—	@	—	Side B	—	@	—	
Canister/orifice: 2 minutes, in. Hg before/after	Side A	—	/	—	Side B	—	/	—	
Sample flow rate check, cc/min	1	—	2	—	3	—	4	—	5 — Avg —

Other:

Comments:

Impingers		Initial, g	Final, g	Difference
3A-FORM	ImpA	103.0	106.0	
3B-FORM	ImpB	99.8	99.6	
S.G		104.9	106.3	
Tared Line Rinse				
Total impinger weight gain, g				

			Side A					Side B / Canister								
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F		
1	0	1440	0		67	500	5										
	10		5.604		66		5										
	20		11.566		62		5										
	30		16.579		62		5										
	40		20.168		62		5										
	50		25.481		62		5										
	60	1540	30.022		62		5										

Appendix A.5
VOST Data Sheets

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility	Covanta	Page	1 of 1
Source / Location	2 South	Method	VOST (0031)
Run no.	1-A	Date 12/8/21 Operator / Assistant PR	Project No. P20)-010935

Equipment Identification		Calibration		Pre-Test Equipment Checks - fill in only those required by the test method being performed
Meter console ID	LFCB 2	Side A Meter Yd	1.026	Meter leak check: liter @ in. Hg — Side A 0 @ 8 — Side B — @ —
Critical orifice ID	—	Side B Meter Yd	—	Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — Side B / can — / —
Rotameter ID	LFCB 2	Orifice choked flow rate	500	Sample flow rate check, cc/min 1 — 2 — 3 — 4 — 5 — Avg —
Stack TC ID	—	**ALT-011 TC Check**		**Post-Test Equipment Checks - fill in only those required by the test method being performed**
Filter TC ID	—	Std. TC ID		Meter leak check: liter @ in. Hg — Side A 0 @ 10 — Side B — @ —
Micromanometer ID	—	Std. TC temp., °F		Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — Side B — / —
Sensitivity, in. H_2O	—	Stack TC temp., °F		Sample flow rate check, cc/min 1 — 2 — 3 — 4 — 5 — Avg —
		Continuity check + or -		Other:

Test / Sampling Parameters		Ambient / Stack Gas Conditions	
Run duration, min.	40	Baro. press., in. Hg	29.70
No. of traverse pts.	1	Ambient temp., °F	46
Time per point, min.	1	Static (P_g), in. H_2O	—
Probe/filter range, °F	266±?	Dry bulb temp., °F	—
Imp. outlet max., °F	—	Wet bulb temp., °F	—
Sample rate, cc/min	500		

Comments:

Trap A-A028675
Trap B-A027784
Trap C-A065420

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

			Side A					Side B / Canister									
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp °F	Probe temp °F	Filter temp. °F	Cond Temp	
1	0	0937	0		51	500	~~8~~2							264		58	
	5		2.918		51		2							266		58	
	10		5.766		52		2							265		54	
	15		8.152		52		2							264		55	
	20		10.349		52		2							265		56	
	25		12.533		53		2							264		58	
	30		14.010		53		~~2~~4							264		60	
	35		16.899		54		4							265		61	
	40	1017	20.017		54		4							265		63	

MAQS LowFlowSampleTrainData R0

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta
Source / Location: 2 South
Run no.: 1-B
Date: 12/9/21 Operator / Assistant: RS
Page: 1 of 1
Method: VOST (0031)
Project No.: 210-010935

Equipment Identification

Meter console ID: LPCB2
Critical orifice ID:
Rotameter ID: LPCB2
Stack TC ID:
Filter TC ID:
Micromanometer ID:
Sensitivity, in. H_2O:

Calibration

Side A Meter Yd: 1.0265
Side B Meter Yd:
Orifice choked flow rate: 5000

ALT-011 TC Check

Std. TC ID:
Std. TC temp., °F:
Stack TC temp., °F:
Continuity check + or -:

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A: 0 @ 9 — Side B: — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A: — / — — Side B / can: — / —
Sample flow rate check, cc/min — 1: — 2: — 3: — 4: — 5: — Avg: —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A: 0 @ 10 — Side B: — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A: — / — — Side B: — / —
Sample flow rate check, cc/min — 1: — 2: — 3: — 4: — 5: — Avg: —
Other:

Test / Sampling Parameters

Run duration, min.: 40
No. of traverse pts.: 1
Time per point, min.: 1
Probe/filter range, °F: 266 / 275
Imp. outlet max., °F:
Sample rate, cc/min: 5000

Ambient / Stack Gas Conditions

Baro. press., in. Hg: 29.70
Ambient temp., °F: 46
Static (P_g), in. H_2O: -1.8
Dry bulb temp., °F:
Wet bulb temp., °F:

Comments:

Trap A - A068040
Trap B - A062607
Trap C - A068040

Impingers

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

			Side A					Side B / Canister								
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F	Cond Temp
1	0	1030	0		55	5000	2							263		64
	5		2.873		56		2							264		65
	10		5.995		58		2							262		60
	15		8.139		59		5							262		58
	20		10.528		60		5							267		59
	25		12.619		60		5							263		60
	30		15.356		61		5							265		60
	35		16.140		62		5							265		58
	40	1110	20.004		63		5							266		58

W006AS-010935B-RT-1922

52 of 563

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta
Source / Location: 2 South
Run no.: 1-C
Date: 12/8/21 Operator / Assistant: RS
Page: 1 of 1
Method: VOST (0031)
Project No.: P20-010935

Equipment Identification

Meter console ID	LPCB 2
Critical orifice ID	—
Rotameter ID	LFCB 2
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	1.0265
Side B Meter Yd	—
Orifice choked flow rate	5000

ALT-011 TC Check

Std. TC ID	
Std. TC temp., °F	
Stack TC temp., °F	
Continuity check + or -	

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 10 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B / can — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 9 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —
Other:

Test / Sampling Parameters

Run duration, min.	40
No. of traverse pts.	1
Time per point, min.	1
Probe/filter range, °F	266 [illegible]
Imp. outlet max., °F	—
Sample rate, cc/min	5000

Ambient / Stack Gas Conditions

Baro. press., in. Hg	29.70
Ambient temp., °F	70
Static (P_g), in. H_2O	-1.8
Dry bulb temp., °F	—
Wet bulb temp., °F	—

Comments:

TRAP A - A037955
TRAP B - A027462
TRAP C - A066476

Impingers

	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

			Side A					Side B / Canister								
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F	Cond Temp
1	0	~~0930~~	0		63	5000	2							261		65
	5	1124	3.011		63		2							262		63
	10	5.515	~~5.816~~		63		5							~~266~~		64
	15		8.816		63		5							~~265~~		64
	20		11.036		63		5							265		63
	25		13.643		63		5							266		64
	30		16.177		63		5							264		63
	35	1209	18.413		63		5							266		64
	40	~~1140~~	20.0085													

MAQS LowFlowSampleTrainData R0

W006AS-010935B-RT-1922

53 of 563

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta — Page: 2 of 7
Source / Location: 2 South — Method: VOST (0031
Run no.: 2A — Date: 12/8/21 — Operator / Assistant: [redacted] — Project No.: 0107-010958

Equipment Identification

Meter console ID	LFCB2
Critical orifice ID	—
Rotameter ID	LFCB2
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	1.0765
Side B Meter Yd	—
Orifice choked flow rate	500

ALT-011 TC Check

Std. TC ID	
Std. TC temp., °F	
Stack TC temp., °F	
Continuity check + or -	

Test / Sampling Parameters

Run duration, min.	40
No. of traverse pts.	1
Time per point, min.	40
Probe/filter range, °F	266 [illegible]
Imp. outlet max., °F	—
Sample rate, cc/min	500

Ambient / Stack Gas Conditions

Baro. press., in. Hg	29.20
Ambient temp., °F	47
Static (P_g), in. H_2O	-1.6
Dry bulb temp., °F	—
Wet bulb temp., °F	—

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 9 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B / can — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 12 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —
Other:

Comments:

trap A – A064619
trap B – A065234
trap C – A062705

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

			Side A					Side B / Canister								
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F	Cond Temp
1	0	12:45	0		71	500	2							262		60
	5		3.113		71		2							262		60
	10		6.698		71		2							264		61
	15		7.923		71		2							265		61
	20		9.469		71		2.5							263		61
	25		12.731		71		5							261		62
	30		14.384		72		5							261		60
	35		17.169		72		5							260		62
	40	13:25	20.032													

MAQS LowFlowSampleTrainData R0

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta
Source / Location: 2 South
Run no.: 2B
Page 1 of 1
Method: Vogt (0031)
Date: 12/8/21
Operator / Assistant: [illegible]
Project No.: P201-010935

Equipment Identification		Calibration	
Meter console ID	LFCB2	Side A Meter Yd	1.0265
Critical orifice ID	—	Side B Meter Yd	—
Rotameter ID	LFCB2	Orifice choked flow rate	500
Stack TC ID	—	**ALT-011 TC Check**	
Filter TC ID	—	Std. TC ID	
Micromanometer ID	—	Std. TC temp., °F	
Sensitivity, in. H_2O	—	Stack TC temp., °F	
		Continuity check + or -	

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0.001 @ 15 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B / can — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0.000 @ 5 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —
Other:

Test / Sampling Parameters		Ambient / Stack Gas Conditions	
Run duration, min.	40	Baro. press., in. Hg	29.20
No. of traverse pts.	1	Ambient temp., °F	47
Time per point, min.	40	Static (P_g), in. H_2O	-1.6
Probe/filter range, °F	266D7.4	Dry bulb temp., °F	—
Imp. outlet max., °F	—	Wet bulb temp., °F	—
Sample rate, cc/min	500		

Comments:
Trap A — A065191
Trap B — ~~A20~~ A071789
Trap C — A056041

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Side A Meter Reading (Vm), L	Side A Meter temp., °F inlet	Side A Meter temp., °F outlet	Side A Sample rate cc/min	Side A System or orifice Δ vac., in. Hg	Side B / Canister Meter Reading (Vm), L	Side B Meter/can temp., °F inlet	Side B Meter/can temp., °F outlet	Side B Sample rate cc/min	Side B System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp °F	Filter temp. °F	Cond Temp	
1	0	1337	0		68	500	2							260		63	
	5		3.848		68		2							260		63	
	10		5.246		67		2							262		64	
	15		7.776		67		2							262		64	
	20		9.526		66		4							262		57	
	25		12.373		66		4							263		54	
	20		14.320		65		5							264		56	
	35		17.418		65		5							265		57	
	40	13:17	20.080														

MAQS LowFlowSampleTrainData R0

W006AS-010935B-RT-1922

55 of 563

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta
Source / Location: 2 South
Run no.: 2C
Date: 12/8/21 Operator / Assistant: [illegible]
Page: 1 of 1
Method: M29 (UC31)
Project No.: [illegible]-010935

Equipment Identification

Meter console ID	LRCB2
Critical orifice ID	—
Rotameter ID	LRCB7
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	1.0265
Side B Meter Yd	—
Orifice choked flow rate	5000

ALT-011 TC Check

Std. TC ID	
Std. TC temp., °F	
Stack TC temp., °F	
Continuity check + or -	

Test / Sampling Parameters

Run duration, min.	40
No. of traverse pts.	1
Time per point, min.	40
Probe/filter range, °F	266 ± 75
Imp. outlet max., °F	—
Sample rate, cc/min	5000

Ambient / Stack Gas Conditions

Baro. press., in. Hg	29.70
Ambient temp., °F	48
Static (P_g), in. H_2O	-1.6
Dry bulb temp., °F	—
Wet bulb temp., °F	—

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 10 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B / can — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 10 — Side B — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B — / —
Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —
Other:

Comments:

Trap A – A061252
Trap B – A065200
Trap C – A065614

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

			Side A					Side B / Canister								
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F	Comb Temp
1	0	1454	0		62	5000	2							260		57
	5		2.684		62		2							260		58
	10		4.238		62		2							261		57
	15		6.187		62		5							261		57
	20		9.364		61		5							260		60
	25		13.341		61		5							259		60
	30		16.483		61		5							260		62
	35		18.819		61		5							262		63
	40	1514	20.019													

MAQS LowFlowSampleTrainData R0

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta
Source / Location: 2 South
Run no.: 3A
Date: 2/8/21 / Operator / Assistant: RB
Page: 1 of 1
Method: VOST 0031
Project No.: 2021-01095

Equipment Identification

Meter console ID: LFCB2
Critical orifice ID: —
Rotameter ID: LFCB2
Stack TC ID: —
Filter TC ID: —
Micromanometer ID: —
Sensitivity, in. H_2O: —

Calibration

Side A Meter Yd: 1.0265
Side B Meter Yd: —
Orifice choked flow rate: 500

ALT-011 TC Check

Std. TC ID:
Std. TC temp., °F:
Stack TC temp., °F:
Continuity check + or -:

Test / Sampling Parameters

Run duration, min.: 40
No. of traverse pts.: 1
Time per point, min.: 40
Probe/filter range, °F: 266±75
Imp. outlet max., °F: —
Sample rate, cc/min: 500

Ambient / Stack Gas Conditions

Baro. press., in. Hg: 29.70
Ambient temp., °F: 44
Static (P_g), in. H_2O: -1.6
Dry bulb temp., °F: —
Wet bulb temp., °F: —

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A: 0 @ 12 — Side B: — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A: — / — — Side B / can: — / —
Sample flow rate check, cc/min — 1: — 2: — 3: — 4: — 5: — Avg: —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A: 0 @ 10 — Side B: — @ —
Canister/orifice: 2 minutes, in. Hg before/after — Side A: — / — — Side B: — / —
Sample flow rate check, cc/min — 1: — 2: — 3: — 4: — 5: — Avg: —
Other:

Comments:

Trap A - A062079 ~~A067325~~
Trap B - A067325
Trap C - A065471

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

			Side A					Side B / Canister									
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F	Cond Temp
1	0	1547	0		62	500								261		61
	5		2.950		62									264		61
	10		5.625		67									265		61
	15		8.269		62									266		63
	20		10.960		62									267		63
	25		13.726		62									267		64
	30		15.271		62									268		65
	35		17.457		67									261		64
	40	1627	20.028													

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Cormetech — Page: 1 of 1

Source / Location: 2 South — Method: VOST (0031)

Run no.: 3B — Date: 12/8/21 — Operator / Assistant: RS — Project No.: P401-010935

Equipment Identification

Meter console ID	LFCB2
Critical orifice ID	—
Rotameter ID	LFCB2
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	1.0265
Side B Meter Yd	—
Orifice choked flow rate	500

ALT-011 TC Check

Std. TC ID	
Std. TC temp., °F	
Stack TC temp., °F	
Continuity check + or -	

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg	Side A	0	@	15	Side B	—	@	—	
Canister/orifice: 2 minutes, in. Hg before/after	Side A	—	/	—	Side B / can	—	/	—	
Sample flow rate check, cc/min	1 —	2 —	3 —	4 —	5 —	Avg —			

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg	Side A	0	@	15	Side B	—	@	—	
Canister/orifice: 2 minutes, in. Hg before/after	Side A	—	/	—	Side B	—	/	—	
Sample flow rate check, cc/min	1 —	2 —	3 —	4 —	5 —	Avg —			

Other:

Test / Sampling Parameters

Run duration, min.	40
No. of traverse pts.	1
Time per point, min.	40
Probe/filter range, °F	260 / 175
Imp. outlet max., °F	—
Sample rate, cc/min	500

Ambient / Stack Gas Conditions

Baro. press., in. Hg	29.20
Ambient temp., °F	48
Static (P_g), in. H_2O	-1.6
Dry bulb temp., °F	—
Wet bulb temp., °F	—

Comments:

Trap A - A038492
Trap B - A071917
Trap C - A065864

Impingers

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

			Side A				Side B / Canister								
Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Meter Reading (Vm), L	Meter temp., °F inlet	Meter temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Meter Reading (Vm), L	Meter/can temp., °F inlet	Meter/can temp., °F outlet	Sample rate cc/min	System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F	Cond Temp
1	0	1635	0		62	500	2							260		64
	5		2.838		62		2							261		64
	10		5.59M		62		2							261		63
	15		7.564		62		5							262		62
	20		10.624		62		5							262		62
	25		12.796		62		5							264		61
	30		15.668		63		5							264		60
	35		17.880		63		5							260		60
	40	1715	20.049													

MONTROSE AIR QUALITY SERVICES

LOW-FLOW OR CRITICAL ORIFICE SAMPLE TRAIN DATA

Project Information

Client / Facility: Covanta — Page: 1 of 1

Source / Location: 2 South — Method: VOST

Run no.: 3C — Date: 12/8/21 — Operator / Assistant: RB — Project No.: PA07-010935

Equipment Identification

Meter console ID	LFCB2
Critical orifice ID	—
Rotameter ID	LFCB2
Stack TC ID	—
Filter TC ID	—
Micromanometer ID	—
Sensitivity, in. H_2O	—

Calibration

Side A Meter Yd	1.0265
Side B Meter Yd	—
Orifice choked flow rate	500

ALT-011 TC Check

Std. TC ID	210187011
Std. TC temp., °F	66.4
Stack TC temp., °F	67
Continuity check + or -	+

Pre-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 13 — Side B — @ —

Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B / can — / —

Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Post-Test Equipment Checks - fill in only those required by the test method being performed

Meter leak check: liter @ in. Hg — Side A 0 @ 15 — Side B — @ —

Canister/orifice: 2 minutes, in. Hg before/after — Side A — / — — Side B — / —

Sample flow rate check, cc/min — 1 — 2 — 3 — 4 — 5 — Avg —

Other:

Test / Sampling Parameters

Run duration, min.	40
No. of traverse pts.	1
Time per point, min.	40
Probe/filter range, °F	266 ± 25
Imp. outlet max., °F	—
Sample rate, cc/min	500

Ambient / Stack Gas Conditions

Baro. press., in. Hg	29.70
Ambient temp., °F	
Static (P_g), in. H_2O	-1.0
Dry bulb temp., °F	—
Wet bulb temp., °F	—

Comments:

Trap A - A065208

Trap B - A066813

Trap C - A065406

Impingers

Impingers	Initial, g	Final, g	Difference
Tared Line Rinse			
Total impinger weight gain, g			

Traverse pt. number	Sample or dwell time (Δt), min.	Clock time (24 hr)	Side A: Meter Reading (Vm), L	Side A: Meter temp., °F inlet	Side A: Meter temp., °F outlet	Side A: Sample rate cc/min	Side A: System or orifice Δ vac., in. Hg	Side B / Canister: Meter Reading (Vm), L	Side B / Canister: Meter/can temp., °F inlet	Side B / Canister: Meter/can temp., °F outlet	Side B / Canister: Sample rate cc/min	Side B / Canister: System or orifice Δ vac., in. Hg	Stack temp. °F	Probe temp. °F	Filter temp. °F	Cond. Temp
1	0	~~1736~~	0		65	500	2							266		64
	5	1726	3.466		66		2							266		62
	10		5.096		66		2							266		63
	15		7.734		67		5							266		64
	20		10.136		67		5							264		64
	25		12.046		68		5							266		65
	30		14.516		67		5							259		65
	35		17.498		67		5							259		64
	40	1906	20.019													

Appendix A.6
Instrumental Test Method Data

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 1
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Analyzer Configuration

Name:	O2-695	CO2-741						
Make/Model:								
25A or 7E:	7E	7E						
Voltage max:	10	10						
Voltage offset:	0	0						
Range:	10	10						
Upscale:								
Downscale:								

Cylinder Information

Zero Number:	CC733388	CC733388						
Zero Conc:	0	0						
Low Number:								
Low Conc:								
Mid Number:	EB0063296	EB0063296						
Mid Conc:	10.19	9.923						
High Number:	EB0089025	EB0089025						
High Conc:	23.04	22.66						
Bias Number:	EB0063296	EB0063296						
Bias Conc:	10.19	9.923						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 1
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Calibration

	Name:	O2-695	CO2-741						
	Make/Model:								
	25A or 7E:	7E	7E						

Cylinder Concentrations									
	Zero:	0.000	0.000						
	Low:								
	Mid:	10.19	9.923						
	High:	23.04	22.66						

Calibration Readings									
	Zero reading:	-0.044	-0.032						
	Low reading:	0.000	0.000						
	Mid reading:	10.24	9.892						
	High reading:	23.04	22.67						

EPA Method 7E Error Calculations									
Zero %Err:	**<2.0**	-0.191	-0.141						
Mid %Err:	**<2.0**	0.217	-0.137						
High %Err:	**<2.0**	0.000	0.044						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 1
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Initial bias

	Name:	O2-695	CO2-741						
	Make/Model:								
	25A or 7E:	7E	7E						

Cylinder Concentrations									
	Zero:	0.000	0.000						
	Low:								
	Mid:	10.19	9.923						
	High:	23.04	22.66						

Calibration Readings									
	Zero reading:	-0.044	-0.032						
	Low reading:	0.000	0.000						
	Mid reading:	10.24	9.892						
	High reading:	23.04	22.67						

EPA Method 7E Error Calculations									
Zero %Err:	**<2.0**	-0.191	-0.141						
Mid %Err:	**<2.0**	0.217	-0.137						
High %Err:	**<2.0**	0.000	0.044						

Initial Bias Data									
	Zero reading:	0.067	0.282						
	Span reading:	10.16	9.810						
Zero % bias:	**<5.0**	0.482	1.386						
Span % bias:	**<5.0**	-0.347	-0.362						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Run 1 Average Results - Unit 2 Run 1

09:37:00 - 11:37:00

	Name:	O2-695	CO2-741						
	Make/Model:								
Dec 8 2021	09:38:00	11.82	7.662						
Dec 8 2021	09:39:00	11.85	7.680						
Dec 8 2021	09:40:00	11.46	8.009						
Dec 8 2021	09:41:00	11.43	8.038						
Dec 8 2021	09:42:00	11.43	8.035						
Dec 8 2021	09:43:00	10.75	8.604						
Dec 8 2021	09:44:00	10.21	9.026						
Dec 8 2021	09:45:00	10.10	9.095						
Dec 8 2021	09:46:00	10.04	9.158						
Dec 8 2021	09:47:00	9.798	9.349						
Dec 8 2021	09:48:00	9.589	9.491						
Dec 8 2021	09:49:00	9.665	9.433						
Dec 8 2021	09:50:00	9.906	9.213						
Dec 8 2021	09:51:00	10.82	8.447						
Dec 8 2021	09:52:00	10.79	8.495						
Dec 8 2021	09:53:00	10.07	9.085						
Dec 8 2021	09:54:00	10.01	9.163						
Dec 8 2021	09:55:00	9.944	9.222						
Dec 8 2021	09:56:00	10.30	8.935						
Dec 8 2021	09:57:00	10.71	8.578						
Dec 8 2021	09:58:00	10.81	8.476						
Dec 8 2021	09:59:00	10.72	8.582						
Dec 8 2021	10:00:00	10.78	8.519						
Dec 8 2021	10:01:00	10.94	8.399						
Dec 8 2021	10:02:00	11.03	8.323						
Dec 8 2021	10:03:00	10.89	8.450						
Dec 8 2021	10:04:00	10.88	8.455						
Dec 8 2021	10:05:00	11.10	8.289						
Dec 8 2021	10:06:00	10.69	8.655						
Dec 8 2021	10:07:00	10.42	8.865						
Dec 8 2021	10:08:00	10.88	8.479						
Dec 8 2021	10:09:00	11.25	8.163						
Dec 8 2021	10:10:00	11.29	8.125						
Dec 8 2021	10:11:00	11.41	8.069						
Dec 8 2021	10:12:00	11.24	8.232						
Dec 8 2021	10:13:00	11.26	8.187						
Dec 8 2021	10:14:00	11.37	8.116						
Dec 8 2021	10:15:00	11.06	8.394						
Dec 8 2021	10:16:00	11.44	8.083						
Dec 8 2021	10:17:00	11.24	8.294						
End of port 1 point 1									
Dec 8 2021	10:18:00	10.65	8.810						
Dec 8 2021	10:19:00	10.79	8.694						
Dec 8 2021	10:20:00	11.08	8.448						
Dec 8 2021	10:21:00	10.72	8.743						
Dec 8 2021	10:22:00	10.51	8.885						
Dec 8 2021	10:23:00	10.51	8.858						

Dec 8 2021	10:24:00	10.60	8.727						
Dec 8 2021	10:25:00	10.40	8.914						
Dec 8 2021	10:26:00	10.16	9.103						
Dec 8 2021	10:27:00	9.672	9.469						
Dec 8 2021	10:28:00	10.31	8.897						
Dec 8 2021	10:29:00	10.57	8.681						
Dec 8 2021	10:30:00	10.63	8.625						
Dec 8 2021	10:31:00	10.85	8.427						
Dec 8 2021	10:32:00	11.35	8.021						
Dec 8 2021	10:33:00	10.77	8.502						
Dec 8 2021	10:34:00	11.35	8.004						
Dec 8 2021	10:35:00	10.78	8.471						
Dec 8 2021	10:36:00	10.78	8.429						
Dec 8 2021	10:37:00	11.37	7.933						
Dec 8 2021	10:38:00	11.54	7.808						
Dec 8 2021	10:39:00	11.57	7.808						
Dec 8 2021	10:40:00	11.15	8.165						
Dec 8 2021	10:41:00	11.11	8.213						
Dec 8 2021	10:42:00	11.46	7.926						
Dec 8 2021	10:43:00	11.32	8.031						
Dec 8 2021	10:44:00	11.28	8.042						
Dec 8 2021	10:45:00	11.20	8.104						
Dec 8 2021	10:46:00	11.32	8.006						
Dec 8 2021	10:47:00	11.14	8.139						
Dec 8 2021	10:48:00	10.76	8.450						
Dec 8 2021	10:49:00	9.986	9.102						
Dec 8 2021	10:50:00	10.22	8.931						
Dec 8 2021	10:51:00	10.63	8.615						
Dec 8 2021	10:52:00	10.41	8.802						
Dec 8 2021	10:53:00	10.72	8.522						
Dec 8 2021	10:54:00	10.33	8.856						
Dec 8 2021	10:55:00	10.77	8.517						
Dec 8 2021	10:56:00	10.91	8.405						
Dec 8 2021	10:57:00	10.67	8.581						
End of port 1 point 2									
Dec 8 2021	10:58:00	11.61	7.778						
Dec 8 2021	10:59:00	11.85	7.611						
Dec 8 2021	11:00:00	11.34	8.041						
Dec 8 2021	11:01:00	11.20	8.140						
Dec 8 2021	11:02:00	11.26	8.123						
Dec 8 2021	11:03:00	11.29	8.102						
Dec 8 2021	11:04:00	11.51	7.930						
Dec 8 2021	11:05:00	11.21	8.184						
Dec 8 2021	11:06:00	11.24	8.156						
Dec 8 2021	11:07:00	10.92	8.429						
Dec 8 2021	11:08:00	10.73	8.589						
Dec 8 2021	11:09:00	10.85	8.477						
Dec 8 2021	11:10:00	10.81	8.544						
Dec 8 2021	11:11:00	10.36	8.921						
Dec 8 2021	11:12:00	10.93	8.441						
Dec 8 2021	11:13:00	11.32	8.112						
Dec 8 2021	11:14:00	11.45	7.992						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Dec 8 2021	11:15:00	11.34	8.061						
Dec 8 2021	11:16:00	11.25	8.149						
Dec 8 2021	11:17:00	10.93	8.432						
Dec 8 2021	11:18:00	10.47	8.830						
Dec 8 2021	11:19:00	10.60	8.710						
Dec 8 2021	11:20:00	10.72	8.620						
Dec 8 2021	11:21:00	10.90	8.442						
Dec 8 2021	11:22:00	11.04	8.314						
Dec 8 2021	11:23:00	11.16	8.187						
Dec 8 2021	11:24:00	11.08	8.268						
Dec 8 2021	11:25:00	11.47	7.916						
Dec 8 2021	11:26:00	11.00	8.308						
Dec 8 2021	11:27:00	10.76	8.487						
Dec 8 2021	11:28:00	10.64	8.571						
Dec 8 2021	11:29:00	11.17	8.085						
Dec 8 2021	11:30:00	11.57	7.745						
Dec 8 2021	11:31:00	11.46	7.857						
Dec 8 2021	11:32:00	11.10	8.176						
Dec 8 2021	11:33:00	10.80	8.451						
Dec 8 2021	11:34:00	10.76	8.513						
Dec 8 2021	11:35:00	11.62	7.802						
Dec 8 2021	11:36:00	11.84	7.602						
Dec 8 2021	11:37:00	11.51	7.881						
End of port 1 point 3									

	Average:	10.91	8.421						
	Max:	11.85	9.491						
	Min:	9.589	7.602						

Stratification Results

Port	**Point**	O2-695	CO2-741						
1	1	10.76	8.567						
1	2	10.83	8.465						
1	3	11.13	8.220						
	Strat diff:	0.223	0.150						
	Strat %:	2.048	2.344						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Run 1 Post run bias - Unit 2 Run 1

09:37:00 - 11:37:00

	Name:	O2-695	CO2-741						
	Make/Model:								
	25A or 7E:	7E	7E						

Run summary data									
	Raw Avg:	10.91	8.421						
	Max:	11.85	9.491						
	Min:	9.589	7.602						

Cylinder Concentrations									
	Zero:	0.000	0.000						
	Low:								
	Mid:	10.19	9.923						
	High:	23.04	22.66						

Calibration Readings									
	Zero reading:	-0.044	-0.032						
	Low reading:								
	Mid reading:	10.24	9.892						
	High reading:	23.04	22.67						

EPA Method 7E Error Calculations									
Zero %Err:	**<2.0**	-0.191	-0.141						
Mid %Err:	**<2.0**	0.217	-0.137						
High %Err:	**<2.0**	0.000	0.044						

Initial Bias Data									
	Zero reading:	0.067	0.282						
	Span reading:	10.16	9.810						
Zero % bias:	**<5.0**	0.482	1.386						
Span % bias:	**<5.0**	-0.347	-0.362						

Final Bias Data									
	Zero reading:	0.084	0.220						
	Span reading:	10.06	9.995						
Zero % bias:	**<5.0**	0.556	1.112						
Span % bias:	**<5.0**	-0.781	0.455						
Zero % drift:	**<3.0**	0.074	0.274						
Span % drift:	**<3.0**	0.434	0.817						

Bias Corrected Averages									
	Cor Avg:	11.00	8.400						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Run 2 Average Results - Unit 2 Run 2

12:45:00 - 14:45:00

	Name:	O2-695	CO2-741						
	Make/Model:								
Dec 8 2021	12:46:00	11.72	7.741						
Dec 8 2021	12:47:00	11.73	7.744						
Dec 8 2021	12:48:00	11.76	7.708						
Dec 8 2021	12:49:00	11.93	7.580						
Dec 8 2021	12:50:00	11.79	7.671						
Dec 8 2021	12:51:00	11.60	7.851						
Dec 8 2021	12:52:00	11.34	8.062						
Dec 8 2021	12:53:00	11.26	8.124						
Dec 8 2021	12:54:00	11.50	7.941						
Dec 8 2021	12:55:00	11.26	8.153						
Dec 8 2021	12:56:00	11.20	8.213						
Dec 8 2021	12:57:00	10.88	8.484						
Dec 8 2021	12:58:00	10.47	8.857						
Dec 8 2021	12:59:00	10.23	9.057						
Dec 8 2021	13:00:00	10.19	9.121						
Dec 8 2021	13:01:00	10.30	9.007						
Dec 8 2021	13:02:00	9.820	9.414						
Dec 8 2021	13:03:00	9.686	9.531						
Dec 8 2021	13:04:00	9.865	9.404						
Dec 8 2021	13:05:00	10.03	9.290						
Dec 8 2021	13:06:00	10.63	8.788						
Dec 8 2021	13:07:00	10.66	8.796						
Dec 8 2021	13:08:00	10.25	9.122						
Dec 8 2021	13:09:00	10.09	9.274						
Dec 8 2021	13:10:00	10.33	9.070						
Dec 8 2021	13:11:00	10.22	9.172						
Dec 8 2021	13:12:00	10.34	9.073						
Dec 8 2021	13:13:00	10.57	8.892						
Dec 8 2021	13:14:00	10.97	8.538						
Dec 8 2021	13:15:00	10.85	8.653						
Dec 8 2021	13:16:00	10.82	8.686						
Dec 8 2021	13:17:00	10.44	9.029						
Dec 8 2021	13:18:00	10.99	8.517						
Dec 8 2021	13:19:00	11.12	8.422						
Dec 8 2021	13:20:00	10.72	8.808						
Dec 8 2021	13:21:00	10.48	9.001						
Dec 8 2021	13:22:00	10.79	8.731						
Dec 8 2021	13:23:00	11.11	8.461						
Dec 8 2021	13:24:00	11.12	8.444						
Dec 8 2021	13:25:00	11.33	8.265						
End of port 1 point 1									
Dec 8 2021	13:26:00	11.50	8.092						
Dec 8 2021	13:27:00	11.59	8.019						
Dec 8 2021	13:28:00	11.64	7.978						
Dec 8 2021	13:29:00	11.58	8.047						
Dec 8 2021	13:30:00	11.71	7.926						
Dec 8 2021	13:31:00	11.03	8.530						

Dec 8 2021	13:32:00	11.09	8.478						
Dec 8 2021	13:33:00	11.35	8.247						
Dec 8 2021	13:34:00	11.47	8.165						
Dec 8 2021	13:35:00	11.42	8.203						
Dec 8 2021	13:36:00	11.11	8.460						
Dec 8 2021	13:37:00	10.72	8.792						
Dec 8 2021	13:38:00	10.34	9.097						
Dec 8 2021	13:39:00	10.75	8.746						
Dec 8 2021	13:40:00	10.78	8.738						
Dec 8 2021	13:41:00	11.11	8.490						
Dec 8 2021	13:42:00	11.05	8.528						
Dec 8 2021	13:43:00	11.05	8.492						
Dec 8 2021	13:44:00	11.37	8.222						
Dec 8 2021	13:45:00	11.20	8.367						
Dec 8 2021	13:46:00	10.90	8.631						
Dec 8 2021	13:47:00	10.76	8.752						
Dec 8 2021	13:48:00	10.61	8.884						
Dec 8 2021	13:49:00	10.41	9.022						
Dec 8 2021	13:50:00	10.91	8.615						
Dec 8 2021	13:51:00	11.11	8.448						
Dec 8 2021	13:52:00	11.33	8.252						
Dec 8 2021	13:53:00	11.24	8.340						
Dec 8 2021	13:54:00	10.87	8.667						
Dec 8 2021	13:55:00	10.77	8.731						
Dec 8 2021	13:56:00	9.910	9.480						
Dec 8 2021	13:57:00	10.10	9.318						
Dec 8 2021	13:58:00	9.423	9.851						
Dec 8 2021	13:59:00	9.729	9.588						
Dec 8 2021	14:00:00	10.61	8.841						
Dec 8 2021	14:01:00	10.46	8.953						
Dec 8 2021	14:02:00	10.35	9.042						
Dec 8 2021	14:03:00	10.39	9.003						
Dec 8 2021	14:04:00	10.51	8.904						
Dec 8 2021	14:05:00	10.76	8.662						
End of port 1 point 2									
Dec 8 2021	14:06:00	11.25	8.242						
Dec 8 2021	14:07:00	10.74	8.709						
Dec 8 2021	14:08:00	10.42	8.971						
Dec 8 2021	14:09:00	10.73	8.685						
Dec 8 2021	14:10:00	11.11	8.379						
Dec 8 2021	14:11:00	11.02	8.459						
Dec 8 2021	14:12:00	10.75	8.694						
Dec 8 2021	14:13:00	10.87	8.577						
Dec 8 2021	14:14:00	11.00	8.474						
Dec 8 2021	14:15:00	10.87	8.589						
Dec 8 2021	14:16:00	10.44	8.934						
Dec 8 2021	14:17:00	10.66	8.742						
Dec 8 2021	14:18:00	11.29	8.205						
Dec 8 2021	14:19:00	11.26	8.265						
Dec 8 2021	14:20:00	11.04	8.446						
Dec 8 2021	14:21:00	11.37	8.184						
Dec 8 2021	14:22:00	11.61	7.970						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Dec 8 2021	14:23:00	11.32	8.233						
Dec 8 2021	14:24:00	10.22	9.150						
Dec 8 2021	14:25:00	10.06	9.276						
Dec 8 2021	14:26:00	10.66	8.764						
Dec 8 2021	14:27:00	11.10	8.383						
Dec 8 2021	14:28:00	11.09	8.373						
Dec 8 2021	14:29:00	11.41	8.096						
Dec 8 2021	14:30:00	11.31	8.206						
Dec 8 2021	14:31:00	11.17	8.353						
Dec 8 2021	14:32:00	11.11	8.381						
Dec 8 2021	14:33:00	11.14	8.347						
Dec 8 2021	14:34:00	10.68	8.735						
Dec 8 2021	14:35:00	10.79	8.639						
Dec 8 2021	14:36:00	11.02	8.430						
Dec 8 2021	14:37:00	11.70	7.851						
Dec 8 2021	14:38:00	11.42	8.128						
Dec 8 2021	14:39:00	10.60	8.843						
Dec 8 2021	14:40:00	10.49	8.918						
Dec 8 2021	14:41:00	10.84	8.602						
Dec 8 2021	14:42:00	11.14	8.334						
Dec 8 2021	14:43:00	11.23	8.265						
Dec 8 2021	14:44:00	11.28	8.209						
Dec 8 2021	14:45:00	11.17	8.315						
End of port 1 point 3									

	Average:	10.89	8.580						
	Max:	11.93	9.851						
	Min:	9.423	7.580						

Stratification Results

Port	**Point**	O2-695	CO2-741						
1	1	10.80	8.622						
1	2	10.86	8.651						
1	3	10.98	8.484						
	Strat diff:	0.100	0.065						
	Strat %:	0.919	1.184						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Run 2 Post run bias - Unit 2 Run 2

12:45:00 - 14:45:00

	Name:	O2-695	CO2-741						
	Make/Model:								
	25A or 7E:	7E	7E						

Run summary data									
	Raw Avg:	10.89	8.580						
	Max:	11.93	9.851						
	Min:	9.423	7.580						

Cylinder Concentrations									
	Zero:	0.000	0.000						
	Low:								
	Mid:	10.19	9.923						
	High:	23.04	22.66						

Calibration Readings									
	Zero reading:	-0.044	-0.032						
	Low reading:								
	Mid reading:	10.24	9.892						
	High reading:	23.04	22.67						

EPA Method 7E Error Calculations									
Zero %Err:	**<2.0**	-0.191	-0.141						
Mid %Err:	**<2.0**	0.217	-0.137						
High %Err:	**<2.0**	0.000	0.044						

Initial Bias Data									
	Zero reading:	0.084	0.220						
	Span reading:	10.06	9.995						
Zero % bias:	**<5.0**	0.556	1.112						
Span % bias:	**<5.0**	-0.781	0.455						

Final Bias Data									
	Zero reading:	0.064	0.269						
	Span reading:	10.12	10.01						
Zero % bias:	**<5.0**	0.469	1.328						
Span % bias:	**<5.0**	-0.521	0.521						
Zero % drift:	**<3.0**	0.087	0.216						
Span % drift:	**<3.0**	0.260	0.066						

Bias Corrected Averages									
	Cor Avg:	11.00	8.476						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Run 3 Average Results - Run 3 Unit 2

15:48:00 - 17:48:00

	Name:	O2-695	CO2-741						
	Make/Model:								
Dec 8 2021	15:49:00	11.59	7.896						
Dec 8 2021	15:50:00	11.49	7.960						
Dec 8 2021	15:51:00	10.74	8.610						
Dec 8 2021	15:52:00	10.90	8.436						
Dec 8 2021	15:53:00	11.33	8.045						
Dec 8 2021	15:54:00	11.13	8.255						
Dec 8 2021	15:55:00	10.94	8.405						
Dec 8 2021	15:56:00	10.86	8.456						
Dec 8 2021	15:57:00	10.63	8.646						
Dec 8 2021	15:58:00	10.78	8.513						
Dec 8 2021	15:59:00	9.961	9.198						
Dec 8 2021	16:00:00	10.35	8.810						
Dec 8 2021	16:01:00	11.24	8.066						
Dec 8 2021	16:02:00	11.85	7.582						
Dec 8 2021	16:03:00	11.47	7.944						
Dec 8 2021	16:04:00	10.97	8.350						
Dec 8 2021	16:05:00	10.44	8.768						
Dec 8 2021	16:06:00	10.47	8.722						
Dec 8 2021	16:07:00	10.91	8.366						
Dec 8 2021	16:08:00	11.56	7.798						
Dec 8 2021	16:09:00	11.65	7.741						
Dec 8 2021	16:10:00	10.98	8.303						
Dec 8 2021	16:11:00	11.19	8.132						
Dec 8 2021	16:12:00	11.29	8.022						
Dec 8 2021	16:13:00	11.90	7.546						
Dec 8 2021	16:14:00	12.58	7.027						
Dec 8 2021	16:15:00	12.03	7.530						
Dec 8 2021	16:16:00	11.64	7.864						
Dec 8 2021	16:17:00	11.61	7.850						
Dec 8 2021	16:18:00	11.96	7.540						
Dec 8 2021	16:19:00	12.20	7.304						
Dec 8 2021	16:20:00	12.24	7.275						
Dec 8 2021	16:21:00	11.93	7.551						
Dec 8 2021	16:22:00	11.35	8.072						
Dec 8 2021	16:23:00	10.58	8.724						
Dec 8 2021	16:24:00	11.05	8.315						
Dec 8 2021	16:25:00	11.56	7.860						
Dec 8 2021	16:26:00	11.90	7.643						
Dec 8 2021	16:27:00	12.14	7.452						
Dec 8 2021	16:28:00	12.40	7.259						
End of port 1 point 1									
Dec 8 2021	16:29:00	12.49	7.248						
Dec 8 2021	16:30:00	11.67	7.946						
Dec 8 2021	16:31:00	11.58	8.031						
Dec 8 2021	16:32:00	11.11	8.397						
Dec 8 2021	16:33:00	11.45	8.087						
Dec 8 2021	16:34:00	11.82	7.775						

Dec 8 2021	16:35:00	12.06	7.607						
Dec 8 2021	16:36:00	11.34	8.276						
Dec 8 2021	16:37:00	11.54	8.093						
Dec 8 2021	16:38:00	11.89	7.787						
Dec 8 2021	16:39:00	12.32	7.442						
Dec 8 2021	16:40:00	12.13	7.608						
Dec 8 2021	16:41:00	11.84	7.878						
Dec 8 2021	16:42:00	10.91	8.730						
Dec 8 2021	16:43:00	12.09	7.670						
Dec 8 2021	16:44:00	12.43	7.400						
Dec 8 2021	16:45:00	12.35	7.494						
Dec 8 2021	16:46:00	11.28	8.413						
Dec 8 2021	16:47:00	10.74	8.902						
Dec 8 2021	16:48:00	10.58	9.016						
Dec 8 2021	16:49:00	11.98	7.806						
Dec 8 2021	16:50:00	12.22	7.641						
Dec 8 2021	16:51:00	11.80	8.037						
Dec 8 2021	16:52:00	11.02	8.745						
Dec 8 2021	16:53:00	9.820	9.717						
Dec 8 2021	16:54:00	10.64	8.898						
Dec 8 2021	16:55:00	11.25	8.367						
Dec 8 2021	16:56:00	11.60	8.041						
Dec 8 2021	16:57:00	12.01	7.708						
Dec 8 2021	16:58:00	11.34	8.277						
Dec 8 2021	16:59:00	10.61	8.850						
Dec 8 2021	17:00:00	10.62	8.868						
Dec 8 2021	17:01:00	10.38	9.019						
Dec 8 2021	17:02:00	9.831	9.452						
Dec 8 2021	17:03:00	9.987	9.260						
Dec 8 2021	17:04:00	10.60	8.705						
Dec 8 2021	17:05:00	11.32	8.083						
Dec 8 2021	17:06:00	11.08	8.322						
Dec 8 2021	17:07:00	10.54	8.827						
Dec 8 2021	17:08:00	10.42	8.892						
End of port 1 point 2									
Dec 8 2021	17:09:00	10.40	8.937						
Dec 8 2021	17:10:00	10.17	9.100						
Dec 8 2021	17:11:00	10.05	9.203						
Dec 8 2021	17:12:00	10.41	8.936						
Dec 8 2021	17:13:00	10.76	8.636						
Dec 8 2021	17:14:00	10.60	8.782						
Dec 8 2021	17:15:00	10.42	8.937						
Dec 8 2021	17:16:00	10.38	8.980						
Dec 8 2021	17:17:00	10.04	9.182						
Dec 8 2021	17:18:00	10.02	9.171						
Dec 8 2021	17:19:00	10.34	8.871						
Dec 8 2021	17:20:00	10.91	8.401						
Dec 8 2021	17:21:00	10.83	8.498						
Dec 8 2021	17:22:00	10.80	8.542						
Dec 8 2021	17:23:00	10.97	8.418						
Dec 8 2021	17:24:00	10.63	8.750						
Dec 8 2021	17:25:00	9.978	9.337						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Dec 8 2021	17:26:00	10.72	8.718						
Dec 8 2021	17:27:00	10.29	9.105						
Dec 8 2021	17:28:00	10.29	9.093						
Dec 8 2021	17:29:00	10.62	8.814						
Dec 8 2021	17:30:00	10.72	8.741						
Dec 8 2021	17:31:00	10.44	9.013						
Dec 8 2021	17:32:00	10.02	9.354						
Dec 8 2021	17:33:00	10.08	9.303						
Dec 8 2021	17:34:00	10.60	8.849						
Dec 8 2021	17:35:00	11.09	8.450						
Dec 8 2021	17:36:00	10.54	8.942						
Dec 8 2021	17:37:00	10.59	8.901						
Dec 8 2021	17:38:00	10.48	9.009						
Dec 8 2021	17:39:00	9.849	9.551						
Dec 8 2021	17:40:00	10.38	9.081						
Dec 8 2021	17:41:00	10.81	8.747						
Dec 8 2021	17:42:00	10.38	9.111						
Dec 8 2021	17:43:00	10.85	8.708						
Dec 8 2021	17:44:00	10.86	8.718						
Dec 8 2021	17:45:00	10.60	8.958						
Dec 8 2021	17:46:00	10.84	8.773						
Dec 8 2021	17:47:00	10.61	8.973						
Dec 8 2021	17:48:00	10.15	9.361						
End of port 1 point 3									

	Average:	11.05	8.418						
	Max:	12.58	9.717						
	Min:	9.820	7.027						

Stratification Results

Port	**Point**	O2-695	CO2-741						
1	1	11.38	8.016						
1	2	11.28	8.309						
1	3	10.50	8.914						
	Strat diff:	0.327	0.501						
	Strat %:	5.006	5.955						

MAQDAQ 1.0			
Project Name: Covanta Marion	Project Number: PROJ-010935	CEMS Operator: PB	Unit/Condition: Unit 2
Run Length: 120	Record Interval: 6	Average Interval: 60	Triplicate Sampling: False
Traverse: True	Ports: 1	Points per port: 3	DAQ Device: DT9806(00)

Run 3 Post run bias - Run 3 Unit 2

15:48:00 - 17:48:00

	Name:	O2-695	CO2-741						
	Make/Model:								
	25A or 7E:	7E	7E						

Run summary data									
	Raw Avg:	11.05	8.418						
	Max:	12.58	9.717						
	Min:	9.820	7.027						

Cylinder Concentrations									
	Zero:	0.000	0.000						
	Low:								
	Mid:	10.19	9.923						
	High:	23.04	22.66						

Calibration Readings									
	Zero reading:	-0.044	-0.032						
	Low reading:								
	Mid reading:	10.24	9.892						
	High reading:	23.04	22.67						

EPA Method 7E Error Calculations									
Zero %Err:	**<2.0**	-0.191	-0.141						
Mid %Err:	**<2.0**	0.217	-0.137						
High %Err:	**<2.0**	0.000	0.044						

Initial Bias Data									
	Zero reading:	0.064	0.269						
	Span reading:	10.12	10.01						
Zero % bias:	**<5.0**	0.469	1.328						
Span % bias:	**<5.0**	-0.521	0.521						

Final Bias Data									
	Zero reading:	0.019	0.096						
	Span reading:	10.15	10.10						
Zero % bias:	**<5.0**	0.273	0.565						
Span % bias:	**<5.0**	-0.391	0.918						
Zero % drift:	**<3.0**	0.196	0.763						
Span % drift:	**<3.0**	0.130	0.397						

Bias Corrected Averages									
	Cor Avg:	11.11	8.278						

Appendix A.7
Hydrogen Halides & Halogen Calculations/Results

SOURCE TEST DATA SUMMARY

Hydrogen Chloride & Chlorine by EPA Method 26A

Client				Covanta Marion
Unit / Location				Unit 2
A (stack area), ft^2				12.566
T_{ref} (reference temperature), °F				68
Steam Production, Mlb/hr	68.3	67.9	66.7	67.6
Test number	1-HCl	2-HCl	3-HCl	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Start / Stop time	0937-1037	1123-1223	1628-1728	--
Meter box number	MB24	MB24	MB24	--
C_p (pitot coefficient), dimensionless	0.84	0.84	0.84	0.84
Y (meter calibration factor), dimensionless	1.0201	1.0201	1.0201	1.0201
Θ (sample time), min	60	60	60	60
P_{bar} (barometric pressure), in Hg	29.70	29.70	29.70	29.70
V_m (meter box volume), acf	41.208	41.565	40.397	41.057
V_{lc} (impinger liquid), gm	176.2	171.7	178.1	175.3
T_m (meter temperature), °F	53.1	56.4	52.9	54.1
ΔH (meter pressure), in. H_2O	1.500	1.500	1.500	1.500
ΔP (velocity head), in. H_2O	1.4419	1.5788	1.4683	1.4964
P_g (static pressure), in. H_2O	-1.60	-1.60	-1.60	-1.60
T_s (stack temperature), °F	267.5	268.7	264.1	266.8
$\%O_2$ (oxygen stack gas), % volume dry	11.00	11.00	11.11	11.04
$\%CO_2$ (carbon dioxide stack gas), % volume dry	8.40	8.48	8.28	8.38
BLANK				
	HCl	**Cl_2**		
V_a (Volume of solvent), ml	270	210	--	--
$m_{a'}$ (Mass of analyte in solvent), µg-analyte residue	746	82.6	--	--
m_a (Mass of analyte in solvent), mg-analyte residue	0.746	0.0826	--	--
m_{max} (Mass of residue in solvent correction limit), mg-analyte residue	0.27	0.21	--	--
ρ_a (density of dilute H_2SO_4) mg-solvent/ml-solvent	1000	1000	--	--
C_a (solvent blank residue conc.) mg-analyte residue / mg-solvent	0.00000276	0.000000393	--	--
C_{max} (solvent blank residue conc. limit) mg-analyte residue / mg-solvent	0.000001	0.000001	--	--
C_a (solvent blank residue conc. applicable) mg-analyte residue / mg-solvent	0.000001	0.000000393	--	--
LAB RESULTS				
Impingers 1 & 2 (Sulfuric Acid Absorbing Solution)				
m_{12} (mass of HCl), µg	8,405	12,712	9,231	10,116
$V_{s,12}$ (Sample volume) ml	430	430	413	--
Impingers 3 & 4 (Sodium Hydroxide Absorbing Solution)				
m_{34} (mass of Cl_2), µg	292	279	308	293
$V_{s,34}$ (Sample volume) ml	345	313	335	--
1a $V_{m(std)}$ (standard sample volume), dscf	43.100	43.193	42.265	42.853
1b $V_{w(std)}$ (water vapor volume), scf	8.308	8.096	8.397	8.267
1c B_{ws} (moisture fraction), non-dimensional	0.1616	0.1578	0.1658	0.1617
B_{ws} (moisture fraction saturated), non-dimensional	NA	NA	NA	NA
B_{ws} (moisture fraction applicable), non-dimensional	0.1616	0.1578	0.1658	0.1617
1d M_d (stack gas molecular weight), dry	29.784	29.796	29.769	29.783
1e M_s (stack gas molecular weight), wet	27.880	27.934	27.818	27.877
1f P_s (absolute stack pressure), in Hg	29.582	29.582	29.582	29.582
1g V_s (stack gas velocity), ft/sec	80.988	84.730	81.624	82.448
1h Q (stack flow rate), acf/min	61,064	63,885	61,543	62,164
1i Q_{sw} (stack flow rate), wscf/min	43,818	45,770	44,371	44,653
1j Q_{sd} (stack flow rate), dscf/min	36,737	38,545	37,016	37,433
Hydrogen Chloride (HCl) Emissions				
mg/sample as HCl	8.14	12.4	8.99	9.86
mg/dscm as HCl	6.67	10.2	7.51	8.12
ppmvd as HCl	4.40	6.71	4.95	5.35
ppmvd @ 7% O_2 as HCl	6.17	9.42	7.03	7.54
lb/hr as HCl	0.917	1.47	1.04	1.14
lb/1000 lb steam as HCl	0.0134	0.0216	0.0156	0.0169
Chlorine (Cl_2) Emissions				
mg/sample as Cl_2	0.242	0.241	0.262	0.248
mg/dscm as Cl_2	0.198	0.197	0.219	0.205
ppmvd as Cl_2	0.0672	0.0669	0.0741	0.0694
ppmvd @ 7% O_2 as Cl_2	0.0943	0.0939	0.105	0.0978
lb/hr as Cl_2	0.0272	0.0285	0.0303	0.0287
lb/1000 lb steam as Cl_2	3.99E-04	4.19E-04	4.54E-04	4.24E-04

SOURCE TEST DATA SUMMARY

Hydrogen Fluoride by EPA Method 26A

Client				Covanta Marion
Unit / Location				Unit 2
A (stack area), ft^2				12.566
T_{ref} (reference temperature), °F				68
Steam Production, Mlb/hr	68.3	67.9	66.7	67.6
Test number	1-HF	2-HF	3-HF	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Start / Stop time	0937-1037	1123-1223	1628-1728	--
Meter box number	MB24	MB24	MB24	--
C_p (pitot coefficient), dimensionless	0.84	0.84	0.84	0.84
Y (meter calibration factor), dimensionless	1.0201	1.0201	1.0201	1.0201
Θ (sample time), min	60	60	60	60
P_{bar} (barometric pressure), in Hg	29.70	29.70	29.70	29.70
V_m (meter box volume), acf	41.208	41.565	40.397	41.057
V_{lc} (impinger liquid), gm	176.2	171.7	178.1	175.3
T_m (meter temperature), °F	53.1	56.4	52.9	54.1
ΔH (meter pressure), in. H_2O	1.500	1.500	1.500	1.500
ΔP (velocity head), in. H_2O	1.4419	1.5788	1.4683	1.4964
P_g (static pressure), in. H_2O	-1.60	-1.60	-1.60	-1.60
T_s (stack temperature), °F	267.5	268.7	264.1	266.8
$\%O_2$ (oxygen stack gas), % volume dry	11.00	11.00	11.11	11.04
$\%CO_2$ (carbon dioxide stack gas), % volume dry	8.40	8.48	8.28	8.38
BLANK				
	HF			
V_a (Volume of solvent), ml	270	--	--	--
$m_{a'}$ (Mass of analyte in solvent), µg-analyte residue	<14.2	--	--	--
m_a (Mass of analyte in solvent), mg-analyte residue	<0.0142	--	--	--
m_{max} (Mass of residue in solvent correction limit), mg-analyte residue	0.27	--	--	--
ρ_a (density of dilute H_2SO_4) mg-solvent/ml-solvent	1000	--	--	--
C_a (solvent blank residue conc.) mg-analyte residue / mg-solvent	<0.00000005	--	--	--
C_{max} (solvent blank residue conc. limit) mg-analyte residue / mg-solvent	0.000001	--	--	--
C_a (solvent blank residue conc. applicable) mg-analyte residue / mg-solvent	0.000000	--	--	--
LAB RESULTS				
Impingers 1 & 2 (Sulfuric Acid Absorbing Solution)				
m_{12} (mass of HF), µg	<22.6	<22.6	<21.7	<22.3
$V_{s,12}$ (Sample volume) ml	430	430	413	--
1a $V_{m(std)}$ (standard sample volume), dscf	43.100	43.193	42.265	42.853
1b $V_{w(std)}$ (water vapor volume), scf	8.308	8.096	8.397	8.267
1c B_{ws} (moisture fraction), non-dimensional	0.1616	0.1578	0.1658	0.1617
B_{ws} (moisture fraction saturated), non-dimensional	NA	NA	NA	NA
B_{ws} (moisture fraction applicable), non-dimensional	0.1616	0.1578	0.1658	0.1617
1d M_d (stack gas molecular weight), dry	29.784	29.796	29.769	29.783
1e M_s (stack gas molecular weight), wet	27.880	27.934	27.818	27.877
1f P_s (absolute stack pressure), in Hg	29.582	29.582	29.582	29.582
1g V_s (stack gas velocity), ft/sec	80.988	84.730	81.624	82.448
1h Q (stack flow rate), acf/min	61,064	63,885	61,543	62,164
1i Q_{sw} (stack flow rate), wscf/min	43,818	45,770	44,371	44,653
1j Q_{sd} (stack flow rate), dscf/min	36,737	38,545	37,016	37,433
Hydrogen Fluoride (HF) Emissions				
mg/sample as HF	<0.0226	<0.0226	<0.0217	<0.0223
mg/dscm as HF	<0.0185	<0.0185	<0.0181	<0.0184
ppmvd as HF	<0.0222	<0.0222	<0.0218	<0.0221
ppmvd @ 7% O_2 as HF	<0.0312	<0.0312	<0.0309	<0.0311
lb/hr as HF	<0.00255	<0.00267	<0.00251	<0.00257
lb/1000 lb steam as HF	<3.73E-05	<3.93E-05	<3.77E-05	<3.81E-05

SOURCE TEST DATA SUMMARY

Hydrogen Bromide & Bromine by EPA Method 26A

Client				Covanta Marion
Unit / Location				Unit 2
A (stack area), ft^2				12.566
T_{ref} (reference temperature), °F				68
Steam Production, Mlb/hr	68.3	67.9	66.7	67.6
Test number	1-HBr	2-Br	3-Br	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Start / Stop time	0937-1037	1123-1223	1628-1728	--
Meter box number	MB24	MB24	MB24	--
C_p (pitot coefficient), dimensionless	0.84	0.84	0.84	0.84
Y (meter calibration factor), dimensionless	1.0201	1.0201	1.0201	1.0201
Θ (sample time), min	60	60	60	60
P_{bar} (barometric pressure), in Hg	29.70	29.70	29.70	29.70
V_m (meter box volume), acf	41.208	41.565	40.397	41.057
V_{lc} (impinger liquid), gm	176.2	171.7	178.1	175.3
T_m (meter temperature), °F	53.1	56.4	52.9	54.1
ΔH (meter pressure), in. H_2O	1.500	1.500	1.500	1.500
ΔP (velocity head), in. H_2O	1.4419	1.5788	1.4683	1.4964
P_g (static pressure), in. H_2O	-1.60	-1.60	-1.60	-1.60
T_s (stack temperature), °F	267.5	268.7	264.1	266.8
$\%O_2$ (oxygen stack gas), % volume dry	11.00	11.00	11.11	11.04
$\%CO_2$ (carbon dioxide stack gas), % volume dry	8.40	8.48	8.28	8.38

BLANK

	HBr	Br_2		
V_a (Volume of solvent), ml	270	210	--	--
$m_{a'}$ (Mass of analyte in solvent), µg-analyte residue	<13.6	<21.0	--	--
m_a (Mass of analyte in solvent), mg-analyte residue	<0.0136	<0.0210	--	--
m_{max} (Mass of residue in solvent correction limit), mg-analyte residue	0.27	0.21	--	--
ρ_a (density of dilute H_2SO_4) mg-solvent/ml-solvent	1000	1000	--	--
C_a (solvent blank residue conc.) mg-analyte residue / mg-solvent	<0.00000005	<0.0000001	--	--
C_{max} (solvent blank residue conc. limit) mg-analyte residue / mg-solvent	0.000001	0.000001	--	--
C_a (solvent blank residue conc. applicable) mg-analyte residue / mg-solvent	0.0000000	0.0000000	--	--

LAB RESULTS

Impingers 1 & 2 (Sulfuric Acid Absorbing Solution)				
m_{12} (mass of HBr), µg	268	201	219	229
$V_{s,12}$ (Sample volume) ml	430	430	413	--
Impingers 3 & 4 (Sodium Hydroxide Absorbing Solution)				
m_{34} (mass of Br_2), µg	<34.5	<31.3	<33.5	<33.1
$V_{s,34}$ (Sample volume) ml	345	313	335	--
1a $V_{m(std)}$ (standard sample volume), dscf	43.100	43.193	42.265	42.853
1b $V_{w(std)}$ (water vapor volume), scf	8.308	8.096	8.397	8.267
1c B_{ws} (moisture fraction), non-dimensional	0.1616	0.1578	0.1658	0.1617
B_{ws} (moisture fraction saturated), non-dimensional	NA	NA	NA	NA
B_{ws} (moisture fraction applicable), non-dimensional	0.1616	0.1578	0.1658	0.1617
1d M_d (stack gas molecular weight), dry	29.784	29.796	29.769	29.783
1e M_s (stack gas molecular weight), wet	27.880	27.934	27.818	27.877
1f P_s (absolute stack pressure), in Hg	29.582	29.582	29.582	29.582
1g V_s (stack gas velocity), ft/sec	80.988	84.730	81.624	82.448
1h Q (stack flow rate), acf/min	61,064	63,885	61,543	62,164
1i Q_{sw} (stack flow rate), wscf/min	43,818	45,770	44,371	44,653
1j Q_{sd} (stack flow rate), dscf/min	36,737	38,545	37,016	37,433
Hydrogen Bromide (HBr) Emissions				
mg/sample as HBr	0.268	0.201	0.219	0.229
mg/dscm as HBr	0.220	0.164	0.183	0.189
ppmvd as HBr	0.0652	0.0488	0.0544	0.0561
ppmvd @ 7% O_2 as HBr	0.0916	0.0685	0.0772	0.0791
lb/hr as HBr	0.0302	0.0237	0.0253	0.0264
lb/1000 lb steam as HBr	4.42E-04	3.49E-04	3.80E-04	3.90E-04
Bromine (Br_2) Emissions				
mg/sample as Br_2	<0.0345	<0.0313	<0.0335	<0.0331
mg/dscm as Br_2	<0.0283	<0.0256	<0.0280	<0.0273
ppmvd as Br_2	<0.00425	<0.00385	<0.00421	<0.00410
ppmvd @ 7% O_2 as Br_2	<0.00597	<0.00540	<0.00598	<0.00578
lb/hr as Br_2	<0.00389	<0.00369	<0.00388	<0.00382
lb/1000 lb steam as Br_2	<5.69E-05	<5.44E-05	<5.81E-05	<5.65E-05

Appendix A.8
Ammonia Calculations/Results

SOURCE TEST DATA SUMMARY

Client				Covanta Marion
Unit / Location				Unit 2
A (stack area), ft^2				12.566
Reference temperature, °F				68
Steam Production, Mlb/hr	68.3	67.9	66.7	67.6
Test number	Run 1	Run 2	Run 3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Start / Stop time	0937-1037	1123-1223	1313-1413	--
SAMPLE TRAIN DATA				
Meter box number	MB31	MB31	MB31	--
C_p (pitot coefficient), dimensionless	0.84	0.84	0.84	0.84
Y (meter calibration factor), dimensionless	0.9902	0.9902	0.9902	0.9902
P_{bar} (barometric pressure), in Hg	29.70	29.70	29.70	29.70
V_m (meter box volume), acf	38.376	38.565	39.099	38.680
V_{lc} (impinger liquid mass), g	162.1	149.5	161.0	157.5
T_m (meter temperature), °F	51.5	65.7	77.1	64.8
ΔH (meter pressure), in. H_2O	1.400	1.400	1.400	1.400
P_g (static pressure), in. H_2O	0.00	0.00	-1.60	-0.53
ANALYZER DATA				
O_2, % volume dry	11.00	11.00	11.11	11.04
CO_2, % volume dry	8.40	8.48	8.28	8.38
VOLUMETRIC FLOW RATE				
1a V_{mstd}, standard sample volume, dscf	39.072	38.207	37.912	38.397
1b V_{wcstd}, water vapor volume, scf	7.6430	7.0489	7.5912	7.4277
$B_{ws,meas}$ (moisture fraction measured), non-dimension	0.1636	0.1558	0.1668	0.1621
$B_{ws,sat}$ (moisture fraction at saturation), non-dimensior	NA	NA	NA	NA
1c B_{ws} (moisture fraction), non-dimensional	0.1636	0.1558	0.1668	0.1621
1d M_d, stack gas dry molecular weight, lb/lb-mole	29.784	29.796	29.769	29.783
1e M_s, stack gas wet molecular weight, lb/lb-mole	27.856	27.959	27.806	27.873
1f P_s, absolute stack pressure, in. Hg	29.700	29.700	29.582	29.661
1j Stack flow rate - based on pitot, dscfm	36,737	38,545	37,016	37,433
NH_3 ION CHROMATOGRAPHY				
Sample volume, ml	434.1	430.5	466.7	443.8
Sample concentration, mg/L	2.76	2.60	4.44	3.27
EMISSIONS				
NH_3 concentrations, ppm volume dry	1.54	1.47	2.74	1.92
2b NH_3 concentrations, ppm @ 7% O_2 dry	2.16	2.06	3.90	2.71
2e NH_3 mass emissions, lb/hr	0.150	0.150	0.269	0.190
NH_3 mass emissions, lb/1000 lb steam	0.00220	0.00221	0.00404	0.00282

Note(s): Stack flow rate from EPA 26A test

Appendix A.9
Aldehydes Calculations/Results

SOURCE TEST DATA SUMMARY

Client				Covanta Marion
Method				CARB 430
Unit / Location				Unit 2
Stack area, square feet				12.566
Reference temperature, °F				68
Reference pressure, psi				14.7
Steam Production, Mlb/hr	68.2	66.7	68.0	67.6
Test number	1	2	3	Average
Date	12/8/2021	12/8/2021	12/8/2021	--
Start / Stop time	1139-1239	1313-1413	1440-1540	--
Sample run time, minutes	60	60	60	60
SAMPLING DATA				
Gas meter calibration factor, Y	1.0047	1.0047	1.0047	1.0047
Gas meter sample volume, liters	30.031	30.057	30.022	30.037
Average meter temperature, °F	65.0	69.3	62.0	65.4
Barometric Pressure, in Hg	29.70	29.70	29.70	29.70
O_2, % volume dry	11.00	11.00	11.11	11.04
CO_2, % volume dry	8.40	8.48	8.28	8.38
Flow rate, dscfm	36,737	38,545	37,016	37,433
TESTING CALCULATIONS				
Stack gas molecular weight	29.78	29.80	29.77	29.78
Formaldehyde molecular weight	30.03	30.03	30.03	30.03
Acetaldehyde molecular weight	44.05	44.05	44.05	44.05
Acrolein molecular weight	56.06	56.06	56.06	56.06
Sample volume, liters	30.03	30.06	30.02	30.04
Sample volume, standard liters	30.12	29.90	30.29	30.10
Sample volume, dscm	0.0301	0.0299	0.0303	0.0301
FORMALDEHYDE RESULTS				
Field blank, µg/sample	<0.255	<0.250	<0.250	<0.252
Vial A, µg/sample	0.567	0.610	0.807	0.661
Vial B, µg/sample	<0.260	<0.250	<0.250	<0.253
Total, µg/sample	<0.827	<0.860	<1.057	<0.915
ACETALDEHYDE RESULTS				
Field blank, µg/sample	<0.255	<0.250	<0.250	<0.252
Vial A, µg/sample	0.399	0.844	0.576	0.606
Vial B, µg/sample	<0.260	0.427	<0.250	<0.312
Total, µg/sample	<0.659	1.27	<0.826	<0.919
ACROLEIN RESULTS				
Field blank, µg/sample	<0.255	<0.250	<0.250	<0.252
Vial A, µg/sample	<0.250	<0.250	<0.250	<0.250
Vial B, µg/sample	<0.260	<0.250	<0.250	<0.253
Total, µg/sample	<0.510	<0.500	<0.500	<0.503
FORMALDEHYDE BLANK CALCULATIONS				
Field blank average concentration, µg/sample	<0.252	<0.252	<0.252	--
Sample to blank ratio	3.29	3.42	4.20	--
Concentration of samples, µg	<0.827	<0.860	<1.06	<0.915
ACETALDEHYDE BLANK CALCULATIONS				
Field blank average concentration, µg/sample	<0.252	<0.252	<0.252	--
Sample to blank ratio	2.62	5.05	3.28	--
Concentration of samples, µg	<0.659	<1.27	<0.826	<0.919
ACROLEIN BLANK CALCULATIONS				
Field blank average concentration, µg/sample	<0.252	<0.252	<0.252	--
Sample to blank ratio	2.03	1.99	1.99	--
Concentration of samples, µg	<0.510	<0.500	<0.500	<0.503

EMISSIONS (AS MEASURED)				
Formaldehyde concentration, mg/dscm	<0.0275	<0.0288	<0.0349	<0.0304
Formaldehyde concentration, ppm	<0.0220	<0.0230	<0.0280	<0.0243
Formaldehyde concentration, ppm @ 7% O_2	<0.0309	<0.0324	<0.0397	<0.0343
Formaldehyde concentration, lb/hr	<3.78E-03	<4.15E-03	<4.84E-03	<4.25E-03
Formaldehyde emissions, lb/1000 lb steam	<5.54E-05	<6.22E-05	<7.11E-05	<6.29E-05
Acetaldehyde concentration, mg/dscm	<0.0219	0.043	<0.0273	<0.0306
Acetaldehyde concentration, ppm	<0.0119	0.023	<0.0149	<0.0167
Acetaldehyde concentration, ppm @ 7% O_2	<0.0168	0.033	<0.0212	<0.0235
Acetaldehyde concentration, lb/hr	<3.01E-03	6.13E-03	<3.78E-03	<4.31E-03
Acetaldehyde emissions, lb/1000 lb steam	<4.41E-05	9.19E-05	<5.56E-05	<6.39E-05
Acrolein concentration, mg/dscm	<0.0169	<0.0167	<0.0165	<0.0167
Acrolein concentration, ppm	<0.00727	<0.00718	<0.00709	<0.00718
Acrolein concentration, ppm @ 7% O_2	<0.0102	<0.0101	<0.0101	<0.0101
Acrolein concentration, lb/hr	<2.33E-03	<2.41E-03	<2.29E-03	<2.34E-03
Acrolein emissions, lb/1000 lb steam	<3.41E-05	<3.62E-05	<3.36E-05	<3.46E-05
REPORTING LIMIT BASED EMISSIONS[1]				
Formaldehyde concentration, mg/dscm	<0.0418	<0.0421	<0.0415	<0.0418
Formaldehyde concentration, ppm	<0.0335	<0.0337	<0.0333	<0.0335
Formaldehyde concentration, ppm @ 7% O_2	<0.0470	<0.0473	<0.0473	<0.0472
Formaldehyde emissions, lb/hr	<5.74E-03	<6.07E-03	<5.76E-03	<5.86E-03
Formaldehyde emissions, lb/1000 lb steam	<8.42E-05	<9.10E-05	<8.47E-05	<8.66E-05
Acetaldehyde concentration, mg/dscm	<0.0418	0.0421	<0.0415	<0.0418
Acetaldehyde concentration, ppm	<0.0228	0.0230	<0.0227	<0.0228
Acetaldehyde concentration, ppm @ 7% O_2	<0.0320	0.0323	<0.0322	<0.0322
Acetaldehyde emissions, lb/hr	<5.74E-03	6.07E-03	<5.76E-03	<5.86E-03
Acetaldehyde emissions, lb/1000 lb steam	<8.42E-05	9.10E-05	<8.47E-05	<8.66E-05
Acrolein concentration, mg/dscm	<0.0418	<0.0421	<0.0415	<0.0418
Acrolein concentration, ppm	<0.0179	<0.0181	<0.0178	<0.0179
Acrolein concentration, ppm @ 7% O_2	<0.0252	<0.0254	<0.0253	<0.0253
Acrolein emissions, lb/hr	<5.74E-03	<6.07E-03	<5.76E-03	<5.86E-03
Acrolein emissions, lb/1000 lb steam	<8.42E-05	<9.10E-05	<8.47E-05	<8.66E-05

[1] if the sample to blank ratio is less than 5, then the reporting limit of five time the average field blank concentration shall be used rather than the concentration of the blank corrected field samples in all further calculations

Appendix A.10
VOST Calculations/Results

Unit 2
VOST SUMMARY

Emissions Analyte		Run 1	Run 2	Run 3	Average
Acetone	µg/m3	**<19.529**	**<20.127**	**<20.908**	<20.188
Benzene	µg/m3	**<17.265**	**<35.799**	**<29.009**	<27.358
Bromobenzene	µg/m3	<0.290	<0.295	<0.292	<0.292
Bromochloromethane	µg/m3	<0.963	<0.980	<0.972	<0.971
Bromodichloromethane	µg/m3	**<2.055**	**<2.057**	**<1.976**	<2.029
Bromoform	µg/m3	<0.414	<0.423	<0.418	<0.418
Bromomethane	µg/m3	**<6.390**	**<6.157**	**<4.505**	<5.684
2-Butanone (MEK)	µg/m3	<7.577	<7.696	<7.641	<7.638
n-Butylbenzene	µg/m3	<1.502	<1.526	<1.514	<1.514
sec-Butylbenzene	µg/m3	<1.260	<1.279	<1.270	<1.269
tert-Butylbenzene	µg/m3	<0.658	<0.669	<0.664	<0.664
Carbon disulfide	µg/m3	**<3.510**	**<5.957**	**<4.944**	<4.804
Carbon tetrachloride	µg/m3	**<2.941**	**<2.980**	**<3.035**	<2.985
Chlorobenzene	µg/m3	**<0.653**	**<0.686**	**<0.666**	<0.668
Chlorodibromomethane	µg/m3	**<0.850**	**<0.836**	**<0.813**	<0.833
Chloroethane	µg/m3	<1.473	<1.499	<1.485	<1.486
Chloroform	µg/m3	**<4.902**	**<5.253**	**<3.550**	<4.569
Chloromethane	µg/m3	**<3.436**	**<6.670**	**<5.992**	<5.366
2-Chlorotoluene	µg/m3	<0.485	<0.493	<0.489	<0.489
4-Chlorotoluene	µg/m3	<0.607	<0.618	<0.612	<0.612
1,2-Dibromo-3-Chloropropane	µg/m3	<1.370	<1.394	<1.381	<1.382
1,2-Dibromoethane (EDB)	µg/m3	<0.886	<0.901	<0.894	<0.894
Dibromomethane	µg/m3	<0.587	<0.599	<0.593	<0.593
1,2-Dichlorobenzene	µg/m3	<0.990	<1.005	<0.998	<0.997
1,3-Dichlorobenzene	µg/m3	<0.813	<0.825	<0.820	<0.819
1,4-Dichlorobenzene	µg/m3	<0.975	<0.990	<0.984	<0.983
Dichlorodifluoromethane	µg/m3	**<1.894**	**<1.874**	**<1.858**	<1.875
1,1-Dichloroethane	µg/m3	<0.419	<0.426	<0.422	<0.422
1,2-Dichloroethane	µg/m3	**<0.436**	**<0.545**	**<0.799**	<0.593
1,1-Dichloroethene	µg/m3	<0.597	<0.609	<0.602	<0.603
cis-1,2-Dichloroethene	µg/m3	<0.438	<0.446	<0.442	<0.442
trans-1,2-Dichloroethene	µg/m3	<0.480	<0.488	<0.484	<0.484
1,2-Dichloropropane	µg/m3	<0.532	<0.540	<0.536	<0.536
1,3-Dichloropropane	µg/m3	<0.329	<0.335	<0.332	<0.332
2,2-Dichloropropane	µg/m3	<0.388	<0.395	<0.392	<0.392
1,1-Dichloropropene	µg/m3	<0.369	<0.376	<0.372	<0.372
cis-1,3-Dichloropropene	µg/m3	<0.707	<0.352	<0.349	<0.469
trans-1,3-Dichloropropene	µg/m3	<0.510	<0.521	<0.515	<0.515
Ethylbenzene	µg/m3	<0.888	<0.902	<0.895	<0.895
Hexachlorobutadiene	µg/m3	<1.934	<1.962	<1.950	<1.949
2-Hexanone	µg/m3	<3.887	<3.954	<3.916	<3.919
Isopropylbenzene	µg/m3	<1.073	<1.090	<1.082	<1.082
4-Isopropyltoluene	µg/m3	<1.163	<1.181	<1.173	<1.172
Methylene Chloride	µg/m3	**<14.815**	**<14.385**	**<12.647**	<13.949
4-Methyl-2-pentanone (MIBK)	µg/m3	<4.610	<4.686	<4.648	<4.648
N-Propylbenzene	µg/m3	<2.397	<1.087	<1.079	<1.521
Styrene	µg/m3	**<0.375**	**<0.461**	**<0.419**	<0.418
1,1,2-Tetrachloroethane	µg/m3	<0.297	<0.302	<0.299	<0.299
1,1,2,2-Tetrachloroethane	µg/m3	<1.369	<1.391	<1.380	<1.380
Tetrachloroethene	µg/m3	**<0.951**	**<1.030**	**<2.533**	<1.505
Toluene	µg/m3	**4.857**	**<4.852**	**<6.742**	<5.484
1,2,3-Trichlorobenzene	µg/m3	<2.521	<2.561	<2.543	<2.542
1,2,4-Trichlorobenzene	µg/m3	<2.240	<2.275	<2.261	<2.259
1,1,1-Trichloroethane	µg/m3	<0.663	<0.674	<0.667	<0.668
1,1,2-Trichloroethane	µg/m3	<0.877	<0.891	<0.884	<0.884
Trichloroethene	µg/m3	**<0.688**	**<0.804**	**<0.751**	<0.748
Trichlorofluoromethane	µg/m3	**<1.179**	**<1.199**	**<1.151**	<1.176
1,2,3-Trichloropropane	µg/m3	<1.452	<1.477	<1.462	<1.464
1,2,4-Trimethylbenzene	µg/m3	<0.867	<0.882	<0.875	<0.874
1,3,5-Trimethylbenzene	µg/m3	<0.359	<0.366	<0.363	<0.363
Vinyl chloride	µg/m3	**<1.029**	**<1.172**	**<1.242**	<1.148
o-Xylene	µg/m3	<0.854	<0.868	<0.862	<0.861
m,p-Xylene	µg/m3	**<0.926**	**<0.898**	**<0.841**	<0.889

Emissions Analyte		Run 1	Run 2	Run 3	Average
Acetone	µg/m3 at 7% O_2	**<27.420**	**<28.260**	**<29.685**	<28.455
Benzene	µg/m3 at 7% O_2	**<24.240**	**<50.263**	**<41.188**	<38.564
Bromobenzene	µg/m3 at 7% O_2	<0.407	<0.414	<0.414	<0.412
Bromochloromethane	µg/m3 at 7% O_2	<1.352	<1.375	<1.380	<1.369
Bromodichloromethane	µg/m3 at 7% O_2	**<2.886**	**<2.888**	**<2.806**	<2.860
Bromoform	µg/m3 at 7% O_2	<0.581	<0.594	<0.593	<0.590
Bromomethane	µg/m3 at 7% O_2	**<8.972**	**<8.645**	**<6.397**	<8.004
2-Butanone (MEK)	µg/m3 at 7% O_2	<10.639	<10.806	<10.848	<10.764
n-Butylbenzene	µg/m3 at 7% O_2	<2.109	<2.143	<2.150	<2.134
sec-Butylbenzene	µg/m3 at 7% O_2	<1.769	<1.796	<1.803	<1.789
tert-Butylbenzene	µg/m3 at 7% O_2	<0.924	<0.939	<0.943	<0.935
Carbon disulfide	µg/m3 at 7% O_2	**<4.928**	**<8.364**	**<7.020**	<6.770
Carbon tetrachloride	µg/m3 at 7% O_2	**<4.129**	**<4.183**	**<4.310**	<4.207
Chlorobenzene	µg/m3 at 7% O_2	**<0.917**	**<0.962**	**<0.946**	<0.942
Chlorodibromomethane	µg/m3 at 7% O_2	**<1.194**	**<1.173**	**<1.155**	<1.174
Chloroethane	µg/m3 at 7% O_2	<2.068	<2.104	<2.109	<2.094
Chloroform	µg/m3 at 7% O_2	**<6.883**	**<7.376**	**<5.041**	<6.433
Chloromethane	µg/m3 at 7% O_2	**<4.824**	**<9.364**	**<8.508**	<7.565
2-Chlorotoluene	µg/m3 at 7% O_2	<0.680	<0.692	<0.694	<0.689
4-Chlorotoluene	µg/m3 at 7% O_2	<0.852	<0.868	<0.869	<0.863
1,2-Dibromo-3-Chloropropane	µg/m3 at 7% O_2	<1.924	<1.958	<1.961	<1.948
1,2-Dibromoethane (EDB)	µg/m3 at 7% O_2	<1.244	<1.266	<1.269	<1.260
Dibromomethane	µg/m3 at 7% O_2	<0.825	<0.841	<0.842	<0.836
1,2-Dichlorobenzene	µg/m3 at 7% O_2	<1.389	<1.410	<1.417	<1.406
1,3-Dichlorobenzene	µg/m3 at 7% O_2	<1.141	<1.159	<1.164	<1.155
1,4-Dichlorobenzene	µg/m3 at 7% O_2	<1.369	<1.390	<1.396	<1.385
Dichlorodifluoromethane	µg/m3 at 7% O_2	**<2.659**	**<2.632**	**<2.637**	<2.643
1,1-Dichloroethane	µg/m3 at 7% O_2	<0.588	<0.598	<0.599	<0.595
1,2-Dichloroethane	µg/m3 at 7% O_2	**<0.611**	**<0.765**	**<1.134**	<0.837
1,1-Dichloroethene	µg/m3 at 7% O_2	<0.838	<0.854	<0.855	<0.849
cis-1,2-Dichloroethene	µg/m3 at 7% O_2	<0.615	<0.626	<0.627	<0.623
trans-1,2-Dichloroethene	µg/m3 at 7% O_2	<0.674	<0.685	<0.687	<0.682
1,2-Dichloropropane	µg/m3 at 7% O_2	<0.746	<0.759	<0.761	<0.755
1,3-Dichloropropane	µg/m3 at 7% O_2	<0.463	<0.471	<0.471	<0.468
2,2-Dichloropropane	µg/m3 at 7% O_2	<0.545	<0.555	<0.556	<0.552
1,1-Dichloropropene	µg/m3 at 7% O_2	<0.518	<0.528	<0.529	<0.525
cis-1,3-Dichloropropene	µg/m3 at 7% O_2	<0.992	<0.494	<0.495	<0.660
trans-1,3-Dichloropropene	µg/m3 at 7% O_2	<0.716	<0.731	<0.731	<0.726
Ethylbenzene	µg/m3 at 7% O_2	<1.247	<1.266	<1.271	<1.261
Hexachlorobutadiene	µg/m3 at 7% O_2	<2.715	<2.755	<2.768	<2.746
2-Hexanone	µg/m3 at 7% O_2	<5.457	<5.551	<5.560	<5.523
Isopropylbenzene	µg/m3 at 7% O_2	<1.507	<1.530	<1.537	<1.525
4-Isopropyltoluene	µg/m3 at 7% O_2	<1.633	<1.659	<1.665	<1.652
Methylene Chloride	µg/m3 at 7% O_2	**<20.801**	**<20.198**	**<17.956**	<19.651
4-Methyl-2-pentanone (MIBK)	µg/m3 at 7% O_2	<6.473	<6.579	<6.599	<6.551
N-Propylbenzene	µg/m3 at 7% O_2	<3.366	<1.526	<1.531	<2.141
Styrene	µg/m3 at 7% O_2	**<0.527**	**<0.647**	**<0.595**	<0.590
1,1,2-Tetrachloroethane	µg/m3 at 7% O_2	<0.417	<0.424	<0.424	<0.422
1,1,2,2-Tetrachloroethane	µg/m3 at 7% O_2	<1.922	<1.953	<1.959	<1.945
Tetrachloroethene	µg/m3 at 7% O_2	**<1.336**	**<1.446**	**<3.596**	<2.126
Toluene	µg/m3 at 7% O_2	**6.820**	**<6.813**	**<9.572**	<7.735
1,2,3-Trichlorobenzene	µg/m3 at 7% O_2	<3.540	<3.596	<3.610	<3.582
1,2,4-Trichlorobenzene	µg/m3 at 7% O_2	<3.145	<3.194	<3.210	<3.183
1,1,1-Trichloroethane	µg/m3 at 7% O_2	<0.931	<0.946	<0.947	<0.941
1,1,2-Trichloroethane	µg/m3 at 7% O_2	<1.231	<1.251	<1.255	<1.246
Trichloroethene	µg/m3 at 7% O_2	**<0.966**	**<1.129**	**<1.067**	<1.054
Trichlorofluoromethane	µg/m3 at 7% O_2	**<1.656**	**<1.683**	**<1.634**	<1.658
1,2,3-Trichloropropane	µg/m3 at 7% O_2	<2.039	<2.074	<2.076	<2.063
1,2,4-Trimethylbenzene	µg/m3 at 7% O_2	<1.217	<1.238	<1.242	<1.232
1,3,5-Trimethylbenzene	µg/m3 at 7% O_2	<0.505	<0.514	<0.515	<0.511
Vinyl chloride	µg/m3 at 7% O_2	**<1.445**	**<1.645**	**<1.764**	<1.618
o-Xylene	µg/m3 at 7% O_2	<1.200	<1.218	<1.223	<1.214
m,p-Xylene	µg/m3 at 7% O_2	**<1.301**	**<1.262**	**<1.195**	<1.252

Emissions Analyte		Run 1	Run 2	Run 3	Average
Acetone	ppb vol. dry	**<8.081**	**<8.329**	**<8.652**	<8.354
Benzene	ppb vol. dry	**<5.312**	**<11.015**	**<8.926**	<8.418
Bromobenzene	ppb vol. dry	<0.044	<0.045	<0.045	<0.045
Bromochloromethane	ppb vol. dry	<0.179	<0.182	<0.181	<0.180
Bromodichloromethane	ppb vol. dry	**<0.302**	**<0.302**	**<0.290**	<0.298
Bromoform	ppb vol. dry	<0.039	<0.040	<0.040	<0.040
Bromomethane	ppb vol. dry	**<1.618**	**<1.559**	**<1.141**	<1.439
2-Butanone (MEK)	ppb vol. dry	<2.526	<2.565	<2.547	<2.546
n-Butylbenzene	ppb vol. dry	<0.269	<0.274	<0.271	<0.271
sec-Butylbenzene	ppb vol. dry	<0.226	<0.229	<0.227	<0.227
tert-Butylbenzene	ppb vol. dry	<0.118	<0.120	<0.119	<0.119
Carbon disulfide	ppb vol. dry	**<1.108**	**<1.881**	**<1.561**	<1.516
Carbon tetrachloride	ppb vol. dry	**<0.460**	**<0.466**	**<0.474**	<0.466
Chlorobenzene	ppb vol. dry	**<0.139**	**<0.146**	**<0.142**	<0.143
Chlorodibromomethane	ppb vol. dry	**<0.098**	**<0.096**	**<0.094**	<0.096
Chloroethane	ppb vol. dry	<0.549	<0.558	<0.553	<0.553
Chloroform	ppb vol. dry	**<0.987**	**<1.058**	**<0.715**	<0.920
Chloromethane	ppb vol. dry	**<1.635**	**<3.175**	**<2.852**	<2.554
2-Chlorotoluene	ppb vol. dry	<0.092	<0.094	<0.093	<0.093
4-Chlorotoluene	ppb vol. dry	<0.115	<0.117	<0.116	<0.116
1,2-Dibromo-3-Chloropropane	ppb vol. dry	<0.139	<0.142	<0.141	<0.141
1,2-Dibromoethane (EDB)	ppb vol. dry	<0.113	<0.115	<0.114	<0.114
Dibromomethane	ppb vol. dry	<0.081	<0.083	<0.082	<0.082
1,2-Dichlorobenzene	ppb vol. dry	<0.162	<0.164	<0.163	<0.163
1,3-Dichlorobenzene	ppb vol. dry	<0.133	<0.135	<0.134	<0.134
1,4-Dichlorobenzene	ppb vol. dry	<0.159	<0.162	<0.161	<0.161
Dichlorodifluoromethane	ppb vol. dry	**<0.376**	**<0.373**	**<0.369**	<0.373
1,1-Dichloroethane	ppb vol. dry	<0.102	<0.103	<0.102	<0.103
1,2-Dichloroethane	ppb vol. dry	**<0.106**	**<0.132**	**<0.194**	<0.144
1,1-Dichloroethene	ppb vol. dry	<0.148	<0.151	<0.149	<0.149
cis-1,2-Dichloroethene	ppb vol. dry	<0.109	<0.110	<0.109	<0.110
trans-1,2-Dichloroethene	ppb vol. dry	<0.119	<0.121	<0.120	<0.120
1,2-Dichloropropane	ppb vol. dry	<0.113	<0.115	<0.114	<0.114
1,3-Dichloropropane	ppb vol. dry	<0.071	<0.073	<0.072	<0.072
2,2-Dichloropropane	ppb vol. dry	<0.083	<0.084	<0.083	<0.083
1,1-Dichloropropene	ppb vol. dry	<0.080	<0.081	<0.081	<0.081
cis-1,3-Dichloropropene	ppb vol. dry	<0.153	<0.076	<0.075	<0.102
trans-1,3-Dichloropropene	ppb vol. dry	<0.111	<0.113	<0.112	<0.112
Ethylbenzene	ppb vol. dry	<0.201	<0.204	<0.203	<0.203
Hexachlorobutadiene	ppb vol. dry	<0.178	<0.181	<0.180	<0.180
2-Hexanone	ppb vol. dry	<0.933	<0.949	<0.940	<0.940
Isopropylbenzene	ppb vol. dry	<0.330	<0.335	<0.333	<0.333
4-Isopropyltoluene	ppb vol. dry	<0.208	<0.212	<0.210	<0.210
Methylene Chloride	ppb vol. dry	**<4.192**	**<4.071**	**<3.579**	<3.947
4-Methyl-2-pentanone (MIBK)	ppb vol. dry	<1.106	<1.124	<1.115	<1.115
N-Propylbenzene	ppb vol. dry	<0.479	<0.217	<0.216	<0.304
Styrene	ppb vol. dry	**<0.087**	**<0.106**	**<0.097**	<0.097
1,1,2-Tetrachloroethane	ppb vol. dry	<0.043	<0.043	<0.043	<0.043
1,1,2,2-Tetrachloroethane	ppb vol. dry	<0.196	<0.199	<0.198	<0.198
Tetrachloroethene	ppb vol. dry	**<0.138**	**<0.149**	**<0.367**	<0.218
Toluene	ppb vol. dry	**1.267**	**<1.266**	**<1.759**	<1.430
1,2,3-Trichlorobenzene	ppb vol. dry	<0.334	<0.339	<0.337	<0.337
1,2,4-Trichlorobenzene	ppb vol. dry	<0.297	<0.301	<0.299	<0.299
1,1,1-Trichloroethane	ppb vol. dry	<0.119	<0.121	<0.120	<0.120
1,1,2-Trichloroethane	ppb vol. dry	<0.158	<0.160	<0.159	<0.159
Trichloroethene	ppb vol. dry	**<0.124**	**<0.145**	**<0.135**	<0.135
Trichlorofluoromethane	ppb vol. dry	**<0.206**	**<0.210**	**<0.201**	<0.206
1,2,3-Trichloropropane	ppb vol. dry	<0.237	<0.241	<0.238	<0.239
1,2,4-Trimethylbenzene	ppb vol. dry	<0.173	<0.176	<0.175	<0.175
1,3,5-Trimethylbenzene	ppb vol. dry	<0.072	<0.073	<0.073	<0.073
Vinyl chloride	ppb vol. dry	**<0.396**	**<0.451**	**<0.478**	<0.441
o-Xylene	ppb vol. dry	<0.193	<0.196	<0.195	<0.195
m,p-Xylene	ppb vol. dry	**<0.210**	**<0.203**	**<0.191**	<0.201

Emissions Analyte		Run 1	Run 2	Run 3	Average
Acetone	lb/hr	**<2.69E-03**	**<2.91E-03**	**<2.90E-03**	<2.83E-03
Benzene	lb/hr	**<2.38E-03**	**<5.17E-03**	**<4.02E-03**	<3.86E-03
Bromobenzene	lb/hr	<3.99E-05	<4.26E-05	<4.05E-05	<4.10E-05
Bromochloromethane	lb/hr	<1.32E-04	<1.41E-04	<1.35E-04	<1.36E-04
Bromodichloromethane	lb/hr	**<2.83E-04**	**<2.97E-04**	**<2.74E-04**	<2.85E-04
Bromoform	lb/hr	<5.70E-05	<6.11E-05	<5.79E-05	<5.87E-05
Bromomethane	lb/hr	**<8.79E-04**	**<8.89E-04**	**<6.25E-04**	<7.98E-04
2-Butanone (MEK)	lb/hr	<1.04E-03	<1.11E-03	<1.06E-03	<1.07E-03
n-Butylbenzene	lb/hr	<2.07E-04	<2.20E-04	<2.10E-04	<2.12E-04
sec-Butylbenzene	lb/hr	<1.73E-04	<1.85E-04	<1.76E-04	<1.78E-04
tert-Butylbenzene	lb/hr	<9.05E-05	<9.66E-05	<9.21E-05	<9.30E-05
Carbon disulfide	lb/hr	**<4.83E-04**	**<8.60E-04**	**<6.86E-04**	<6.76E-04
Carbon tetrachloride	lb/hr	**<4.05E-04**	**<4.30E-04**	**<4.21E-04**	<4.19E-04
Chlorobenzene	lb/hr	**<8.99E-05**	**<9.90E-05**	**<9.24E-05**	<9.37E-05
Chlorodibromomethane	lb/hr	**<1.17E-04**	**<1.21E-04**	**<1.13E-04**	<1.17E-04
Chloroethane	lb/hr	<2.03E-04	<2.16E-04	<2.06E-04	<2.08E-04
Chloroform	lb/hr	**<6.75E-04**	**<7.58E-04**	**<4.92E-04**	<6.42E-04
Chloromethane	lb/hr	**<4.73E-04**	**<9.63E-04**	**<8.31E-04**	<7.56E-04
2-Chlorotoluene	lb/hr	<6.67E-05	<7.12E-05	<6.78E-05	<6.86E-05
4-Chlorotoluene	lb/hr	<8.35E-05	<8.93E-05	<8.49E-05	<8.59E-05
1,2-Dibromo-3-Chloropropane	lb/hr	<1.89E-04	<2.01E-04	<1.92E-04	<1.94E-04
1,2-Dibromoethane (EDB)	lb/hr	<1.22E-04	<1.30E-04	<1.24E-04	<1.25E-04
Dibromomethane	lb/hr	<8.08E-05	<8.65E-05	<8.22E-05	<8.32E-05
1,2-Dichlorobenzene	lb/hr	<1.36E-04	<1.45E-04	<1.38E-04	<1.40E-04
1,3-Dichlorobenzene	lb/hr	<1.12E-04	<1.19E-04	<1.14E-04	<1.15E-04
1,4-Dichlorobenzene	lb/hr	<1.34E-04	<1.43E-04	<1.36E-04	<1.38E-04
Dichlorodifluoromethane	lb/hr	**<2.61E-04**	**<2.71E-04**	**<2.58E-04**	<2.63E-04
1,1-Dichloroethane	lb/hr	<5.76E-05	<6.15E-05	<5.84E-05	<5.92E-05
1,2-Dichloroethane	lb/hr	**<5.99E-05**	**<7.87E-05**	**<1.11E-04**	<8.31E-05
1,1-Dichloroethene	lb/hr	<8.21E-05	<8.79E-05	<8.35E-05	<8.45E-05
cis-1,2-Dichloroethene	lb/hr	<6.03E-05	<6.43E-05	<6.12E-05	<6.20E-05
trans-1,2-Dichloroethene	lb/hr	<6.60E-05	<7.04E-05	<6.70E-05	<6.78E-05
1,2-Dichloropropane	lb/hr	<7.32E-05	<7.80E-05	<7.43E-05	<7.52E-05
1,3-Dichloropropane	lb/hr	<4.53E-05	<4.84E-05	<4.60E-05	<4.66E-05
2,2-Dichloropropane	lb/hr	<5.34E-05	<5.71E-05	<5.43E-05	<5.50E-05
1,1-Dichloropropene	lb/hr	<5.08E-05	<5.43E-05	<5.16E-05	<5.22E-05
cis-1,3-Dichloropropene	lb/hr	<9.73E-05	<5.08E-05	<4.83E-05	<6.55E-05
trans-1,3-Dichloropropene	lb/hr	<7.02E-05	<7.52E-05	<7.14E-05	<7.23E-05
Ethylbenzene	lb/hr	<1.22E-04	<1.30E-04	<1.24E-04	<1.25E-04
Hexachlorobutadiene	lb/hr	<2.66E-04	<2.83E-04	<2.70E-04	<2.73E-04
2-Hexanone	lb/hr	<5.35E-04	<5.71E-04	<5.43E-04	<5.50E-04
Isopropylbenzene	lb/hr	<1.48E-04	<1.57E-04	<1.50E-04	<1.52E-04
4-Isopropyltoluene	lb/hr	<1.60E-04	<1.71E-04	<1.63E-04	<1.64E-04
Methylene Chloride	lb/hr	**<2.04E-03**	**<2.08E-03**	**<1.75E-03**	<1.96E-03
4-Methyl-2-pentanone (MIBK)	lb/hr	<6.34E-04	<6.77E-04	<6.44E-04	<6.52E-04
N-Propylbenzene	lb/hr	<3.30E-04	<1.57E-04	<1.50E-04	<2.12E-04
Styrene	lb/hr	**<5.16E-05**	**<6.66E-05**	**<5.81E-05**	<5.88E-05
1,1,2-Tetrachloroethane	lb/hr	<4.09E-05	<4.36E-05	<4.15E-05	<4.20E-05
1,1,2,2-Tetrachloroethane	lb/hr	<1.88E-04	<2.01E-04	<1.91E-04	<1.94E-04
Tetrachloroethene	lb/hr	**<1.31E-04**	**<1.49E-04**	**<3.51E-04**	<2.10E-04
Toluene	lb/hr	**6.68E-04**	**<7.01E-04**	**<9.35E-04**	<7.68E-04
1,2,3-Trichlorobenzene	lb/hr	<3.47E-04	<3.70E-04	<3.53E-04	<3.56E-04
1,2,4-Trichlorobenzene	lb/hr	<3.08E-04	<3.28E-04	<3.13E-04	<3.17E-04
1,1,1-Trichloroethane	lb/hr	<9.12E-05	<9.73E-05	<9.25E-05	<9.37E-05
1,1,2-Trichloroethane	lb/hr	<1.21E-04	<1.29E-04	<1.23E-04	<1.24E-04
Trichloroethene	lb/hr	**<9.47E-05**	**<1.16E-04**	**<1.04E-04**	<1.05E-04
Trichlorofluoromethane	lb/hr	**<1.62E-04**	**<1.73E-04**	**<1.60E-04**	<1.65E-04
1,2,3-Trichloropropane	lb/hr	<2.00E-04	<2.13E-04	<2.03E-04	<2.05E-04
1,2,4-Trimethylbenzene	lb/hr	<1.19E-04	<1.27E-04	<1.21E-04	<1.23E-04
1,3,5-Trimethylbenzene	lb/hr	<4.95E-05	<5.29E-05	<5.03E-05	<5.09E-05
Vinyl chloride	lb/hr	**<1.42E-04**	**<1.69E-04**	**<1.72E-04**	<1.61E-04
o-Xylene	lb/hr	<1.18E-04	<1.25E-04	<1.19E-04	<1.21E-04
m,p-Xylene	lb/hr	**<1.27E-04**	**<1.30E-04**	**<1.17E-04**	<1.25E-04

Emissions Analyte		Run 1	Run 2	Run 3	Average
Acetone	lb/Mlb steam	**<3.95E-05**	**<4.34E-05**	**<4.28E-05**	<4.19E-05
Benzene	lb/Mlb steam	**<3.49E-05**	**<7.73E-05**	**<5.93E-05**	<5.72E-05
Bromobenzene	lb/Mlb steam	<5.86E-07	<6.36E-07	<5.97E-07	<6.06E-07
Bromochloromethane	lb/Mlb steam	<1.95E-06	<2.11E-06	<1.99E-06	<2.02E-06
Bromodichloromethane	lb/Mlb steam	**<4.15E-06**	**<4.44E-06**	**<4.04E-06**	<4.21E-06
Bromoform	lb/Mlb steam	<8.37E-07	<9.13E-07	<8.54E-07	<8.68E-07
Bromomethane	lb/Mlb steam	**<1.29E-05**	**<1.33E-05**	**<9.21E-06**	<1.18E-05
2-Butanone (MEK)	lb/Mlb steam	<1.53E-05	<1.66E-05	<1.56E-05	<1.58E-05
n-Butylbenzene	lb/Mlb steam	<3.04E-06	<3.29E-06	<3.10E-06	<3.14E-06
sec-Butylbenzene	lb/Mlb steam	<2.55E-06	<2.76E-06	<2.60E-06	<2.63E-06
tert-Butylbenzene	lb/Mlb steam	<1.33E-06	<1.44E-06	<1.36E-06	<1.38E-06
Carbon disulfide	lb/Mlb steam	**<7.09E-06**	**<1.29E-05**	**<1.01E-05**	<1.00E-05
Carbon tetrachloride	lb/Mlb steam	**<5.94E-06**	**<6.43E-06**	**<6.21E-06**	<6.19E-06
Chlorobenzene	lb/Mlb steam	**<1.32E-06**	**<1.48E-06**	**<1.36E-06**	<1.39E-06
Chlorodibromomethane	lb/Mlb steam	**<1.72E-06**	**<1.80E-06**	**<1.66E-06**	<1.73E-06
Chloroethane	lb/Mlb steam	<2.98E-06	<3.23E-06	<3.04E-06	<3.08E-06
Chloroform	lb/Mlb steam	**<9.91E-06**	**<1.13E-05**	**<7.26E-06**	<9.50E-06
Chloromethane	lb/Mlb steam	**<6.94E-06**	**<1.44E-05**	**<1.23E-05**	<1.12E-05
2-Chlorotoluene	lb/Mlb steam	<9.79E-07	<1.06E-06	<1.00E-06	<1.01E-06
4-Chlorotoluene	lb/Mlb steam	<1.23E-06	<1.33E-06	<1.25E-06	<1.27E-06
1,2-Dibromo-3-Chloropropane	lb/Mlb steam	<2.77E-06	<3.01E-06	<2.83E-06	<2.87E-06
1,2-Dibromoethane (EDB)	lb/Mlb steam	<1.79E-06	<1.95E-06	<1.83E-06	<1.85E-06
Dibromomethane	lb/Mlb steam	<1.19E-06	<1.29E-06	<1.21E-06	<1.23E-06
1,2-Dichlorobenzene	lb/Mlb steam	<2.00E-06	<2.17E-06	<2.04E-06	<2.07E-06
1,3-Dichlorobenzene	lb/Mlb steam	<1.64E-06	<1.78E-06	<1.68E-06	<1.70E-06
1,4-Dichlorobenzene	lb/Mlb steam	<1.97E-06	<2.14E-06	<2.01E-06	<2.04E-06
Dichlorodifluoromethane	lb/Mlb steam	**<3.83E-06**	**<4.05E-06**	**<3.80E-06**	<3.89E-06
1,1-Dichloroethane	lb/Mlb steam	<8.46E-07	<9.19E-07	<8.62E-07	<8.76E-07
1,2-Dichloroethane	lb/Mlb steam	**<8.80E-07**	**<1.18E-06**	**<1.63E-06**	<1.23E-06
1,1-Dichloroethene	lb/Mlb steam	<1.21E-06	<1.31E-06	<1.23E-06	<1.25E-06
cis-1,2-Dichloroethene	lb/Mlb steam	<8.86E-07	<9.62E-07	<9.03E-07	<9.17E-07
trans-1,2-Dichloroethene	lb/Mlb steam	<9.70E-07	<1.05E-06	<9.89E-07	<1.00E-06
1,2-Dichloropropane	lb/Mlb steam	<1.07E-06	<1.17E-06	<1.10E-06	<1.11E-06
1,3-Dichloropropane	lb/Mlb steam	<6.66E-07	<7.24E-07	<6.79E-07	<6.89E-07
2,2-Dichloropropane	lb/Mlb steam	<7.85E-07	<8.53E-07	<8.01E-07	<8.13E-07
1,1-Dichloropropene	lb/Mlb steam	<7.46E-07	<8.11E-07	<7.62E-07	<7.73E-07
cis-1,3-Dichloropropene	lb/Mlb steam	<1.43E-06	<7.59E-07	<7.13E-07	<9.67E-07
trans-1,3-Dichloropropene	lb/Mlb steam	<1.03E-06	<1.12E-06	<1.05E-06	<1.07E-06
Ethylbenzene	lb/Mlb steam	<1.79E-06	<1.95E-06	<1.83E-06	<1.86E-06
Hexachlorobutadiene	lb/Mlb steam	<3.91E-06	<4.23E-06	<3.99E-06	<4.04E-06
2-Hexanone	lb/Mlb steam	<7.85E-06	<8.53E-06	<8.01E-06	<8.13E-06
Isopropylbenzene	lb/Mlb steam	<2.17E-06	<2.35E-06	<2.21E-06	<2.24E-06
4-Isopropyltoluene	lb/Mlb steam	<2.35E-06	<2.55E-06	<2.40E-06	<2.43E-06
Methylene Chloride	lb/Mlb steam	**<2.99E-05**	**<3.10E-05**	**<2.59E-05**	<2.89E-05
4-Methyl-2-pentanone (MIBK)	lb/Mlb steam	<9.32E-06	<1.01E-05	<9.51E-06	<9.64E-06
N-Propylbenzene	lb/Mlb steam	<4.84E-06	<2.35E-06	<2.21E-06	<3.13E-06
Styrene	lb/Mlb steam	**<7.58E-07**	**<9.95E-07**	**<8.57E-07**	<8.70E-07
1,1,2-Tetrachloroethane	lb/Mlb steam	<6.00E-07	<6.52E-07	<6.11E-07	<6.21E-07
1,1,2,2-Tetrachloroethane	lb/Mlb steam	<2.77E-06	<3.00E-06	<2.82E-06	<2.86E-06
Tetrachloroethene	lb/Mlb steam	**<1.92E-06**	**<2.22E-06**	**<5.18E-06**	<3.11E-06
Toluene	lb/Mlb steam	**9.82E-06**	**<1.05E-05**	**<1.38E-05**	<1.14E-05
1,2,3-Trichlorobenzene	lb/Mlb steam	<5.09E-06	<5.53E-06	<5.20E-06	<5.27E-06
1,2,4-Trichlorobenzene	lb/Mlb steam	<4.53E-06	<4.91E-06	<4.62E-06	<4.69E-06
1,1,1-Trichloroethane	lb/Mlb steam	<1.34E-06	<1.45E-06	<1.36E-06	<1.39E-06
1,1,2-Trichloroethane	lb/Mlb steam	<1.77E-06	<1.92E-06	<1.81E-06	<1.83E-06
Trichloroethene	lb/Mlb steam	**<1.39E-06**	**<1.74E-06**	**<1.54E-06**	<1.55E-06
Trichlorofluoromethane	lb/Mlb steam	**<2.38E-06**	**<2.59E-06**	**<2.35E-06**	<2.44E-06
1,2,3-Trichloropropane	lb/Mlb steam	<2.93E-06	<3.19E-06	<2.99E-06	<3.04E-06
1,2,4-Trimethylbenzene	lb/Mlb steam	<1.75E-06	<1.90E-06	<1.79E-06	<1.81E-06
1,3,5-Trimethylbenzene	lb/Mlb steam	<7.26E-07	<7.90E-07	<7.42E-07	<7.53E-07
Vinyl chloride	lb/Mlb steam	**<2.08E-06**	**<2.53E-06**	**<2.54E-06**	<2.38E-06
o-Xylene	lb/Mlb steam	<1.73E-06	<1.87E-06	<1.76E-06	<1.79E-06
m,p-Xylene	lb/Mlb steam	**<1.87E-06**	**<1.94E-06**	**<1.72E-06**	<1.84E-06

UNIT 2
VOST VOLUMES

Test No.	Run 1	Run 1	Run 1	Run 2	Run 2	Run 2	Run 3	Run 3	Run 3	Average
Date	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	--
Times	0937-1017	1030-1110	1129-1209	1245-1325	1337-1417	1434-1514	1547-1627	1635-1715	1726-1806	--
VOST Run	Run 1A	Run 1B	Run 1C	Run 2A	Run 2B	Run 2C	Run 3A	Run 3B	Run 3C	--
Meter Box	LFCB2	LFCB2	LFCB2	LFCB2	LFCB2	LFCB2	LFCB2	LFCB2	LFCB2	--
Y (meter calibration factor), dimensionless	1.0265	1.0265	1.0265	1.0265	1.0265	1.0265	1.0265	1.0265	1.0265	--
P_{bar} (barometric pressure), in Hg	29.70	29.70	29.70	29.70	29.70	29.70	29.70	29.70	29.70	29.70
V_m (meter box volume), liters	20.012	20.004	20.009	20.032	20.080	20.019	20.028	20.049	20.019	20.03
V_m (meter box volume), acf	0.707	0.706	0.707	0.707	0.709	0.707	0.707	0.708	0.707	0.707
T_m (meter temperature), °F	52.44	59.33	63.00	71.25	66.50	61.50	62.00	62.25	66.63	62.77
ΔH (meter pressure), in. H_2O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{m(std)}$ (standard sample volume), dscf	0.7420	0.7318	0.7269	0.7164	0.7246	0.7293	0.7290	0.7294	0.7222	0.7280
$V_{m(std)}$ (standard sample volume), dscm	0.02101	0.02072	0.02058	0.02029	0.02052	0.02065	0.02064	0.02065	0.02045	0.02061
$\Sigma V_{m(std)}$, dscm	--	--	0.06232	--	--	0.06146	--	--	0.06175	0.06184

Unit 2
VOST

Vost No.	Samples - Run 1 (Raw) Analyte	TRAP	Run 1A		Run 1B		Run 1C		Condensate	SUM
			A/B	C	A/B	C	A/B	C		
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	0.293	<1.2170
2	Benzene	µg	0.190	<0.00570	0.500	0.00598	0.360	0.00628	<0.00790	<1.0759
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00666	<0.0181
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0114	<0.0600
5	Bromodichloromethane	µg	0.0435	<0.00170	0.0359	<0.00170	0.0336	<0.00170	<0.0100	<0.1281
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0114	<0.0258
7	Bromomethane	µg	0.0742	<0.0110	0.0791	0.0180	0.125	0.0410	<0.0499	<0.3982
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0822	<0.4722
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0156	<0.0936
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0125	<0.0785
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0104	<0.0410
12	Carbon disulfide	µg	0.0626	<0.0110	0.0555	<0.0110	0.0562	<0.0110	<0.0114	<0.2187
13	Carbon tetrachloride	µg	0.0547	<0.00240	0.0464	<0.00240	0.0444	0.00275	<0.0302	<0.1833
14	Chlorobenzene	µg	0.0105	<0.00100	0.00929	<0.00100	0.0122	<0.00100	<0.00572	<0.0407
15	Chlorodibromomethane	µg	0.0111	<0.00370	0.00858	<0.00370	0.00871	<0.00370	<0.0135	<0.0530
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0312	<0.0918
17	Chloroform	µg	0.101	<0.00810	0.0883	<0.00810	0.0821	<0.00810	<0.00978	<0.3055
18	Chloromethane	µg	<0.0225	0.0592	<0.0225	0.0394	<0.0225	0.104	<0.0302	<0.3003
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0104	<0.0302
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0114	<0.0378
21	1,2-Dibromo-3-Chloropropane	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0218	<0.0854
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0114	<0.0552
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0114	<0.0366
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00707	<0.0617
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00686	<0.0507
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00676	<0.0608
27	Dichlorodifluoromethane	µg	<0.00620	0.0191	<0.00620	0.0199	<0.00620	0.0198	<0.0406	<0.1180
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00988	<0.0261
29	1,2-Dichloroethane	µg	0.00376	<0.00170	0.00447	<0.00170	0.00383	<0.00170	<0.00998	<0.0271
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0114	<0.0372
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00811	<0.0273
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00770	<0.0299
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00853	<0.0331
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00853	<0.0205
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0104	<0.0242
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.002	<0.00210	<0.00210	<0.00210	<0.0104	<0.0230
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.003	<0.0250	<0.00250	<0.00250	<0.00655	<0.0441
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.003	<0.00340	<0.00340	<0.00340	<0.0114	<0.0318
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.008	<0.00780	<0.00780	<0.00780	<0.00853	<0.0553
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.018	<0.0180	<0.0180	<0.0180	<0.0125	<0.1205
41	2-Hexanone	µg	<0.0265	<0.0265	<0.027	<0.0265	<0.0265	<0.0265	<0.0832	<0.2422
42	Isopropylbenzene	µg	<0.00950	<0.0095	<0.010	<0.00950	<0.00950	<0.00950	<0.00988	<0.0669
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.010	<0.0100	<0.0100	<0.0100	<0.0125	<0.0725
44	Methylene Chloride	µg	0.127	<0.0860	0.248	<0.0860	0.207	<0.0860	<0.0832	<0.9232
45	4-Methyl-2-pentanone (MIBK)	µg	<0.0361	<0.0361	<0.036	<0.0361	<0.0361	<0.0361	<0.0707	<0.2873
46	N-Propylbenzene	µg	<0.00920	<0.0920	<0.009	<0.00920	<0.00920	<0.00920	<0.0114	<0.1494
47	Styrene	µg	<0.00210	<0.00210	<0.002	<0.00210	0.00247	<0.00210	<0.0104	<0.0234
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.002	<0.00180	<0.00180	<0.00180	<0.00770	<0.0185
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.010	<0.0104	<0.0104	<0.01040	<0.0229	<0.0853
50	Tetrachloroethene	µg	0.0144	<0.00100	0.0143	<0.00100	0.0177	<0.00100	<0.00988	<0.0593
51	Toluene	µg	0.0624	0.0370	0.0631	0.0313	0.0586	0.0271	0.0232	<0.3027
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.022	<0.0222	<0.0222	<0.0222	<0.0239	<0.1571
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.021	<0.0205	<0.0205	<0.0205	<0.0166	<0.1396
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.005	<0.00480	<0.00480	<0.00480	<0.0125	<0.0413
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.008	<0.00760	<0.00760	<0.00760	<0.00905	<0.0547
56	Trichloroethene	µg	0.00777	<0.00310	0.00825	<0.00310	0.00850	<0.00310	<0.00905	<0.0429
57	Trichlorofluoromethane	µg	0.00939	<0.00530	0.00847	<0.00530	0.00754	<0.00530	<0.0322	<0.0735
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.010	<0.0104	<0.0104	<0.0104	<0.0281	<0.0905
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.007	<0.00710	<0.00710	<0.00710	<0.0114	<0.0540
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.002	<0.00200	<0.00200	<0.00200	<0.0104	<0.0224
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.006	0.00824	<0.00640	<0.00640	<0.0239	<0.0641
62	o-Xylene	µg	<0.00740	<0.00740	<0.007	<0.00740	<0.00740	<0.00740	<0.00884	<0.0532
63	m,p-Xylene	µg	0.0100	<0.00700	0.00867	<0.00700	0.00870	<0.00700	<0.00936	<0.0577

Vost No.	Samples - Run 1 (Blnk Cor) Analyte	TRAP	Run 1A A/B	Run 1A C	Run 1B A/B	Run 1B C	Run 1C A/B	Run 1C C	Condensate	SUM
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	**0.293**	<1.2170
2	Benzene	µg	**0.190**	<0.00570	**0.500**	**0.00598**	**0.360**	<0.00628	<0.00790	<1.0759
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00666	<0.0181
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0114	<0.0600
5	Bromodichloromethane	µg	**0.0435**	<0.00170	**0.0359**	<0.00170	**0.0336**	<0.00170	<0.00998	<0.1281
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0114	<0.0258
7	Bromomethane	µg	**0.0742**	<0.0110	**0.0791**	**0.0180**	**0.125**	<0.0410	<0.0499	<0.3982
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0822	<0.4722
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0156	<0.0936
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0125	<0.0785
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0104	<0.0410
12	Carbon disulfide	µg	**0.0626**	<0.0110	**0.0555**	<0.0110	**0.0562**	<0.0110	<0.0114	<0.2187
13	Carbon tetrachloride	µg	**0.0547**	<0.00240	**0.0464**	<0.00240	**0.0444**	0.00275	<0.0302	<0.1833
14	Chlorobenzene	µg	**0.0105**	<0.00100	**0.00929**	<0.00100	**0.0122**	<0.00100	<0.00572	<0.0407
15	Chlorodibromomethane	µg	**0.0111**	<0.00370	**0.00858**	<0.00370	**0.00871**	<0.00370	<0.0135	<0.0530
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0312	<0.0918
17	Chloroform	µg	**0.101**	<0.00810	**0.0883**	<0.00810	**0.0821**	<0.00810	<0.00978	<0.3055
18	Chloromethane	µg	<0.0225	**0.00970**	<0.0225	**0.0394**	<0.0225	**0.0545**	<0.0302	<0.2013
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0104	<0.0302
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0114	<0.0378
21	1,2-Dibromo-3-Chloropropane	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0218	<0.0854
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0114	<0.0552
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0114	<0.0366
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00707	<0.0617
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00686	<0.0507
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00676	<0.0608
27	Dichlorodifluoromethane	µg	<0.00620	**0.0191**	<0.00620	**0.0199**	<0.00620	**0.0198**	<0.0406	<0.1180
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00988	<0.0261
29	1,2-Dichloroethane	µg	**0.00376**	<0.00170	**0.00447**	<0.00170	**0.00383**	<0.00170	<0.00998	<0.0271
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0114	<0.0372
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00811	<0.0273
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00770	<0.0299
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00853	<0.0331
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00853	<0.0205
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0104	<0.0242
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0104	<0.0230
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.02500	<0.00250	<0.00250	<0.00655	<0.0441
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0114	<0.0318
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00853	<0.0553
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0125	<0.1205
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0832	<0.2422
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00988	<0.0669
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0125	<0.0725
44	Methylene Chloride	µg	**0.127**	<0.0860	**0.248**	<0.0860	**0.207**	<0.0860	<0.0832	<0.9232
45	4-Methyl-2-pentanone (MIBK)	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0707	<0.2873
46	N-Propylbenzene	µg	<0.00920	<0.0920	<0.00920	<0.0092	<0.00920	<0.0092	<0.0114	<0.1494
47	Styrene	µg	<0.00210	<0.00210	<0.00210	<0.00210	**0.00247**	<0.00210	<0.0104	<0.0234
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00770	<0.0185
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0229	<0.0853
50	Tetrachloroethene	µg	**0.0144**	<0.00100	**0.0143**	<0.00100	**0.0177**	<0.00100	<0.00988	<0.0593
51	Toluene	µg	**0.0624**	**0.0370**	**0.0631**	**0.0313**	**0.0586**	**0.0271**	**0.0232**	**0.3027**
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0239	<0.1571
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0166	<0.1396
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0125	<0.0413
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00905	<0.0547
56	Trichloroethene	µg	**0.00777**	<0.00310	**0.00825**	<0.00310	**0.00850**	<0.00310	<0.00905	<0.0429
57	Trichlorofluoromethane	µg	**0.00939**	<0.00530	**0.00847**	<0.00530	**0.00754**	<0.00530	<0.0322	<0.0735
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0281	<0.0905
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0114	<0.0540
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0104	<0.0224
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	**0.00824**	<0.00640	<0.00640	<0.0239	<0.0641
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00884	<0.0532
63	m,p-Xylene	µg	**0.0100**	<0.00700	**0.0087**	<0.00700	**0.0087**	<0.00700	<0.00936	<0.0577

Vost No.	Blanks & MDL - Run 1 Analyte	TRAP	FIELD BLANK A/B	FIELD BLANK C	MDL Condensate	MDL A/B	MDL C	SUM	MDL % of Detected
1	Acetone	µg	<0.154	<0.154	0.135	0.154	0.154	0.443	36.4%
2	Benzene	µg	<0.00570	<0.00570	0.0079	0.00570	0.00570	0.0193	1.8%
3	Bromobenzene	µg	<0.00190	<0.00190	0.00666	0.00190	0.00190	0.01046	57.9%
4	Bromochloromethane	µg	<0.00810	<0.00810	0.0114	0.00810	0.00810	0.0276	46.0%
5	Bromodichloromethane	µg	<0.00170	<0.00170	0.00998	0.00170	0.00170	0.01338	10.4%
6	Bromoform	µg	<0.00240	<0.00240	0.0114	0.00240	0.00240	0.0162	62.8%
7	Bromomethane	µg	<0.0110	<0.0110	0.0499	0.0110	0.0110	0.0719	18.1%
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	0.0822	0.0650	0.0650	0.2122	44.9%
9	n-Butylbenzene	µg	<0.0130	<0.0130	0.0156	0.0130	0.0130	0.0416	44.4%
10	sec-Butylbenzene	µg	<0.0110	<0.0110	0.0125	0.0110	0.0110	0.0345	43.9%
11	tert-Butylbenzene	µg	<0.00510	<0.00510	0.0104	0.00510	0.00510	0.0206	50.2%
12	Carbon disulfide	µg	<0.0110	<0.0110	0.0114	0.0110	0.0110	0.0334	15.3%
13	Carbon tetrachloride	µg	<0.00240	<0.00240	0.0302	0.00240	0.00240	0.035	19.1%
14	Chlorobenzene	µg	<0.00100	<0.00100	0.00572	0.00100	0.00100	0.00772	19.0%
15	Chlorodibromomethane	µg	<0.00370	<0.00370	0.0135	0.00370	0.00370	0.0209	39.4%
16	Chloroethane	µg	<0.0101	<0.0101	0.0312	0.0101	0.0101	0.0514	56.0%
17	Chloroform	µg	<0.00810	<0.00810	0.00978	0.00810	0.00810	0.02598	8.5%
18	Chloromethane	µg	<0.0225	0.0495	0.0302	0.0225	0.0225	0.0752	37.4%
19	2-Chlorotoluene	µg	<0.00330	<0.00330	0.0104	0.00330	0.00330	0.017	56.3%
20	4-Chlorotoluene	µg	<0.00440	<0.00440	0.0114	0.00440	0.00440	0.0202	53.4%
21	1,2-Dibromo-3-Chloropropane	µg	<0.0106	<0.0106	0.0218	0.0106	0.0106	0.043	50.4%
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	0.0114	0.00730	0.00730	0.026	47.1%
23	Dibromomethane	µg	<0.00420	<0.00420	0.0114	0.00420	0.00420	0.0198	54.1%
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	0.00707	0.00910	0.00910	0.02527	41.0%
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	0.00686	0.00730	0.00730	0.02146	42.4%
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	0.00676	0.00900	0.00900	0.02476	40.8%
27	Dichlorodifluoromethane	µg	<0.00620	<0.00620	0.0406	0.00620	0.00620	0.053	44.9%
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	0.00988	0.00270	0.00270	0.01528	58.6%
29	1,2-Dichloroethane	µg	<0.00170	<0.00170	0.00998	0.00170	0.00170	0.01338	49.3%
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	0.0114	0.00430	0.00430	0.02	53.8%
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	0.00811	0.00320	0.00320	0.01451	53.1%
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	0.0077	0.00370	0.00370	0.0151	50.5%
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	0.00853	0.00410	0.00410	0.01673	50.5%
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	0.00853	0.00200	0.00200	0.01253	61.0%
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	0.0104	0.00230	0.00230	0.015	62.0%
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	0.0104	0.00210	0.00210	0.0146	63.5%
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	0.00655	0.00250	0.00250	0.01155	26.2%
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	0.0114	0.00340	0.00340	0.0182	57.2%
39	Ethylbenzene	µg	<0.00780	<0.00780	0.00853	0.00780	0.00780	0.02413	43.6%
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	0.0125	0.0180	0.0180	0.0485	40.2%
41	2-Hexanone	µg	<0.0265	<0.0265	0.0832	0.0265	0.0265	0.1362	56.2%
42	Isopropylbenzene	µg	<0.00950	<0.00950	0.00988	0.00950	0.00950	0.02888	43.2%
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	0.0125	0.0100	0.0100	0.0325	44.8%
44	Methylene Chloride	µg	<0.0860	<0.0860	0.0832	0.0860	0.0860	0.2552	27.6%
45	4-Methyl-2-pentanone (MIBK)	µg	<0.0361	<0.0361	0.0707	0.0361	0.0361	0.1429	49.7%
46	N-Propylbenzene	µg	<0.00920	<0.00920	0.0114	0.00920	0.00920	0.0298	19.9%
47	Styrene	µg	<0.00210	<0.00210	0.0104	0.00210	0.00210	0.0146	62.5%
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	0.0077	0.00180	0.00180	0.0113	61.1%
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	0.0229	0.0104	0.0104	0.0437	51.2%
50	Tetrachloroethene	µg	<0.00100	<0.00100	0.00988	0.00100	0.00100	0.01188	20.0%
51	Toluene	µg	<0.0147	<0.0147	0.0166	0.0147	0.0147	0.046	15.2%
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	0.0239	0.0222	0.0222	0.0683	43.5%
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	0.0166	0.0205	0.0205	0.0576	41.3%
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	0.0125	0.00480	0.00480	0.0221	53.5%
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	0.00905	0.00760	0.00760	0.02425	44.4%
56	Trichloroethene	µg	<0.00310	<0.00310	0.00905	0.00310	0.00310	0.01525	35.6%
57	Trichlorofluoromethane	µg	<0.00530	<0.00530	0.0322	0.00530	0.00530	0.0428	58.2%
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	0.0281	0.0104	0.0104	0.0489	54.0%
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	0.0114	0.00710	0.00710	0.0256	47.4%
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	0.0104	0.00200	0.00200	0.0144	64.3%
61	Vinyl chloride	µg	<0.00640	<0.00640	0.0239	0.00640	0.00640	0.0367	57.2%
62	o-Xylene	µg	<0.00740	<0.00740	0.00884	0.00740	0.00740	0.02364	44.4%
63	m,p-Xylene	µg	<0.00700	<0.00700	0.00936	0.00700	0.00700	0.02336	40.5%

Vost No.	Totals - Run 1 Analyte	TRAP	Run 1A A/B	Run 1A C	Run 1B A/B	Run 1B C	Run 1C A/B	Run 1C C	Condensate
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	**0.293**
2	Benzene	µg	**0.190**	<0.00570	**0.500**	**0.00598**	**0.360**	<0.00628	<0.00790
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00666
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0114
5	Bromodichloromethane	µg	**0.0435**	<0.00170	**0.0359**	<0.00170	**0.0336**	<0.00170	<0.00998
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0114
7	Bromomethane	µg	**0.0742**	<0.0110	**0.0791**	**0.0180**	**0.125**	<0.0410	<0.0499
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0822
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0156
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0125
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0104
12	Carbon disulfide	µg	**0.0626**	<0.0110	**0.0555**	<0.0110	**0.0562**	<0.0110	<0.0114
13	Carbon tetrachloride	µg	**0.0547**	<0.00240	**0.0464**	<0.00240	**0.0444**	0.00275	<0.0302
14	Chlorobenzene	µg	**0.0105**	<0.00100	**0.00929**	<0.00100	**0.0122**	<0.00100	<0.00572
15	Chlorodibromomethane	µg	**0.0111**	<0.00370	**0.00858**	<0.00370	**0.00871**	<0.00370	<0.0135
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0312
17	Chloroform	µg	**0.101**	<0.00810	**0.0883**	<0.00810	**0.0821**	<0.00810	<0.00978
18	Chloromethane	µg	<0.0225	<0.0225	<0.0225	**0.0394**	<0.0225	**0.0545**	<0.0302
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0104
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0114
21	1,2-Dibromo-3-Chloropropane	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0218
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0114
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0114
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00707
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00686
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00676
27	Dichlorodifluoromethane	µg	<0.00620	**0.0191**	<0.00620	**0.0199**	<0.00620	**0.0198**	<0.0406
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00988
29	1,2-Dichloroethane	µg	**0.00376**	<0.00170	**0.00447**	<0.00170	**0.00383**	<0.00170	<0.00998
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0114
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00811
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00770
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00853
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00853
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0104
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0104
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.02500	<0.00250	<0.00250	<0.00655
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0114
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00853
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0125
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0832
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00988
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0125
44	Methylene Chloride	µg	**0.127**	<0.0860	**0.248**	<0.0860	**0.207**	<0.0860	<0.0832
45	4-Methyl-2-pentanone (MIBK)	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0707
46	N-Propylbenzene	µg	<0.00920	<0.0920	<0.00920	<0.0092	<0.00920	<0.0092	<0.0114
47	Styrene	µg	<0.00210	<0.00210	<0.00210	<0.00210	**0.00247**	<0.00210	<0.0104
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00770
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0229
50	Tetrachloroethene	µg	**0.0144**	<0.00100	**0.0143**	<0.00100	**0.0177**	<0.00100	<0.00988
51	Toluene	µg	**0.0624**	**0.0370**	**0.0631**	**0.0313**	**0.0586**	**0.0271**	**0.0232**
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0239
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0166
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0125
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00905
56	Trichloroethene	µg	**0.00777**	<0.00310	**0.00825**	<0.00310	**0.00850**	<0.00310	<0.00905
57	Trichlorofluoromethane	µg	**0.00939**	<0.00530	**0.00847**	<0.00530	**0.00754**	<0.00530	<0.0322
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0281
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0114
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0104
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	**0.00824**	<0.00640	<0.00640	<0.0239
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00884
63	m,p-Xylene	µg	**0.0100**	<0.00700	**0.0087**	<0.00700	**0.0087**	<0.00700	<0.00936

Vost No.	Emissions - Run 1 Analyte	*SUM µg	Vstd	0.0623 µg/m3	Qsd	36,736.8 lb/hr	Mlb/hr steam	68.1 lb/Mlb steam
1	Acetone	**<1.217**		**<19.529**		**<2.69E-03**		**<3.95E-05**
2	Benzene	**<1.076**		**<17.265**		**<2.38E-03**		**<3.49E-05**
3	Bromobenzene	<0.018		<0.290		<3.99E-05		<5.86E-07
4	Bromochloromethane	<0.060		<0.963		<1.32E-04		<1.95E-06
5	Bromodichloromethane	**<0.128**		**<2.055**		**<2.83E-04**		**<4.15E-06**
6	Bromoform	<0.026		<0.414		<5.70E-05		<8.37E-07
7	Bromomethane	**<0.398**		**<6.390**		**<8.79E-04**		**<1.29E-05**
8	2-Butanone (MEK)	<0.472		<7.577		<1.04E-03		<1.53E-05
9	n-Butylbenzene	<0.094		<1.502		<2.07E-04		<3.04E-06
10	sec-Butylbenzene	<0.079		<1.260		<1.73E-04		<2.55E-06
11	tert-Butylbenzene	<0.041		<0.658		<9.05E-05		<1.33E-06
12	Carbon disulfide	**<0.219**		**<3.510**		**<4.83E-04**		**<7.09E-06**
13	Carbon tetrachloride	**<0.183**		**<2.941**		**<4.05E-04**		**<5.94E-06**
14	Chlorobenzene	**<0.041**		**<0.653**		**<8.99E-05**		**<1.32E-06**
15	Chlorodibromomethane	**<0.053**		**<0.850**		**<1.17E-04**		**<1.72E-06**
16	Chloroethane	<0.092		<1.473		<2.03E-04		<2.98E-06
17	Chloroform	**<0.305**		**<4.902**		**<6.75E-04**		**<9.91E-06**
18	Chloromethane	**<0.214**		**<3.436**		**<4.73E-04**		**<6.94E-06**
19	2-Chlorotoluene	<0.030		<0.485		<6.67E-05		<9.79E-07
20	4-Chlorotoluene	<0.038		<0.607		<8.35E-05		<1.23E-06
21	1,2-Dibromo-3-Chloropropane	<0.085		<1.370		<1.89E-04		<2.77E-06
22	1,2-Dibromoethane (EDB)	<0.055		<0.886		<1.22E-04		<1.79E-06
23	Dibromomethane	<0.037		<0.587		<8.08E-05		<1.19E-06
24	1,2-Dichlorobenzene	<0.062		<0.990		<1.36E-04		<2.00E-06
25	1,3-Dichlorobenzene	<0.051		<0.813		<1.12E-04		<1.64E-06
26	1,4-Dichlorobenzene	<0.061		<0.975		<1.34E-04		<1.97E-06
27	Dichlorodifluoromethane	**<0.118**		**<1.894**		**<2.61E-04**		**<3.83E-06**
28	1,1-Dichloroethane	<0.026		<0.419		<5.76E-05		<8.46E-07
29	1,2-Dichloroethane	**<0.027**		**<0.436**		**<5.99E-05**		**<8.80E-07**
30	1,1-Dichloroethene	<0.037		<0.597		<8.21E-05		<1.21E-06
31	cis-1,2-Dichloroethene	<0.027		<0.438		<6.03E-05		<8.86E-07
32	trans-1,2-Dichloroethene	<0.030		<0.480		<6.60E-05		<9.70E-07
33	1,2-Dichloropropane	<0.033		<0.532		<7.32E-05		<1.07E-06
34	1,3-Dichloropropane	<0.021		<0.329		<4.53E-05		<6.66E-07
35	2,2-Dichloropropane	<0.024		<0.388		<5.34E-05		<7.85E-07
36	1,1-Dichloropropene	<0.023		<0.369		<5.08E-05		<7.46E-07
37	cis-1,3-Dichloropropene	<0.044		<0.707		<9.73E-05		<1.43E-06
38	trans-1,3-Dichloropropene	<0.032		<0.510		<7.02E-05		<1.03E-06
39	Ethylbenzene	<0.055		<0.888		<1.22E-04		<1.79E-06
40	Hexachlorobutadiene	<0.121		<1.934		<2.66E-04		<3.91E-06
41	2-Hexanone	<0.242		<3.887		<5.35E-04		<7.85E-06
42	Isopropylbenzene	<0.067		<1.073		<1.48E-04		<2.17E-06
43	4-Isopropyltoluene	<0.073		<1.163		<1.60E-04		<2.35E-06
44	Methylene Chloride	**<0.923**		**<14.815**		**<2.04E-03**		**<2.99E-05**
45	4-Methyl-2-pentanone (MIBK)	<0.287		<4.610		<6.34E-04		<9.32E-06
46	N-Propylbenzene	<0.149		<2.397		<3.30E-04		<4.84E-06
47	Styrene	**<0.023**		**<0.375**		**<5.16E-05**		**<7.58E-07**
48	1,1,2-Tetrachloroethane	<0.019		<0.297		<4.09E-05		<6.00E-07
49	1,1,2,2-Tetrachloroethane	<0.085		<1.369		<1.88E-04		<2.77E-06
50	Tetrachloroethene	**<0.059**		**<0.951**		**<1.31E-04**		**<1.92E-06**
51	Toluene	**0.303**		**4.857**		**6.68E-04**		**9.82E-06**
52	1,2,3-Trichlorobenzene	<0.157		<2.521		<3.47E-04		<5.09E-06
53	1,2,4-Trichlorobenzene	<0.140		<2.240		<3.08E-04		<4.53E-06
54	1,1,1-Trichloroethane	<0.041		<0.663		<9.12E-05		<1.34E-06
55	1,1,2-Trichloroethane	<0.055		<0.877		<1.21E-04		<1.77E-06
56	Trichloroethene	**<0.043**		**<0.688**		**<9.47E-05**		**<1.39E-06**
57	Trichlorofluoromethane	**<0.074**		**<1.179**		**<1.62E-04**		**<2.38E-06**
58	1,2,3-Trichloropropane	<0.091		<1.452		<2.00E-04		<2.93E-06
59	1,2,4-Trimethylbenzene	<0.054		<0.867		<1.19E-04		<1.75E-06
60	1,3,5-Trimethylbenzene	<0.022		<0.359		<4.95E-05		<7.26E-07
61	Vinyl chloride	**<0.064**		**<1.029**		**<1.42E-04**		**<2.08E-06**
62	o-Xylene	<0.053		<0.854		<1.18E-04		<1.73E-06
63	m,p-Xylene	**<0.058**		**<0.926**		**<1.27E-04**		**<1.87E-06**

Unit 2
VOST

Vost No.	Samples - Run 2 (Raw) Analyte	TRAP	Run 2A A/B	Run 2A C	Run 2B A/B	Run 2B C	Run 2C A/B	Run 2C C	Condensate	SUM
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	0.313	<1.2370
2	Benzene	µg	0.259	<0.00570	0.602	<0.00570	1.31	0.00975	<0.00798	<2.2001
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00672	<0.0181
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0116	<0.0602
5	Bromodichloromethane	µg	0.0381	<0.00170	0.0371	<0.00170	0.0360	<0.00170	<0.0101	<0.1264
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0116	<0.0260
7	Bromomethane	µg	0.126	0.0422	0.0568	0.0210	0.0624	0.0196	<0.0504	<0.3784
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0830	<0.4730
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0158	<0.0938
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0126	<0.0786
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0105	<0.0411
12	Carbon disulfide	µg	0.105	<0.0110	0.0965	<0.0110	0.120	<0.0110	<0.0116	<0.3661
13	Carbon tetrachloride	µg	0.0514	<0.00240	0.0450	0.00272	0.0487	<0.00240	<0.0305	<0.1831
14	Chlorobenzene	µg	0.0110	<0.00100	0.0122	<0.00100	0.0151	<0.00100	<0.00578	<0.0471
15	Chlorodibromomethane	µg	0.00853	<0.00370	0.00905	<0.00370	0.00897	<0.00370	<0.0137	<0.0514
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0315	<0.0921
17	Chloroform	µg	0.0997	<0.00810	0.0983	<0.00810	0.0907	<0.00810	<0.00987	<0.3229
18	Chloromethane	µg	<0.0225	0.147	<0.0225	0.103	<0.0225	0.0619	<0.0305	<0.4099
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0105	<0.0303
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0116	<0.0380
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0221	<0.0857
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0116	<0.0554
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0116	<0.0368
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00714	<0.0617
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00693	<0.0507
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00683	<0.0608
27	Dichlorodifluoromethane	µg	<0.00620	0.0202	<0.00620	0.0193	<0.00620	0.0161	<0.0410	<0.1152
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00998	<0.0262
29	1,2-Dichloroethane	µg	0.00398	<0.00170	0.00460	<0.00170	0.00971	<0.00170	<0.0101	<0.0335
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0116	<0.0374
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00819	<0.0274
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00777	<0.0300
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00861	<0.0332
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00861	<0.0206
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0105	<0.0243
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0105	<0.0231
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00662	<0.0216
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0116	<0.0320
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00861	<0.0554
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0126	<0.1206
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0840	<0.2430
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00998	<0.0670
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0126	<0.0726
44	Methylene Chloride	µg	0.157	0.0881	0.188	<0.0860	0.195	<0.0860	<0.0840	<0.8841
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0714	<0.2880
46	N-Propylbenzene	µg	<0.00920	<0.00920	<0.00920	<0.00920	<0.00920	<0.00920	<0.0116	<0.0668
47	Styrene	µg	<0.00210	<0.00210	0.00248	<0.00210	0.00695	<0.00210	<0.0105	<0.0283
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00777	<0.0186
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.01040	<0.0231	<0.0855
50	Tetrachloroethene	µg	0.0148	<0.00100	0.0154	<0.00100	0.0201	<0.00100	<0.00998	<0.0633
51	Toluene	µg	0.0606	0.0228	0.0585	0.0157	0.0957	0.0281	<0.0168	<0.2982
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0242	<0.1574
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0168	<0.1398
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0126	<0.0414
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00914	<0.0547
56	Trichloroethene	µg	0.00883	<0.00310	0.00977	<0.00310	0.01240	<0.00310	<0.00914	<0.0494
57	Trichlorofluoromethane	µg	0.00753	<0.00530	0.00912	<0.00530	0.00854	<0.00530	<0.0326	<0.0737
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0284	<0.0908
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0116	<0.0542
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0105	<0.0225
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	0.00655	0.00696	0.0151	<0.0242	<0.0720
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00893	<0.0533
63	m,p-Xylene	µg	0.00927	<0.00700	0.00752	<0.00700	0.00798	<0.00700	<0.00945	<0.0552

Vost	Samples - Run 2 (Blnk Cor)		Run 2A		Run 2B		Run 2C			
No.	Analyte	TRAP	A/B	C	A/B	C	A/B	C	Condensate	SUM
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	**0.313**	<1.2370
2	Benzene	µg	**0.259**	<0.00570	**0.602**	<0.00570	**1.31**	**0.00975**	<0.00798	<2.2001
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00672	<0.0181
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0116	<0.0602
5	Bromodichloromethane	µg	**0.0381**	<0.00170	**0.0371**	<0.00170	**0.0360**	<0.00170	<0.01010	<0.1264
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0116	<0.0260
7	Bromomethane	µg	**0.126**	**0.0422**	**0.0568**	**0.0210**	**0.0624**	**0.0196**	<0.0504	<0.3784
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0830	<0.4730
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0158	<0.0938
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0126	<0.0786
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0105	<0.0411
12	Carbon disulfide	µg	**0.105**	<0.0110	**0.0965**	<0.0110	**0.120**	<0.0110	<0.0116	<0.3661
13	Carbon tetrachloride	µg	**0.0514**	<0.00240	**0.0450**	**0.00272**	**0.0487**	0.0024	<0.0305	<0.1831
14	Chlorobenzene	µg	**0.00935**	<0.00100	**0.0106**	<0.00100	**0.0135**	<0.00100	<0.00578	<0.0421
15	Chlorodibromomethane	µg	**0.00853**	<0.00370	**0.00905**	<0.00370	**0.00897**	<0.00370	<0.0137	<0.0514
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0315	<0.0921
17	Chloroform	µg	**0.0997**	<0.00810	**0.0983**	<0.00810	**0.0907**	<0.00810	<0.00987	<0.3229
18	Chloromethane	µg	<0.0225	**0.147**	<0.0225	**0.103**	<0.0225	**0.0619**	<0.0305	<0.4099
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0105	<0.0303
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0116	<0.0380
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0221	<0.0857
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0116	<0.0554
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0116	<0.0368
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00714	<0.0617
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00693	<0.0507
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00683	<0.0608
27	Dichlorodifluoromethane	µg	<0.00620	**0.0202**	<0.00620	**0.0193**	<0.00620	**0.0161**	<0.0410	<0.1152
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00998	<0.0262
29	1,2-Dichloroethane	µg	**0.00398**	<0.00170	**0.00460**	<0.00170	**0.00971**	<0.00170	<0.01010	<0.0335
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0116	<0.0374
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00819	<0.0274
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00777	<0.0300
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00861	<0.0332
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00861	<0.0206
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0105	<0.0243
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0105	<0.0231
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00662	<0.0216
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0116	<0.0320
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00861	<0.0554
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0126	<0.1206
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0840	<0.2430
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00998	<0.0670
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0126	<0.0726
44	Methylene Chloride	µg	**0.157**	**0.0881**	**0.188**	<0.0860	**0.195**	<0.0860	<0.0840	<0.8841
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0714	<0.2880
46	N-Propylbenzene	µg	<0.00920	<0.0092	<0.00920	<0.0092	<0.00920	<0.0092	<0.0116	<0.0668
47	Styrene	µg	<0.00210	<0.00210	**0.00248**	<0.00210	**0.00695**	<0.00210	<0.0105	<0.0283
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00777	<0.0186
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0231	<0.0855
50	Tetrachloroethene	µg	**0.0148**	<0.00100	**0.0154**	<0.00100	**0.0201**	<0.00100	<0.00998	<0.0633
51	Toluene	µg	**0.0606**	**0.0228**	**0.0585**	**0.0157**	**0.0957**	**0.0281**	<0.0168	<0.2982
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0242	<0.1574
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0168	<0.1398
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0126	<0.0414
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00914	<0.0547
56	Trichloroethene	µg	**0.00883**	<0.00310	**0.00977**	<0.00310	**0.0124**	<0.00310	<0.00914	<0.0494
57	Trichlorofluoromethane	µg	**0.00753**	<0.00530	**0.00912**	<0.00530	**0.00854**	<0.00530	<0.0326	<0.0737
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0284	<0.0908
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0116	<0.0542
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0105	<0.0225
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	**0.00655**	**0.00696**	**0.0151**	<0.0242	<0.0720
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00893	<0.0533
63	m,p-Xylene	µg	**0.00927**	<0.00700	**0.00752**	<0.00700	**0.00798**	<0.00700	<0.00945	<0.0552

Vost No.	Blanks & MDL - Run 2 Analyte	TRAP	FIELD BLANK A/B	FIELD BLANK C	MDL Condensate	MDL A/B	MDL C	SUM	MDL % of Detected
1	Acetone	µg	<0.154	<0.154	0.137	0.154	0.154	0.445	36.0%
2	Benzene	µg	<0.00570	<0.00570	0.00798	0.00570	0.00570	0.01938	0.9%
3	Bromobenzene	µg	<0.00190	<0.00190	0.00672	0.00190	0.00190	0.01052	58.1%
4	Bromochloromethane	µg	<0.00810	<0.00810	0.0116	0.00810	0.00810	0.0278	46.2%
5	Bromodichloromethane	µg	<0.00170	<0.00170	0.0101	0.00170	0.00170	0.0135	10.7%
6	Bromoform	µg	<0.00240	<0.00240	0.0116	0.00240	0.00240	0.0164	63.1%
7	Bromomethane	µg	<0.0110	<0.0110	0.0504	0.0110	0.0110	0.0724	19.1%
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	0.0830	0.0650	0.0650	0.213	45.0%
9	n-Butylbenzene	µg	<0.0130	<0.0130	0.0158	0.0130	0.0130	0.0418	44.6%
10	sec-Butylbenzene	µg	<0.0110	<0.0110	0.0126	0.0110	0.0110	0.0346	44.0%
11	tert-Butylbenzene	µg	<0.00510	<0.00510	0.0105	0.00510	0.00510	0.0207	50.4%
12	Carbon disulfide	µg	<0.0110	<0.0110	0.0116	0.0110	0.0110	0.0336	9.2%
13	Carbon tetrachloride	µg	<0.00240	<0.00240	0.0305	0.00240	0.00240	0.0353	19.3%
14	Chlorobenzene	µg	0.00165	<0.00100	0.00578	0.00100	0.00100	0.00778	18.5%
15	Chlorodibromomethane	µg	<0.00370	<0.00370	0.0137	0.00370	0.00370	0.0211	41.1%
16	Chloroethane	µg	<0.0101	<0.0101	0.0315	0.0101	0.0101	0.0517	56.1%
17	Chloroform	µg	<0.00810	<0.00810	0.00987	0.00810	0.00810	0.02607	8.1%
18	Chloromethane	µg	<0.0225	<0.0225	0.0305	0.0225	0.0225	0.0755	18.4%
19	2-Chlorotoluene	µg	<0.00330	<0.00330	0.0105	0.00330	0.00330	0.0171	56.4%
20	4-Chlorotoluene	µg	<0.00440	<0.00440	0.0116	0.00440	0.00440	0.0204	53.7%
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	0.0221	0.0106	0.0106	0.0433	50.5%
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	0.0116	0.00730	0.00730	0.0262	47.3%
23	Dibromomethane	µg	<0.00420	<0.00420	0.0116	0.00420	0.00420	0.02	54.3%
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	0.00714	0.00910	0.00910	0.02534	41.0%
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	0.00693	0.00730	0.00730	0.02153	42.4%
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	0.00683	0.00900	0.00900	0.02483	40.8%
27	Dichlorodifluoromethane	µg	<0.00620	<0.00620	0.0410	0.00620	0.00620	0.0534	46.4%
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	0.00998	0.00270	0.00270	0.01538	58.7%
29	1,2-Dichloroethane	µg	<0.00170	<0.00170	0.0101	0.00170	0.00170	0.0135	40.3%
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	0.0116	0.00430	0.00430	0.0202	54.0%
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	0.00819	0.00320	0.00320	0.01459	53.3%
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	0.00777	0.00370	0.00370	0.01517	50.6%
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	0.00861	0.00410	0.00410	0.01681	50.6%
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	0.00861	0.00200	0.00200	0.01261	61.2%
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	0.0105	0.00230	0.00230	0.0151	62.1%
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	0.0105	0.00210	0.00210	0.0147	63.6%
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	0.00662	0.00250	0.00250	0.01162	53.7%
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	0.0116	0.00340	0.00340	0.0184	57.5%
39	Ethylbenzene	µg	<0.00780	<0.00780	0.00861	0.00780	0.00780	0.02421	43.7%
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	0.0126	0.0180	0.0180	0.0486	40.3%
41	2-Hexanone	µg	<0.0265	<0.0265	0.0840	0.0265	0.0265	0.137	56.4%
42	Isopropylbenzene	µg	<0.00950	<0.00950	0.00998	0.00950	0.00950	0.02898	43.3%
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	0.0126	0.0100	0.0100	0.0326	44.9%
44	Methylene Chloride	µg	0.398	<0.0860	0.0840	0.0860	0.0860	0.256	29.0%
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	0.0714	0.0361	0.0361	0.1436	49.9%
46	N-Propylbenzene	µg	<0.00920	<0.00920	0.0116	0.00920	0.00920	0.03	44.9%
47	Styrene	µg	<0.00210	<0.00210	0.0105	0.00210	0.00210	0.0147	51.9%
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	0.00777	0.00180	0.00180	0.01137	61.2%
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	0.0231	0.0104	0.0104	0.0439	51.3%
50	Tetrachloroethene	µg	<0.00100	<0.00100	0.00998	0.00100	0.00100	0.01198	18.9%
51	Toluene	µg	<0.0147	<0.0147	0.0168	0.0147	0.0147	0.0462	15.5%
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	0.0242	0.0222	0.0222	0.0686	43.6%
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	0.0168	0.0205	0.0205	0.0578	41.3%
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	0.0126	0.00480	0.00480	0.0222	53.6%
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	0.00914	0.00760	0.00760	0.02434	44.5%
56	Trichloroethene	µg	<0.00310	<0.00310	0.00914	0.00310	0.00310	0.01534	31.0%
57	Trichlorofluoromethane	µg	<0.00530	<0.00530	0.0326	0.00530	0.00530	0.0432	58.6%
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	0.0284	0.0104	0.0104	0.0492	54.2%
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	0.0116	0.00710	0.00710	0.0258	47.6%
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	0.0105	0.00200	0.00200	0.0145	64.4%
61	Vinyl chloride	µg	<0.00640	<0.00640	0.0242	0.00640	0.00640	0.037	51.4%
62	o-Xylene	µg	<0.00740	<0.00740	0.00893	0.00740	0.00740	0.02373	44.5%
63	m,p-Xylene	µg	<0.00700	<0.00700	0.00945	0.00700	0.00700	0.02345	42.5%

Vost No.	Totals - Run 2 Analyte	TRAP	Run 2A A/B	Run 2A C	Run 2B A/B	Run 2B C	Run 2C A/B	Run 2C C	Condensate
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	**0.313**
2	Benzene	µg	**0.259**	<0.00570	**0.602**	<0.00570	**1.31**	**0.00975**	<0.00798
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00672
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0116
5	Bromodichloromethane	µg	**0.0381**	<0.00170	**0.0371**	<0.00170	**0.0360**	<0.00170	<0.01010
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0116
7	Bromomethane	µg	**0.126**	**0.0422**	**0.0568**	**0.0210**	**0.0624**	**0.0196**	<0.0504
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0830
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0158
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0126
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0105
12	Carbon disulfide	µg	**0.105**	<0.0110	**0.0965**	<0.0110	**0.120**	<0.0110	<0.0116
13	Carbon tetrachloride	µg	**0.0514**	<0.00240	**0.0450**	**0.00272**	**0.0487**	0.0024	<0.0305
14	Chlorobenzene	µg	**0.00935**	<0.00100	**0.0106**	<0.00100	**0.0135**	<0.00100	<0.00578
15	Chlorodibromomethane	µg	**0.00853**	<0.00370	**0.00905**	<0.00370	**0.00897**	<0.00370	<0.0137
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0315
17	Chloroform	µg	**0.0997**	<0.00810	**0.0983**	<0.00810	**0.0907**	<0.00810	<0.00987
18	Chloromethane	µg	<0.0225	**0.147**	<0.0225	**0.103**	<0.0225	**0.0619**	<0.0305
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0105
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0116
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0221
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0116
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0116
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00714
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00693
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00683
27	Dichlorodifluoromethane	µg	<0.00620	**0.0202**	<0.00620	**0.0193**	<0.00620	**0.0161**	<0.0410
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00998
29	1,2-Dichloroethane	µg	**0.00398**	<0.00170	**0.00460**	<0.00170	**0.00971**	<0.00170	<0.01010
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0116
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00819
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00777
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00861
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00861
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0105
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0105
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00662
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0116
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00861
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0126
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0840
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00998
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0126
44	Methylene Chloride	µg	**0.157**	**0.0881**	**0.188**	<0.0860	**0.195**	<0.0860	<0.0840
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0714
46	N-Propylbenzene	µg	<0.00920	<0.0092	<0.00920	<0.0092	<0.00920	<0.0092	<0.0116
47	Styrene	µg	<0.00210	<0.00210	**0.00248**	<0.00210	**0.00695**	<0.00210	<0.0105
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00777
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0231
50	Tetrachloroethene	µg	**0.0148**	<0.00100	**0.0154**	<0.00100	**0.0201**	<0.00100	<0.00998
51	Toluene	µg	**0.0606**	**0.0228**	**0.0585**	**0.0157**	**0.0957**	**0.0281**	<0.0168
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0242
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0168
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0126
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00914
56	Trichloroethene	µg	**0.00883**	<0.00310	**0.00977**	<0.00310	**0.0124**	<0.00310	<0.00914
57	Trichlorofluoromethane	µg	**0.00753**	<0.00530	**0.00912**	<0.00530	**0.00854**	<0.00530	<0.0326
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0284
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0116
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0105
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	**0.00655**	**0.00696**	**0.0151**	<0.0242
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00893
63	m,p-Xylene	µg	**0.00927**	<0.00700	**0.00752**	<0.00700	**0.00798**	<0.00700	<0.00945

Vost No.	Emissions - Run 2 Analyte	*SUM µg	Vstd 0.0615 µg/m3	Qsd 38,545.0 lb/hr	Mlb/hr steam 66.9 lb/Mlb steam
1	Acetone	**<1.237**	**<20.127**	**<2.91E-03**	**<4.34E-05**
2	Benzene	**<2.200**	**<35.799**	**<5.17E-03**	**<7.73E-05**
3	Bromobenzene	<0.018	<0.295	<4.26E-05	<6.36E-07
4	Bromochloromethane	<0.060	<0.980	<1.41E-04	<2.11E-06
5	Bromodichloromethane	**<0.126**	**<2.057**	**<2.97E-04**	**<4.44E-06**
6	Bromoform	<0.026	<0.423	<6.11E-05	<9.13E-07
7	Bromomethane	**<0.378**	**<6.157**	**<8.89E-04**	**<1.33E-05**
8	2-Butanone (MEK)	<0.473	<7.696	<1.11E-03	<1.66E-05
9	n-Butylbenzene	<0.094	<1.526	<2.20E-04	<3.29E-06
10	sec-Butylbenzene	<0.079	<1.279	<1.85E-04	<2.76E-06
11	tert-Butylbenzene	<0.041	<0.669	<9.66E-05	<1.44E-06
12	Carbon disulfide	**<0.366**	**<5.957**	**<8.60E-04**	**<1.29E-05**
13	Carbon tetrachloride	**<0.183**	**<2.980**	**<4.30E-04**	**<6.43E-06**
14	Chlorobenzene	**<0.042**	**<0.686**	**<9.90E-05**	**<1.48E-06**
15	Chlorodibromomethane	**<0.051**	**<0.836**	**<1.21E-04**	**<1.80E-06**
16	Chloroethane	<0.092	<1.499	<2.16E-04	<3.23E-06
17	Chloroform	**<0.323**	**<5.253**	**<7.58E-04**	**<1.13E-05**
18	Chloromethane	**<0.410**	**<6.670**	**<9.63E-04**	**<1.44E-05**
19	2-Chlorotoluene	<0.030	<0.493	<7.12E-05	<1.06E-06
20	4-Chlorotoluene	<0.038	<0.618	<8.93E-05	<1.33E-06
21	1,2-Dibromo-3-Chloropropane	<0.086	<1.394	<2.01E-04	<3.01E-06
22	1,2-Dibromoethane (EDB)	<0.055	<0.901	<1.30E-04	<1.95E-06
23	Dibromomethane	<0.037	<0.599	<8.65E-05	<1.29E-06
24	1,2-Dichlorobenzene	<0.062	<1.005	<1.45E-04	<2.17E-06
25	1,3-Dichlorobenzene	<0.051	<0.825	<1.19E-04	<1.78E-06
26	1,4-Dichlorobenzene	<0.061	<0.990	<1.43E-04	<2.14E-06
27	Dichlorodifluoromethane	**<0.115**	**<1.874**	**<2.71E-04**	**<4.05E-06**
28	1,1-Dichloroethane	<0.026	<0.426	<6.15E-05	<9.19E-07
29	1,2-Dichloroethane	**<0.033**	**<0.545**	**<7.87E-05**	**<1.18E-06**
30	1,1-Dichloroethene	<0.037	<0.609	<8.79E-05	<1.31E-06
31	cis-1,2-Dichloroethene	<0.027	<0.446	<6.43E-05	<9.62E-07
32	trans-1,2-Dichloroethene	<0.030	<0.488	<7.04E-05	<1.05E-06
33	1,2-Dichloropropane	<0.033	<0.540	<7.80E-05	<1.17E-06
34	1,3-Dichloropropane	<0.021	<0.335	<4.84E-05	<7.24E-07
35	2,2-Dichloropropane	<0.024	<0.395	<5.71E-05	<8.53E-07
36	1,1-Dichloropropene	<0.023	<0.376	<5.43E-05	<8.11E-07
37	cis-1,3-Dichloropropene	<0.022	<0.352	<5.08E-05	<7.59E-07
38	trans-1,3-Dichloropropene	<0.032	<0.521	<7.52E-05	<1.12E-06
39	Ethylbenzene	<0.055	<0.902	<1.30E-04	<1.95E-06
40	Hexachlorobutadiene	<0.121	<1.962	<2.83E-04	<4.23E-06
41	2-Hexanone	<0.243	<3.954	<5.71E-04	<8.53E-06
42	Isopropylbenzene	<0.067	<1.090	<1.57E-04	<2.35E-06
43	4-Isopropyltoluene	<0.073	<1.181	<1.71E-04	<2.55E-06
44	Methylene Chloride	**<0.884**	**<14.385**	**<2.08E-03**	**<3.10E-05**
45	4-Methyl-2-pentanone (MIBK)	<0.288	<4.686	<6.77E-04	<1.01E-05
46	N-Propylbenzene	<0.067	<1.087	<1.57E-04	<2.35E-06
47	Styrene	**<0.028**	**<0.461**	**<6.66E-05**	**<9.95E-07**
48	1,1,2-Tetrachloroethane	<0.019	<0.302	<4.36E-05	<6.52E-07
49	1,1,2,2-Tetrachloroethane	<0.086	<1.391	<2.01E-04	<3.00E-06
50	Tetrachloroethene	**<0.063**	**<1.030**	**<1.49E-04**	**<2.22E-06**
51	Toluene	**<0.298**	**<4.852**	**<7.01E-04**	**<1.05E-05**
52	1,2,3-Trichlorobenzene	<0.157	<2.561	<3.70E-04	<5.53E-06
53	1,2,4-Trichlorobenzene	<0.140	<2.275	<3.28E-04	<4.91E-06
54	1,1,1-Trichloroethane	<0.041	<0.674	<9.73E-05	<1.45E-06
55	1,1,2-Trichloroethane	<0.055	<0.891	<1.29E-04	<1.92E-06
56	Trichloroethene	**<0.049**	**<0.804**	**<1.16E-04**	**<1.74E-06**
57	Trichlorofluoromethane	**<0.074**	**<1.199**	**<1.73E-04**	**<2.59E-06**
58	1,2,3-Trichloropropane	<0.091	<1.477	<2.13E-04	<3.19E-06
59	1,2,4-Trimethylbenzene	<0.054	<0.882	<1.27E-04	<1.90E-06
60	1,3,5-Trimethylbenzene	<0.023	<0.366	<5.29E-05	<7.90E-07
61	Vinyl chloride	**<0.072**	**<1.172**	**<1.69E-04**	**<2.53E-06**
62	o-Xylene	<0.053	<0.868	<1.25E-04	<1.87E-06
63	m,p-Xylene	**<0.055**	**<0.898**	**<1.30E-04**	**<1.94E-06**

Unit 2
VOST

Vost No.	Samples - Run 3 (Raw) Analyte	TRAP	Run 3A A/B	Run 3A C	Run 3B A/B	Run 3B C	Run 3C A/B	Run 3C C	Condensate	SUM
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	0.367	<1.2910
2	Benzene	µg	0.191	<0.00570	0.799	0.0130	0.769	<0.00570	<0.00787	<1.7913
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00662	<0.0180
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0114	<0.0600
5	Bromodichloromethane	µg	0.0339	<0.00170	0.0337	<0.00170	0.0394	<0.00170	<0.00994	<0.1220
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0114	<0.0258
7	Bromomethane	µg	0.0454	0.0304	0.0423	0.0228	0.0408	0.0468	<0.0497	<0.2782
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0818	<0.4718
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0155	<0.0935
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0124	<0.0784
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0104	<0.0410
12	Carbon disulfide	µg	0.104	<0.0110	0.0862	<0.0110	0.0707	<0.0110	<0.0114	<0.3053
13	Carbon tetrachloride	µg	0.0468	<0.00240	0.0509	0.00251	0.0522	0.00262	<0.0300	<0.1874
14	Chlorobenzene	µg	0.0106	<0.00100	0.00921	0.00113	0.0125	<0.00100	<0.00569	<0.0411
15	Chlorodibromomethane	µg	0.00871	<0.00370	0.00781	<0.00370	0.00910	<0.00370	<0.0135	<0.0502
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0311	<0.0917
17	Chloroform	µg	0.0848	<0.00810	0.0900	<0.00810	0.0104	<0.00810	<0.00973	<0.2192
18	Chloromethane	µg	<0.0225	0.115	<0.0225	0.0892	<0.0225	0.146	<0.0300	<0.4477
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0104	<0.0302
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0114	<0.0378
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0217	<0.0853
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0114	<0.0552
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0114	<0.0366
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00704	<0.0616
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00683	<0.0506
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00673	<0.0607
27	Dichlorodifluoromethane	µg	<0.00620	0.0173	<0.00620	0.0160	<0.00620	0.0224	<0.0404	<0.1147
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00983	<0.0260
29	1,2-Dichloroethane	µg	0.00406	<0.00170	0.00743	<0.0170	0.00749	<0.00170	<0.00994	<0.0493
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0114	<0.0372
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00807	<0.0273
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00766	<0.0299
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00849	<0.0331
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00849	<0.0205
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0104	<0.0242
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0104	<0.0230
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00652	<0.0215
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0114	<0.0318
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00849	<0.0553
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0124	<0.1204
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.08280	<0.2418
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00983	<0.0668
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0124	<0.0724
44	Methylene Chloride	µg	0.319	0.114	0.156	0.100	0.166	<0.0860	<0.0828	<1.0238
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0704	<0.2870
46	N-Propylbenzene	µg	<0.00920	<0.00920	<0.00920	<0.00920	<0.00920	<0.00920	<0.0114	<0.0666
47	Styrene	µg	0.00311	<0.00210	0.00310	<0.00210	0.00298	<0.00210	<0.0104	<0.0259
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00766	<0.0185
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0228	<0.0852
50	Tetrachloroethene	µg	0.0158	<0.00100	0.0182	<0.00100	0.0211	<0.00100	<0.0983	<0.1564
51	Toluene	µg	0.175	0.0193	0.0703	0.0308	0.0896	<0.0147	<0.0166	<0.4163
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0238	<0.1570
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0166	<0.1396
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0124	<0.0412
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00900	<0.0546
56	Trichloroethene	µg	0.00760	<0.00310	0.0105	<0.00310	0.0100	<0.00310	<0.00900	<0.0464
57	Trichlorofluoromethane	µg	0.00893	<0.00530	0.00718	<0.00530	0.00695	<0.00530	<0.0321	<0.0711
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0279	<0.0903
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0114	<0.0540
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0104	<0.0224
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	0.0164	<0.00640	0.0109	<0.0238	<0.0767
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00880	<0.0532
63	m,p-Xylene	µg	0.00719	<0.00700	<0.00700	<0.00700	0.00745	<0.00700	<0.00932	<0.0520

Vost No.	Samples - Run 3 (Blnk Cor) Analyte	TRAP	Run 3A A/B	Run 3A C	Run 3B A/B	Run 3B C	Run 3C A/B	Run 3C C	Condensate	SUM
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	**0.367**	<1.2910
2	Benzene	µg	**0.191**	<0.00570	**0.799**	**0.0130**	**0.769**	<0.00570	<0.00787	<1.7913
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00662	<0.0180
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0114	<0.0600
5	Bromodichloromethane	µg	**0.0339**	<0.00170	**0.0337**	<0.00170	**0.0394**	<0.00170	<0.00994	<0.1220
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0114	<0.0258
7	Bromomethane	µg	**0.0454**	**0.0304**	**0.0423**	**0.0228**	**0.0408**	**0.0468**	<0.0497	<0.2782
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0818	<0.4718
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0155	<0.0935
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0124	<0.0784
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0104	<0.0410
12	Carbon disulfide	µg	**0.104**	<0.0110	**0.0862**	<0.0110	**0.0707**	<0.0110	<0.0114	<0.3053
13	Carbon tetrachloride	µg	**0.0468**	<0.00240	**0.0509**	**0.00251**	**0.0522**	**0.00262**	<0.0300	<0.1874
14	Chlorobenzene	µg	**0.0106**	<0.00100	**0.00921**	**0.00113**	**0.0125**	<0.00100	<0.00569	<0.0411
15	Chlorodibromomethane	µg	**0.00871**	<0.00370	**0.00781**	<0.00370	**0.0091**	<0.00370	<0.0135	<0.0502
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0311	<0.0917
17	Chloroform	µg	**0.0848**	<0.00810	**0.0900**	<0.00810	**0.0104**	<0.00810	<0.00973	<0.2192
18	Chloromethane	µg	<0.0225	**0.0891**	<0.0225	**0.0633**	<0.0225	**0.120**	<0.0300	<0.3700
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0104	<0.0302
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0114	<0.0378
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0217	<0.0853
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0114	<0.0552
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0114	<0.0366
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00704	<0.0616
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00683	<0.0506
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00673	<0.0607
27	Dichlorodifluoromethane	µg	<0.00620	**0.0173**	<0.00620	**0.0160**	<0.00620	**0.0224**	<0.0404	<0.1147
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00983	<0.0260
29	1,2-Dichloroethane	µg	**0.00406**	<0.00170	**0.00743**	<0.01700	**0.00749**	<0.00170	<0.00994	<0.0493
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0114	<0.0372
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00807	<0.0273
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00766	<0.0299
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00849	<0.0331
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00849	<0.0205
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0104	<0.0242
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0104	<0.0230
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00652	<0.0215
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0114	<0.0318
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00849	<0.0553
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0124	<0.1204
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0828	<0.2418
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00983	<0.0668
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0124	<0.0724
44	Methylene Chloride	µg	**0.226**	**0.114**	**0.0631**	**0.100**	**0.0731**	<0.0860	<0.0828	<0.7451
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0704	<0.2870
46	N-Propylbenzene	µg	<0.00920	<0.0092	<0.00920	<0.0092	<0.00920	<0.0092	<0.0114	<0.0666
47	Styrene	µg	**0.00311**	<0.00210	**0.00310**	<0.00210	**0.00298**	<0.00210	<0.0104	<0.0259
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00766	<0.0185
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0228	<0.0852
50	Tetrachloroethene	µg	**0.0158**	<0.00100	**0.0182**	<0.00100	**0.0211**	<0.00100	<0.0983	<0.1564
51	Toluene	µg	**0.175**	**0.0193**	**0.0703**	**0.0308**	**0.0896**	<0.01470	<0.0166	<0.4163
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0238	<0.1570
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0166	<0.1396
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0124	<0.0412
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00900	<0.0546
56	Trichloroethene	µg	**0.0076**	<0.00310	**0.0105**	<0.00310	**0.0100**	<0.00310	<0.00900	<0.0464
57	Trichlorofluoromethane	µg	**0.00893**	<0.00530	**0.00718**	<0.00530	**0.00695**	<0.00530	<0.0321	<0.0711
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0279	<0.0903
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0114	<0.0540
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0104	<0.0224
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	**0.0164**	<0.00640	**0.0109**	<0.0238	<0.0767
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00880	<0.0532
63	m,p-Xylene	µg	**0.00719**	<0.00700	<0.00700	<0.00700	**0.00745**	<0.00700	<0.00932	<0.0520

Vost No.	Blanks & MDL - Run 3 Analyte	TRAP	FIELD BLANK A/B	FIELD BLANK C	MDL Condensate	MDL A/B	MDL C	SUM	MDL % of Detected
1	Acetone	µg	<0.154	<0.154	0.135	0.154	0.154	0.443	34.3%
2	Benzene	µg	<0.00570	<0.00570	0.00787	0.00570	0.00570	0.01927	1.1%
3	Bromobenzene	µg	<0.00190	<0.00190	0.00662	0.00190	0.00190	0.01042	57.8%
4	Bromochloromethane	µg	<0.00810	<0.00810	0.0114	0.00810	0.00810	0.0276	46.0%
5	Bromodichloromethane	µg	<0.00170	<0.00170	0.00994	0.00170	0.00170	0.01334	10.9%
6	Bromoform	µg	<0.00240	<0.00240	0.0114	0.00240	0.00240	0.0162	62.8%
7	Bromomethane	µg	<0.0110	<0.0110	0.0497	0.0110	0.0110	0.0717	25.8%
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	0.0818	0.0650	0.0650	0.2118	44.9%
9	n-Butylbenzene	µg	<0.0130	<0.0130	0.0155	0.0130	0.0130	0.0415	44.4%
10	sec-Butylbenzene	µg	<0.0110	<0.0110	0.0124	0.0110	0.0110	0.0344	43.9%
11	tert-Butylbenzene	µg	<0.00510	<0.00510	0.0104	0.00510	0.00510	0.0206	50.2%
12	Carbon disulfide	µg	<0.0110	<0.0110	0.0114	0.0110	0.0110	0.0334	10.9%
13	Carbon tetrachloride	µg	<0.00240	<0.00240	0.0300	0.00240	0.00240	0.0348	18.6%
14	Chlorobenzene	µg	<0.00100	<0.00100	0.00569	0.00100	0.00100	0.00769	18.7%
15	Chlorodibromomethane	µg	<0.00370	<0.00370	0.0135	0.00370	0.00370	0.0209	41.6%
16	Chloroethane	µg	<0.0101	<0.0101	0.0311	0.0101	0.0101	0.0513	55.9%
17	Chloroform	µg	<0.00810	<0.00810	0.00973	0.00810	0.00810	0.02593	11.8%
18	Chloromethane	µg	<0.0225	0.0259	0.0300	0.0225	0.0225	0.075	20.3%
19	2-Chlorotoluene	µg	<0.00330	<0.00330	0.0104	0.00330	0.00330	0.017	56.3%
20	4-Chlorotoluene	µg	<0.00440	<0.00440	0.0114	0.00440	0.00440	0.0202	53.4%
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	0.0217	0.0106	0.0106	0.0429	50.3%
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	0.0114	0.00730	0.00730	0.026	47.1%
23	Dibromomethane	µg	<0.00420	<0.00420	0.0114	0.00420	0.00420	0.0198	54.1%
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	0.00704	0.00910	0.00910	0.02524	40.9%
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	0.00683	0.00730	0.00730	0.02143	42.3%
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	0.00673	0.00900	0.00900	0.02473	40.7%
27	Dichlorodifluoromethane	µg	<0.00620	<0.00620	0.0404	0.00620	0.00620	0.0528	46.0%
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	0.00983	0.00270	0.00270	0.01523	58.5%
29	1,2-Dichloroethane	µg	<0.00170	<0.00170	0.00994	0.00170	0.00170	0.01334	27.0%
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	0.0114	0.00430	0.00430	0.02	53.8%
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	0.00807	0.00320	0.00320	0.01447	53.1%
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	0.00766	0.00370	0.00370	0.01506	50.4%
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	0.00849	0.00410	0.00410	0.01669	50.4%
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	0.00849	0.00200	0.00200	0.01249	61.0%
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	0.0104	0.00230	0.00230	0.015	62.0%
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	0.0104	0.00210	0.00210	0.0146	63.5%
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	0.00562	0.00250	0.00250	0.01062	49.3%
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	0.0114	0.00340	0.00340	0.0182	57.2%
39	Ethylbenzene	µg	<0.00780	<0.00780	0.00849	0.00780	0.00780	0.02409	43.6%
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	0.0124	0.0180	0.0180	0.0484	40.2%
41	2-Hexanone	µg	<0.0265	<0.0265	0.0828	0.0265	0.0265	0.1358	56.2%
42	Isopropylbenzene	µg	<0.00950	<0.00950	0.00983	0.00950	0.00950	0.02883	43.1%
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	0.0124	0.0100	0.0100	0.0324	44.8%
44	Methylene Chloride	µg	0.0929	<0.0860	0.0828	0.0860	0.0860	0.2548	34.2%
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	0.0704	0.0361	0.0361	0.1426	49.7%
46	N-Propylbenzene	µg	<0.00920	<0.00920	0.0114	0.00920	0.00920	0.0298	44.7%
47	Styrene	µg	<0.00210	<0.00210	0.0104	0.00210	0.00210	0.0146	56.4%
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	0.00766	0.00180	0.00180	0.01126	61.0%
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	0.0228	0.0104	0.0104	0.0436	51.2%
50	Tetrachloroethene	µg	<0.00100	<0.00100	0.00983	0.00100	0.00100	0.01183	7.6%
51	Toluene	µg	<0.0147	<0.0147	0.0166	0.0147	0.0147	0.046	11.0%
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	0.0238	0.0222	0.0222	0.0682	43.4%
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	0.0166	0.0205	0.0205	0.0576	41.3%
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	0.0124	0.00480	0.00480	0.022	53.4%
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	0.00900	0.00760	0.00760	0.0242	44.3%
56	Trichloroethene	µg	<0.00310	<0.00310	0.00900	0.00310	0.00310	0.0152	32.8%
57	Trichlorofluoromethane	µg	<0.00530	<0.00530	0.0321	0.00530	0.00530	0.0427	60.1%
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	0.0279	0.0104	0.0104	0.0487	53.9%
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	0.0114	0.00710	0.00710	0.0256	47.4%
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	0.0104	0.00200	0.00200	0.0144	64.3%
61	Vinyl chloride	µg	<0.00640	<0.00640	0.0238	0.00640	0.00640	0.0366	47.7%
62	o-Xylene	µg	<0.00740	<0.00740	0.00880	0.00740	0.00740	0.0236	44.4%
63	m,p-Xylene	µg	<0.00700	<0.00700	0.00932	0.00700	0.00700	0.02332	44.9%

Vost No.	Totals - Run 3 Analyte	TRAP	Run 3A A/B	Run 3A C	Run 3B A/B	Run 3B C	Run 3C A/B	Run 3C C	Condensate
1	Acetone	µg	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	**0.367**
2	Benzene	µg	**0.191**	<0.00570	**0.799**	**0.0130**	**0.769**	<0.00570	<0.00787
3	Bromobenzene	µg	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00662
4	Bromochloromethane	µg	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.00810	<0.0114
5	Bromodichloromethane	µg	**0.0339**	<0.00170	**0.0337**	<0.00170	**0.0394**	<0.00170	<0.00994
6	Bromoform	µg	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.00240	<0.0114
7	Bromomethane	µg	**0.0454**	**0.0304**	**0.0423**	**0.0228**	**0.0408**	**0.0468**	<0.0497
8	2-Butanone (MEK)	µg	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0650	<0.0818
9	n-Butylbenzene	µg	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0155
10	sec-Butylbenzene	µg	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0124
11	tert-Butylbenzene	µg	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.00510	<0.0104
12	Carbon disulfide	µg	**0.104**	<0.0110	**0.0862**	<0.0110	**0.0707**	<0.0110	<0.0114
13	Carbon tetrachloride	µg	**0.0468**	<0.00240	**0.0509**	**0.00251**	**0.0522**	**0.00262**	<0.0300
14	Chlorobenzene	µg	**0.0106**	<0.00100	**0.00921**	**0.00113**	**0.0125**	<0.00100	<0.00569
15	Chlorodibromomethane	µg	**0.00871**	<0.00370	**0.00781**	<0.00370	**0.0091**	<0.00370	<0.0135
16	Chloroethane	µg	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0311
17	Chloroform	µg	**0.0848**	<0.00810	**0.0900**	<0.00810	**0.0104**	<0.00810	<0.00973
18	Chloromethane	µg	<0.0225	**0.0891**	<0.0225	**0.0633**	<0.0225	**0.120**	<0.0300
19	2-Chlorotoluene	µg	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<0.0104
20	4-Chlorotoluene	µg	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.00440	<0.0114
21	1,2-Dibromo-3-Chloropropan	µg	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0217
22	1,2-Dibromoethane (EDB)	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.0114
23	Dibromomethane	µg	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.00420	<0.0114
24	1,2-Dichlorobenzene	µg	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00910	<0.00704
25	1,3-Dichlorobenzene	µg	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00683
26	1,4-Dichlorobenzene	µg	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00900	<0.00673
27	Dichlorodifluoromethane	µg	<0.00620	**0.0173**	<0.00620	**0.0160**	<0.00620	**0.0224**	<0.0404
28	1,1-Dichloroethane	µg	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00270	<0.00983
29	1,2-Dichloroethane	µg	**0.00406**	<0.00170	**0.00743**	<0.01700	**0.00749**	<0.00170	<0.00994
30	1,1-Dichloroethene	µg	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0114
31	cis-1,2-Dichloroethene	µg	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00807
32	trans-1,2-Dichloroethene	µg	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00766
33	1,2-Dichloropropane	µg	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00410	<0.00849
34	1,3-Dichloropropane	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00849
35	2,2-Dichloropropane	µg	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.0104
36	1,1-Dichloropropene	µg	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.00210	<0.0104
37	cis-1,3-Dichloropropene	µg	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00652
38	trans-1,3-Dichloropropene	µg	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.00340	<0.0114
39	Ethylbenzene	µg	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00780	<0.00849
40	Hexachlorobutadiene	µg	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0180	<0.0124
41	2-Hexanone	µg	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0265	<0.0828
42	Isopropylbenzene	µg	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00950	<0.00983
43	4-Isopropyltoluene	µg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0124
44	Methylene Chloride	µg	**0.226**	**0.114**	**0.086**	**0.100**	**0.086**	<0.0860	<0.0828
45	4-Methyl-2-pentanone (MIBK	µg	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0361	<0.0704
46	N-Propylbenzene	µg	<0.00920	<0.0092	<0.00920	<0.0092	<0.00920	<0.0092	<0.0114
47	Styrene	µg	**0.00311**	<0.00210	**0.00310**	<0.00210	**0.00298**	<0.00210	<0.0104
48	1,1,2-Tetrachloroethane	µg	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00180	<0.00766
49	1,1,2,2-Tetrachloroethane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0228
50	Tetrachloroethene	µg	**0.0158**	<0.00100	**0.0182**	<0.00100	**0.0211**	<0.00100	<0.0983
51	Toluene	µg	**0.175**	**0.0193**	**0.0703**	**0.0308**	**0.0896**	<0.01470	<0.0166
52	1,2,3-Trichlorobenzene	µg	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0238
53	1,2,4-Trichlorobenzene	µg	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0166
54	1,1,1-Trichloroethane	µg	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.00480	<0.0124
55	1,1,2-Trichloroethane	µg	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00760	<0.00900
56	Trichloroethene	µg	**0.0076**	<0.00310	**0.0105**	<0.00310	**0.0100**	<0.00310	<0.00900
57	Trichlorofluoromethane	µg	**0.00893**	<0.00530	**0.00718**	<0.00530	**0.00695**	<0.00530	<0.0321
58	1,2,3-Trichloropropane	µg	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0279
59	1,2,4-Trimethylbenzene	µg	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.00710	<0.0114
60	1,3,5-Trimethylbenzene	µg	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.0104
61	Vinyl chloride	µg	<0.00640	<0.00640	<0.00640	**0.0164**	<0.00640	**0.0109**	<0.0238
62	o-Xylene	µg	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00880
63	m,p-Xylene	µg	**0.00719**	<0.00700	<0.00700	<0.00700	**0.00745**	<0.00700	<0.00932

Vost No.	Emissions - Run 3 Analyte	*SUM µg	Vstd	0.0617 µg/m3	Qsd	37,016.3 lb/hr	Mlb/hr steam	67.8 lb/Mlb steam
1	Acetone	**<1.291**		**<20.908**		**<2.90E-03**		**<4.28E-05**
2	Benzene	**<1.791**		**<29.009**		**<4.02E-03**		**<5.93E-05**
3	Bromobenzene	<0.018		<0.292		<4.05E-05		<5.97E-07
4	Bromochloromethane	<0.060		<0.972		<1.35E-04		<1.99E-06
5	Bromodichloromethane	**<0.122**		**<1.976**		**<2.74E-04**		**<4.04E-06**
6	Bromoform	<0.026		<0.418		<5.79E-05		<8.54E-07
7	Bromomethane	**<0.278**		**<4.505**		**<6.25E-04**		**<9.21E-06**
8	2-Butanone (MEK)	<0.472		<7.641		<1.06E-03		<1.56E-05
9	n-Butylbenzene	<0.094		<1.514		<2.10E-04		<3.10E-06
10	sec-Butylbenzene	<0.078		<1.270		<1.76E-04		<2.60E-06
11	tert-Butylbenzene	<0.041		<0.664		<9.21E-05		<1.36E-06
12	Carbon disulfide	**<0.305**		**<4.944**		**<6.86E-04**		**<1.01E-05**
13	Carbon tetrachloride	**<0.187**		**<3.035**		**<4.21E-04**		**<6.21E-06**
14	Chlorobenzene	**<0.041**		**<0.666**		**<9.24E-05**		**<1.36E-06**
15	Chlorodibromomethane	**<0.050**		**<0.813**		**<1.13E-04**		**<1.66E-06**
16	Chloroethane	<0.092		<1.485		<2.06E-04		<3.04E-06
17	Chloroform	**<0.219**		**<3.550**		**<4.92E-04**		**<7.26E-06**
18	Chloromethane	**<0.370**		**<5.992**		**<8.31E-04**		**<1.23E-05**
19	2-Chlorotoluene	<0.030		<0.489		<6.78E-05		<1.00E-06
20	4-Chlorotoluene	<0.038		<0.612		<8.49E-05		<1.25E-06
21	1,2-Dibromo-3-Chloropropane	<0.085		<1.381		<1.92E-04		<2.83E-06
22	1,2-Dibromoethane (EDB)	<0.055		<0.894		<1.24E-04		<1.83E-06
23	Dibromomethane	<0.037		<0.593		<8.22E-05		<1.21E-06
24	1,2-Dichlorobenzene	<0.062		<0.998		<1.38E-04		<2.04E-06
25	1,3-Dichlorobenzene	<0.051		<0.820		<1.14E-04		<1.68E-06
26	1,4-Dichlorobenzene	<0.061		<0.984		<1.36E-04		<2.01E-06
27	Dichlorodifluoromethane	**<0.115**		**<1.858**		**<2.58E-04**		**<3.80E-06**
28	1,1-Dichloroethane	<0.026		<0.422		<5.84E-05		<8.62E-07
29	1,2-Dichloroethane	**<0.049**		**<0.799**		**<1.11E-04**		**<1.63E-06**
30	1,1-Dichloroethene	<0.037		<0.602		<8.35E-05		<1.23E-06
31	cis-1,2-Dichloroethene	<0.027		<0.442		<6.12E-05		<9.03E-07
32	trans-1,2-Dichloroethene	<0.030		<0.484		<6.70E-05		<9.89E-07
33	1,2-Dichloropropane	<0.033		<0.536		<7.43E-05		<1.10E-06
34	1,3-Dichloropropane	<0.020		<0.332		<4.60E-05		<6.79E-07
35	2,2-Dichloropropane	<0.024		<0.392		<5.43E-05		<8.01E-07
36	1,1-Dichloropropene	<0.023		<0.372		<5.16E-05		<7.62E-07
37	cis-1,3-Dichloropropene	<0.022		<0.349		<4.83E-05		<7.13E-07
38	trans-1,3-Dichloropropene	<0.032		<0.515		<7.14E-05		<1.05E-06
39	Ethylbenzene	<0.055		<0.895		<1.24E-04		<1.83E-06
40	Hexachlorobutadiene	<0.120		<1.950		<2.70E-04		<3.99E-06
41	2-Hexanone	<0.242		<3.916		<5.43E-04		<8.01E-06
42	Isopropylbenzene	<0.067		<1.082		<1.50E-04		<2.21E-06
43	4-Isopropyltoluene	<0.072		<1.173		<1.63E-04		<2.40E-06
44	Methylene Chloride	**<0.781**		**<12.647**		**<1.75E-03**		**<2.59E-05**
45	4-Methyl-2-pentanone (MIBK)	<0.287		<4.648		<6.44E-04		<9.51E-06
46	N-Propylbenzene	<0.067		<1.079		<1.50E-04		<2.21E-06
47	Styrene	**<0.026**		**<0.419**		**<5.81E-05**		**<8.57E-07**
48	1,1,2-Tetrachloroethane	<0.018		<0.299		<4.15E-05		<6.11E-07
49	1,1,2,2-Tetrachloroethane	<0.085		<1.380		<1.91E-04		<2.82E-06
50	Tetrachloroethene	**<0.156**		**<2.533**		**<3.51E-04**		**<5.18E-06**
51	Toluene	**<0.416**		**<6.742**		**<9.35E-04**		**<1.38E-05**
52	1,2,3-Trichlorobenzene	<0.157		<2.543		<3.53E-04		<5.20E-06
53	1,2,4-Trichlorobenzene	<0.140		<2.261		<3.13E-04		<4.62E-06
54	1,1,1-Trichloroethane	<0.041		<0.667		<9.25E-05		<1.36E-06
55	1,1,2-Trichloroethane	<0.055		<0.884		<1.23E-04		<1.81E-06
56	Trichloroethene	**<0.046**		**<0.751**		**<1.04E-04**		**<1.54E-06**
57	Trichlorofluoromethane	**<0.071**		**<1.151**		**<1.60E-04**		**<2.35E-06**
58	1,2,3-Trichloropropane	<0.090		<1.462		<2.03E-04		<2.99E-06
59	1,2,4-Trimethylbenzene	<0.054		<0.875		<1.21E-04		<1.79E-06
60	1,3,5-Trimethylbenzene	<0.022		<0.363		<5.03E-05		<7.42E-07
61	Vinyl chloride	**<0.077**		**<1.242**		**<1.72E-04**		**<2.54E-06**
62	o-Xylene	<0.053		<0.862		<1.19E-04		<1.76E-06
63	m,p-Xylene	**<0.052**		**<0.841**		**<1.17E-04**		**<1.72E-06**

Appendix A.11
Example Calculations

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
STACK GAS VOLUMETRIC FLOW RATE

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-24
Run number:	HCl Run 1		

SAMPLE TRAIN DATA

Meter calibration factor, Y_d	1.0201	Y
Stack area, square feet	12.566	A_s
Pitot Coefficient	0.84	C_p
Barometric pressure, in. Hg	29.70	P_{bar}
Meter box volume, acf	41.208	V_m
Impinger liquid volume, g	176.2	V_{lc}
Meter temperature, °R	513.1	T_m = (°F plus 460)
Meter pressure, (delta H) iwg	1.5	ΔH
Velocity head, (delta P) iwg	1.4419	ΔP
Static pressure, iwg	-1.6	P_{sg}
Stack temperature, °R	727.5	T_s = (°F plus 460)
Stack O_2, % volume dry	11.00	O_2
Stack CO_2, % volume dry	8.40	CO_2
Stack N_2, % volume dry	80.6	N_2 = (100 - %O_2 - %CO_2)
Reference temperature, °R	528	T_{std} = (°F plus 460)

Note: The results calculated in the pages that follow may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

1 VOLUMETRIC FLOW RATE

a. Standard sample gas volume, dscf

$$V_{m\,std} = 17.64 \times (V_m)(Y)\frac{\left[P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right]}{(T_m)}$$

$$V_{m\,std} = \frac{17.64\times(41.208)(1.0201)[29.7+(1.5)/(13.6)]}{513.1}$$

$V_{m\,std}$ = 43.081 dscf

b. Water vapor volume, scf

$$V_{w\,std} = (0.04715)(V_{lc})\left(\frac{T_{std}}{528}\right)$$

$$V_{w\,std} = \frac{(0.04715)(176.2)(528)}{(528)}$$

$V_{w\,std}$ = 8.308 scf

c. Moisture content, non-dimensional

$$B_{ws} = \left(\frac{V_{w\,std}}{V_{m\,std} + V_{w\,std}}\right)$$

$$B_{ws} = \frac{(8.308)}{(43.081 + 8.308)}$$

B_{ws} = 0.1617 moisture content (multiply by 100 for % by volume)

d. Stack gas molecular weight, lb/lb mole (dry)

MW_{dry} = [0.44(%CO_2)] + [0.32(%O_2)] + [0.28(%N_2)]

MW_{dry} = *[0.44(8.4)] + [0.32(11)] + [0.28(80.6)]*

MW_{dry} = *29.784* lb/lb mole

e. Stack gas molecular weight, lb/lb mole (wet)

MW_{wet} = [MW_{dry}(1-B_{ws})] + [18(B_{ws})]

MW_{wet} = *[29.784(1-0.1617)] + [18(0.1617)]*

MW_{wet} = *27.879* lb/lb mole

f. Absolute stack pressure, in Hg

$$P_s = P_{bar} + \left(\frac{P_{sg}}{13.6}\right)$$

P_s = *29.7 + (-1.6/13.6)*

P_s = *29.582* in. Hg

g. Stack velocity, ft/sec

$$v_s = (85.49)(C_p)(\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(MW_{wet})}}$$

v_s = $(85.49)(0.84)\sqrt{\frac{(1.4419)(727.5)}{(29.582)(27.879)}}$

v_s = *80.989* ft/sec

h. Actual stack flow rate, acfm

$Q = (v_s)(A_s)(60\ min/hr)$

Q = $(80.989)(12.566)(60)$

Q = 61,062 acfm

i. Standard stack gas flow rate, wscfm

$Q_{ws} = (v_s)(A_s)(60\ min/hr)\left(\frac{T_{std}}{T_s}\right)\left(\frac{P_s}{P_{std}}\right)$

Q_{ws} = $(80.989)(12.566)(60)(528/727.5)(29.582/29.92)$

Q_{ws} = 43,817 wscfm

j. Standard stack gas flow rate, dscfm

$Q_{ds} = (v_s)(A_s)(60\ min/hr)(1 - B_{ws})\left(\frac{T_{std}}{T_s}\right)\left(\frac{P_s}{P_{std}}\right)$

Q_{ds} = $(80.989)(12.566)(60)(1-0.1617)(528/727.5)(29.582/29.92)$

Q_{ds} = 36,732 dscfm

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
HYDROGEN CHLORIDE

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-24
Run number:	1		

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Mass of measured compound in sample, mg/sample	8.14	F_t
Dry meter volume at standard conditions, dscf	43.100	$V_{m\,std}$
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, 1000 lb/hr	68.3	S
Molecular weight of gaseous species, lb/lb-mol	36.46	MW_S, where
36.46 for HCl		
Conversion factor from ppm to lb/scf	9.46E-08	CF where
9.462E-08 for HCl		

1 HCl

a. Concentration, ppm

$$C = \left(\frac{F_t}{V_{m\,std}}\right)\left(\frac{T_{ref}}{520}\right)\left(\frac{1g}{10^3\,mg}\right)\left(\frac{1\,lb}{454\,g}\right)\left(\frac{379.5\,dscf}{lb\cdot mol}\right)\left(\frac{lb\cdot mol}{MW\ g/mol}\right)10^6$$

$$C = \frac{(8.14 \times 528 \times 379.5 \times 1{,}000{,}000)}{(43.1 \times 520 \times 1000 \times 454 \times 36.46)}$$

C = 4.397 ppm

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, ppm @ 7% O_2

$$C_7 = C\ \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

C_7 = 4.40 x (20.9 - 7) / (20.9 - 11)

C_7 = 6.17 ppm @ 7% O_2

c. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

M = (4.397)(9.46E-08)(36,737)(60)

M = 0.917 lb/hr

d. Mass emission rate, lb/1000 lb steam

$$M' = \frac{M}{S}$$

M' = 0.917 / 68.3

M' = 0.0134 lb/1000 lb steam

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
CHLORINE

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-24
Run number:	1		

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Mass of measured compound in sample, mg/sample	0.242	F_t
Dry meter volume at standard conditions, dscf	43.100	$V_{m\,std}$
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, 1000 lb/hr	68.3	S
Molecular weight of gaseous species, lb/lb-mol	70.91	MW_S, where
70.91 for Cl_2		
Conversion factor from ppm to lb/scf	1.84E-07	CF where
1.840E-07 for Cl_2		

1 Cl_2

a. Concentration, ppm

$$C = \left(\frac{F_t}{V_{m\,std}}\right)\left(\frac{T_{ref}}{520}\right)\left(\frac{1g}{10^3\,mg}\right)\left(\frac{1\,lb}{454\,g}\right)\left(\frac{379.5\,dscf}{lb\cdot mol}\right)\left(\frac{lb\cdot mol}{MW\ g/mol}\right)10^6$$

$$C = \frac{(0.242 \times 528 \times 379.5 \times 1{,}000{,}000)}{(43.1 \times 520 \times 1000 \times 454 \times 70.91)}$$

C = 0.0672 ppm

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, ppm @ 7% O_2

$$C_7 = C\ \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

C_7 = 0.0672 x (20.9 - 7) / (20.9 - 11)

C_7 = 0.0944 ppm @ 7% O_2

c. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

M = (0.067)(1.84E-07)(36,737)(60)

M = 0.0273 lb/hr

d. Mass emission rate, lb/1000 lb steam

$$M' = \frac{M}{S}$$

M' = 0.0273 / 68.3

M' = 4.00E-04 lb/1000 lb steam

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
HYDROGEN FLUORIDE

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-24
Run number:	1		

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Mass of measured compound in sample, mg/sample (at det. limit)	0.0226	F_t
Dry meter volume at standard conditions, dscf	43.100	$V_{m\,std}$
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, 1000 lb/hr	68.3	S
Molecular weight of gaseous species, lb/lb-mol	20.01	MW_S, where
20.01 for HF		
Conversion factor from ppm to lb/scf	5.19E-08	CF where
5.193E-08 for HF		

1 HF

a. Concentration, ppm

$$C = \left(\frac{F_t}{V_{m\,std}}\right)\left(\frac{T_{ref}}{520}\right)\left(\frac{1g}{10^3\,mg}\right)\left(\frac{1\,lb}{454\,g}\right)\left(\frac{379.5\,dscf}{lb\cdot mol}\right)\left(\frac{lb\cdot mol}{MW\ g/mol}\right)10^6$$

$$C = \frac{(0.0226 \times 528 \times 379.5 \times 1{,}000{,}000)}{(43.1 \times 520 \times 1000 \times 454 \times 20.01)}$$

C = 0.0222 ppm

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, ppm @ 7% O_2

$$C_7 = C\ \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

C_7 = 0.0222 x (20.9 - 7) / (20.9 - 11)

C_7 = 0.0312 ppm @ 7% O_2

c. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

M = (0.022)(5.19E-08)(36,737)(60)

M = 0.00255 lb/hr

d. Mass emission rate, lb/1000 lb steam

$$M' = \frac{M}{S}$$

M' = 0.00255 / 68.3

M' = 3.73E-05 lb/1000 lb steam

EXAMPLE CALCULATIONS
HYDROGEN BROMIDE

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-24
Run number:	1		

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Mass of measured compound in sample, mg/sample	0.268	F_t
Dry meter volume at standard conditions, dscf	43.100	$V_{m\,std}$
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, 1000 lb/hr	68.3	S
Molecular weight of gaseous species, lb/lb-mol	80.91	MW_S, where
80.91 for HBr		
Conversion factor from ppm to lb/scf	2.10E-07	CF where
2.100E-07 for HBr		

1 HBr

a. Concentration, ppm

$$C = \left(\frac{F_t}{V_{m\,std}}\right)\left(\frac{T_{ref}}{520}\right)\left(\frac{1g}{10^3\,mg}\right)\left(\frac{1\,lb}{454\,g}\right)\left(\frac{379.5\,dscf}{lb\cdot mol}\right)\left(\frac{lb\cdot mol}{MW\ g/mol}\right)10^6$$

$$C = \frac{(0.268 \times 528 \times 379.5 \times 1{,}000{,}000)}{(43.1 \times 520 \times 1000 \times 454 \times 80.91)}$$

C = 0.0652 ppm

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, ppm @ 7% O_2

$$C_7 = C\ \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

C_7 = 0.0652 x (20.9 - 7) / (20.9 - 11)

C_7 = 0.0916 ppm @ 7% O_2

c. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

M = (0.065)(2.1E-07)(36,737)(60)

M = 0.0302 lb/hr

d. Mass emission rate, lb/1000 lb steam

$$M' = \frac{M}{S}$$

M' = 0.0302 / 68.3

M' = 4.42E-04 lb/1000 lb steam

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
BROMINE

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-24
Run number:	1		

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Mass of measured compound in sample, mg/sample (at det. limit)	0.0345	F_t
Dry meter volume at standard conditions, dscf	43.100	$V_{m\,std}$
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, 1000 lb/hr	68.3	S
Molecular weight of gaseous species, lb/lb-mol	159.81	MW_S, where
159.81 for Br_2		
Conversion factor from ppm to lb/scf	4.15E-07	CF where
4.147E-07 for Br_2		

1 Br_2

a. Concentration, ppm

$$C = \left(\frac{F_t}{V_{m\,std}}\right)\left(\frac{T_{ref}}{520}\right)\left(\frac{1g}{10^3\,mg}\right)\left(\frac{1\,lb}{454\,g}\right)\left(\frac{379.5\,dscf}{lb\cdot mol}\right)\left(\frac{lb\cdot mol}{MW\ g/mol}\right)10^6$$

$$C = \frac{(0.0345 \times 528 \times 379.5 \times 1{,}000{,}000)}{(43.1 \times 520 \times 1000 \times 454 \times 159.81)}$$

C = 0.00425 ppm

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, ppm @ 7% O_2

$$C_7 = C\ \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

C_7 = 0.00425 x (20.9 - 7) / (20.9 - 11)

C_7 = 0.00597 ppm @ 7% O_2

c. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

M = (0.004)(4.15E-07)(36,737)(60)

M = 0.0039 lb/hr

d. Mass emission rate, lb/1000 lb steam

$$M' = \frac{M}{S}$$

M' = 0.0039 / 68.3

M' = 5.71E-05 lb/1000 lb steam

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
AMMONIA BY ION CHROMATOGRAPHY

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-25
Run number:	1		

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Sample volume - total, ml	434.1	S_V
Sample concentration - measured, ppm (same as mg/L)	2.76	C_m
Dry meter volume at standard conditions, dscf	39.072	$V_{m\,std}$
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, 1000 lb/hr	68.3	SR
Molecular weight of gaseous species, lb/lb-mol	17.03	MW_S, where
17.03 for NH_3		
Conversion factor from ppm to lb/scf	4.42E-08	CF where
4.419E-08 for NH_3		

1 NH_3 ION CHROMATOGRAPHY

a. Concentration, ppm

$$C = \frac{(0.049 \times S_v \times C_m)}{V_{mstd} \times \frac{520}{T_{ref}}}$$

$$C = \frac{(0.049 \times 434.1 \times 2.76)}{39.072 \times (520/528)}$$

C = 1.53 ppm

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, ppm @ 7% O_2

$$C_7 = C\ \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

C_7 = 1.53 x (20.9 - 7) / (20.9 - 11)

C_7 = 2.15 ppm @ 7% O_2

c. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

M = (1.53)(4.42E-08)(36,737)(60)

M = 0.149 lb/hr

d. Mass emission rate, lb/1000 lb steam

$$M' = \frac{M}{SR}$$

M' = 0.149 / 68.3

M' = 0.0022 lb/1000 lb steam

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
ALDEHYDES

Project name:	Covanta Marion	**Project number:**	006AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-24
Run number:	1		

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Mass of measured compound in sample, µg/sample (Formaldehyde)	0.83	F_t
Dry meter volume at standard conditions, dscf (measured as 30.031 L)	1.061	$V_{m\,std}$
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, Mlb/hr	68.2	SR
Molecular weight of gaseous species, lb/lb-mol	30.03	MW_S, where
30.03 for Formaldehyde		
Conversion factor from ppm to lb/scf	7.79E-08	CF where
7.793E-08 for Formaldehyde		

1 Formaldehyde

a. Concentration, ppm

$$C = \left(\frac{F_t}{V_{m\,std}}\right)\left(\frac{T_{ref}}{520}\right)\left(\frac{1g}{10^6\,\mu g}\right)\left(\frac{1\,lb}{454\,g}\right)\left(\frac{379.5\,dscf}{lb\cdot mol}\right)\left(\frac{lb\cdot mol}{MW\ g/mol}\right)10^6$$

$$C = \frac{(0.83 \times 528 \times 379.5 \times 1{,}000{,}000)}{(1.061 \times 520 \times 1{,}000{,}000 \times 454 \times 30.03)}$$

C = 0.0221 ppmv

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, ppm @ 7% O_2

$$C_{15} = C\ \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

C_7 = 0.02 x (20.9 - 7) / (20.9 - 11)

C_7 = 0.0311 ppm @ 7% O_2

c. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

M = (0.0221)(7.79E-08)(36,737)(60)

M = 3.80E-03 lb/hr

d. Mass emission rate, lb/Mlb steam

$$M' = \frac{M}{SR}$$

M' = 3.80E-03 / 68.20

M' = 5.57E-05 lb/Mlb steam

MONTROSE AIR QUALITY SERVICES

EXAMPLE CALCULATIONS
VOST EMISSIONS

Project name:	Covanta Marion	**Project number:**	021AS-010935
Computed by:	A Vella	**Calculation date:**	2022-01-26
Run number:	1	**Gaseous Species:**	Acetone

EMISSIONS DATA

Reference temperature, °R	528	T_{ref} = (°F plus 460)
Mass in sample, µg/sample	1.217	m
Standard volume of gas sampled, dscf	2.201	V_{mstd}
Dry stack gas flow rate at standard conditions, dscfm	36,737	Q_{ds}
Stack O_2, % volume dry	11.00	O_2
Steam rate, Mlb/hr	68.1	SR

1 GASEOUS EMISSIONS

a. Concentration, µg/dscm

$$C = \frac{m}{(V_{mstd})} \times \frac{35.315\ ft^3}{1\ m^3}$$

$$C = \frac{(1.217)(35.315)}{2.201}$$

C = 19.5 µg/dscm

Note: The results calculated on these pages may differ slightly from the results presented in the final report. This difference can be attributed to "significant digit round-off errors" common when comparing computer spreadsheets results with those derived from using a calculator.

b. Concentration, µg/dscm at 7% O_2

$$C_7 = (C)\left(\frac{20.9 - 7}{20.9 - \%O_2}\right)$$

C_7 = $\frac{(19.5)(20.9\text{-}7)}{(20.9\ \text{-}\ 11)}$

C_7 = 27.4 µg/dscm @ 7% O_2

c. Concentration, ppb volume dry

$$C' = C \times \left(\frac{T_{ref}}{520}\right)\left(\frac{1g}{10^6\ \mu g}\right)\left(\frac{1\ lb}{454\ g}\right)\left(\frac{1\ m^3}{35.315\ ft^3}\right)\left(\frac{379.5\ dscf}{lb \cdot mol}\right)\left(\frac{lb \cdot mol}{MW\ g/mol}\right)10^9$$

C' = $\frac{(19.5 \times 528 \times 379.5 \times 10\text{^}9)}{(520 \times 10\text{^}6 \times 454 \times 35.315 \times 58.08)}$

C' = 8.07 ppbvd

d. Mass emission rate, lb/hr

$$M = (C)(Q_{ds}) \times \left(\frac{1\ g}{10^6\ \mu g}\right)\left(\frac{1\ lb}{453.6\ g}\right)\left(\frac{1\ m^3}{35.315\ ft^3}\right)(60\ min/hr)$$

M = $\frac{(1.95\text{E+}01)(36{,}737)(60)}{(10\text{^}6)(453.6)(35.315)}$

M = 2.68E-03 lb/hr

e. Mass emission rate, lb/1000 lb steam

$$E = \frac{M}{SR}$$

E = $\frac{2.68\text{E-}03}{68.10}$

E = 3.94E-05 lb/1000 lb steam

Appendix A.12
General Equations

EMISSION CALCULATIONS

1. Volumetric Flow and Isokinetics

   a. Standard sample gas volume, dscf

   $$V_{m\,std} = 17.636 \times (V_m)(Y)\frac{\left(P_{bar} + \frac{\Delta H}{13.6}\right)}{(T_m + 460)}$$

   b. Water vapor volume, scf

   $$V_{w\,std} = (0.04715)(V_{lc})\left(\frac{T_{std} + 460}{528}\right)$$

   c. Moisture content, non-dimensional

   $$B_{ws} = \frac{V_{w\,std}}{(V_{m\,std} + V_{w\,std})}$$

   d. Stack gas molecular weight, lb/lb mole (dry)

   $$MW_{dry} = [0.44(\%CO_2)] + [0.32(\%O_2)] + [0.28(\%N_2)]$$

   e. Stack gas molecular weight, lb/lb mole (wet)

   $$MW_{wet} = \left[MW_{dry}(1 - B_{ws})\right] + [18(B_{ws})]$$

   f. Absolute stack pressure, in Hg

   $$P_s = P_{bar} + \left(\frac{P_{sg}}{13.6}\right)$$

   g. Stack velocity, ft/sec

   $$v_s = (85.49)\left(C_p\right)\left(\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(MW_{wet})}}$$

   h. Actual stack flow rate, acfm

   $$Q = (v_s)(A_s)(60\ min/hr)$$

   i. Standard stack gas flow rate, wscfm

   $$Q_{ws} = (v_s)(A_s)(60\ min/hr)\left(\frac{T_{std} + 460}{T_s + 460}\right)\left(\frac{P_s}{P_{std}}\right)$$

   j. Standard stack gas flow rate, dscfm

   $$Q_{ds} = (v_s)(A_s)(60\ min/hr)(1 - B_{ws})\left(\frac{T_{std} + 460}{T_s + 460}\right)\left(\frac{P_s}{P_{std}}\right)$$

   k. Percent isokinetic

   $$I = \frac{(T_s)(V_{m\,std})(P_{std})(100)}{(T_{std} + 460)(v_s)(\theta)(A_n)(P_s)(60)(1 - B_{ws})}$$

2. Gaseous Emissions

a. Concentration, ppm volume wet (i.e. to calculate wet ppm from dry ppm)

$$C_w = (C)(1 - B_{ws})$$

b. Concentration, ppm @ 3% O_2 dry

$$C_3 = (C)\left[\frac{(20.9 - 3.0)}{(20.9 - \%\ O_2)}\right]$$

c. Concentration, ppm @ 12% CO_2 dry

$$C_{12} = (C)\left(\frac{12.0}{\%\ CO_2}\right)$$

d. Concentration, ppm volume dry (i.e. to calculate dry ppm from wet ppm)

$$C = \left[\frac{C_w}{(1 - B_{ws})}\right]$$

e. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

where,

CF = conversion factor from ppm to lb/scf:

$$CF_{NOx} = 1.194 \times 10^{-7}\left(\frac{lb/scf}{ppm}\right)$$

$$CF_{SO2} = 1.660 \times 10^{-7}\left(\frac{lb/scf}{ppm}\right)$$

$CF_X = CF_{NOX}\left(\frac{MW_X}{MW_{NOX}}\right)$ for other compounds (x)

f. Emission rate, lb/MMBtu

$$E = (C)(CF)(F_d)\left(\frac{20.9}{20.9 - \%\ O_2}\right)$$

g. Mass emission rate, grams/bhp-hr

$$M_j = (M)\left(\frac{453.59\ g/lb}{J}\right)$$

3. Particulate Emissions

   a. Grain loading, gr/dscf

   $$G = (0.0154)\left(\frac{G_m}{V_{m\,std}}\right)$$

   b. Grain loading corrected to 12% CO_2, gr/dscf @ 12% CO_2

   $$G_{12} = (G)\left(\frac{12.0}{\%\ CO_2}\right)$$

   c. Mass emission rate, lb/hr

   $$M = (G)(Q_{ds})\left(\frac{60\ min/hr}{7{,}000\ gr/lb}\right)$$

   d. Emission rate, lb/MMBtu

   $$E = (G)\left(\frac{1\ lb}{7{,}000\ gr}\right)(F_d)\left(\frac{20.9}{20.9 - \%\ O_2}\right)$$

4. Fuel Factor "F"

   a. Choice #1 – use the values for F_d provided in Method 19, Table 19-1
   Choice #2 – if you have fuel ultimate and proximate analysis, calculate F_d (need fuel weight %CHONS, HHV)
   Stoichiometric fuel factor at 68 °F, dscf/MMBtu at 0% O_2:

   $$F_d = \frac{(10^6)[3.64(\%\ H) + 1.53(\%\ C) + 0.14(\%\ N) + 0.57(\%\ S) - 0.46(\%\ O)]}{HHV, Btu/lb}$$

   b. Fuel factor at 60 °F (use if all your volumes and flows are at 60 °F)

   $$F_{d\,60} = F_d\left(\frac{520°R}{528°R}\right)$$

5. Miscellaneous Equations

a. Standard stack gas flow rate, calculated from fuel flow and F factor, dscfm

Note: Q_f and HHV need to be in units of either lb/hr and Btu/lb, or scf/hr and Btu/scf. *Do not mix units!*

(calculation based on stack $\%O_2$)

$$Q_{ds} = (Q_f)(HHV)(10^{-6})(F_d)\left(\frac{20.9}{20.9 - \%\ O_2}\right)/(60\ min/hr)$$

or (calculation based on stack $\%CO_2$ – see EPA Method 19 for values of F_c)

$$Q_{ds} = (Q_f)(HHV)(10^{-6})(F_c)\left(\frac{100}{\%\ CO_2}\right)/(60\ min/hr)$$

b. Destruction efficiency of emission control device, %

$EFF = \left(\frac{C_{in} - C_{out}}{C_{in}}\right)(100\%)$ based on concentrations

or

$EFF = \left(\frac{M_{in} - M_{out}}{M_{in}}\right)(100\%)$ based on mass emission rates

c. Cylinder gas audit, % accuracy

$$A_c = \left(\frac{C_m - C_a}{C_a}\right)(100\%)$$

Nomenclature:

A_c = accuracy of CEMS during cylinder gas audit (CGA), % difference
A_n = nozzle area, in^2 (πr^2), where π = 3.1416 and r = radius (½ diameter) in inches
A_s = stack area, ft^2 (πr^2), where π = 3.1416 and r = radius (½ diameter) in feet
B_{ws} = flue gas moisture content (multiply by 100 for % by volume)
C = concentration of gaseous species, ppm volume dry
C_a = concentration of audit gas, ppm (for CGA, equation 5c)
C_m = concentration measured by CEMS, ppm (for CGA, equation 5c)
C_p = calibration factor for pitot tube, dimensionless
C_w = concentration of gaseous species, ppm volume wet
C_3 = corrected concentration of gaseous species, ppm @ 3% O_2 dry
C_{12} = corrected concentration of gaseous species, ppm @ 12% CO_2 dry
E = mass emission rate, lb/MMBtu
EFF = destruction or removal efficiency of emission control device, % efficiency
F_c = stoichiometric "F" factor of fuel based on CO_2, dscf/MMBtu @ 100% CO_2
F_d = stoichiometric "F" factor of fuel based on O_2, dscf/MMBtu @ 0% O_2
G = particulate matter grain loading, grains/dscf
G_{12} = corrected particulate matter grain loading, grains/dscf @ 12% CO_2
G_m = mass of collected particulate matter, mg
HHV = higher heating value, Btu/cubic foot
I = % isokinetic sampling rate, %
J = brake horsepower, bhp
M_j = mass emission rate of measured species (s), g/hp-hr
M = mass emission rate, lb/hr
MW_{dry} = molecular weight of stack gas, dry basis
MW_{wet} = molecular weight of stack gas, wet basis
MW_s = molecular weight of gaseous species (s), lb/lb mole:

CO:	28.01	(can use 28)	NO_x as NO_2:	46.01	(can use 46)
SO_x as SO_2:	64.06	(can use 64)	Hydrocarbons as C:	12.01	(can use 12)
Hydrocarbons as CH_4:	16.04	(can use 16)	Hydrocarbons as C_3H_8:	44.10	(can use 44)
NH_3:	17.03	(can use 17)			

N_2 = nitrogen content of stack gas, % volume dry
P_{bar} = barometric pressure, in. Hg
P_s = stack absolute pressure, in. Hg
P_{sg} = stack static pressure, inches of water, gauge (iwg)
Q = wet stack gas flow rate at actual conditions, acfm
Q_f = fuel flow rate, scfh or lb/hr (be careful of units)
Q_{ds} = dry stack gas flow rate at standard conditions, dscfm
Q_{ws} = wet stack gas flow rate at standard conditions, wscfm
SV = specific molar volume of an ideal gas at standard conditions, ft^3/lb mole
T_m = meter temperature, °R
T_{std} = reference temperature, °R
T_s = stack gas temperature, °R
v_s = stack gas velocity, ft/sec
V_{lc} = volume of liquid collected in impingers, ml
V_m = dry meter volume uncorrected, acf
$V_{m\ std}$ = dry meter volume corrected to standard conditions, dscf
$V_{w\ std}$ = volume of water vapor at standard conditions, scf
Y = meter calibration coefficient, dimensionless
ΔH = average pressure differential across meter, inches water
ΔP = average velocity head of stack gas, inches water
Θ = sampling time, minutes

APPENDIX B
FACILITY PROCESS DATA

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

HCl Run 1

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 09:37 End of Report: 12/08/2021 10:37 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 09:37	60.4	303	9.77	248.8	0.0	9	156	35	1	9.5	11.5	0.0
12/08/2021 09:38	60.9	303	9.81	247.8	0.0	7	161	39	1	9.0	11.4	0.0
12/08/2021 09:39	61.7	303	9.79	243.3	0.0	7	157	41	1	9.1	11.2	0.0
12/08/2021 09:40	62.0	303	9.78	249.9	0.0	6	162	40	1	9.0	11.1	0.0
12/08/2021 09:41	63.6	303	9.79	246.3	0.0	7	160	35	1	8.3	11.0	0.0
12/08/2021 09:42	65.5	303	9.77	256.9	0.0	6	147	42	0	7.4	9.9	0.0
12/08/2021 09:43	66.8	303	9.79	253.3	0.0	5	160	37	0	7.4	9.9	0.0
12/08/2021 09:44	67.9	303	9.78	244.0	0.0	4	157	41	0	7.3	9.8	0.0
12/08/2021 09:45	69.3	303	9.78	246.9	0.0	4	160	39	0	7.0	9.6	0.0
12/08/2021 09:46	70.8	303	9.75	251.3	0.0	4	143	42	0	6.7	9.4	0.0
12/08/2021 09:47	72.2	303	9.76	253.2	0.0	4	142	42	0	6.8	9.3	0.0
12/08/2021 09:48	72.1	303	9.75	250.7	0.0	4	148	50	0	7.0	9.4	0.0
12/08/2021 09:49	70.5	303	9.76	249.6	0.0	4	161	44	0	8.2	10.1	0.0
12/08/2021 09:50	69.7	303	9.75	243.2	0.0	1	196	39	1	8.3	10.8	0.0
12/08/2021 09:51	69.4	303	9.77	250.9	0.0	3	167	46	0	7.1	10.0	0.0
12/08/2021 09:52	70.0	303	9.77	246.5	0.0	4	153	49	0	7.1	9.7	0.0
12/08/2021 09:53	70.6	303	9.75	249.0	0.0	2	157	49	0	7.0	9.7	0.0
12/08/2021 09:54	70.9	303	9.74	252.0	0.0	3	152	48	0	7.5	9.8	0.0
12/08/2021 09:55	70.6	303	9.75	254.1	0.0	1	171	46	0	8.0	10.2	0.0
12/08/2021 09:56	70.4	303	9.78	252.0	0.0	1	189	44	1	8.2	10.6	0.0
12/08/2021 09:57	69.7	303	9.76	244.2	0.0	1	187	46	1	8.0	10.4	0.0
12/08/2021 09:58	70.0	303	9.76	243.0	0.0	3	190	46	1	8.1	10.5	0.0
12/08/2021 09:59	70.1	303	9.84	245.2	0.0	1	189	44	0	8.4	10.6	0.0
12/08/2021 10:00	69.7	303	9.89	247.5	0.2	1	175	44	0	8.5	10.8	0.0
12/08/2021 10:01	69.9	303	9.82	247.6	0.0	1	172	43	0	8.3	10.7	0.0
12/08/2021 10:02	69.0	303	9.78	249.5	0.0	3	168	46	0	8.2	10.6	0.0
12/08/2021 10:03	68.1	303	9.76	250.0	0.0	4	168	43	0	8.6	10.8	0.0
12/08/2021 10:04	68.3	302	9.77	248.8	0.0	3	165	41	1	8.1	10.7	0.0
12/08/2021 10:05	68.8	302	9.85	249.8	0.0	4	157	44	1	7.6	10.3	0.0
12/08/2021 10:06	69.1	302	9.86	253.1	0.0	3	159	36	0	8.3	10.3	0.0
12/08/2021 10:07	69.2	303	9.84	249.0	0.0	3	159	41	1	8.8	10.9	0.0
12/08/2021 10:08	68.5	303	9.83	250.7	0.0	4	169	43	1	8.8	11.0	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 10:09	67.5	303	9.82	250.6	0.0	6	179	40	0	9.0	11.2	0.0
12/08/2021 10:10	66.7	303	9.81	251.8	0.0	7	172	42	1	8.7	11.1	0.0
12/08/2021 10:11	66.3	303	9.80	253.7	0.0	6	177	41	1	8.8	11.0	0.0
12/08/2021 10:12	66.2	303	9.78	251.3	0.0	4	182	37	0	9.0	11.2	0.0
12/08/2021 10:13	66.5	303	9.74	250.3	0.0	4	170	37	1	8.5	10.9	0.0
12/08/2021 10:14	65.9	304	9.77	252.0	0.0	6	174	36	0	9.0	11.0	0.0
12/08/2021 10:15	65.5	303	9.75	252.1	0.0	6	196		0		11.3	0.0
12/08/2021 10:16	65.1	302	9.73	252.1	0.0	7	176		0		10.7	0.0
12/08/2021 10:17	64.9	303	9.73	250.6	0.0	5	163	39	0	8.9<	10.4	0.0
12/08/2021 10:18	65.1	303	9.71	250.3	0.0	6	160	34	0	9.0	10.8	0.0
12/08/2021 10:19	64.4	302	9.72	246.9	0.0	5	165	34	0	8.2	10.7	0.0
12/08/2021 10:20	65.3	303	9.74	243.1	0.0	4	155	39	0	7.9	10.2	0.0
12/08/2021 10:21	67.2	303	9.74	243.7	0.0	5	153	42	1	7.9	10.2	0.0
12/08/2021 10:22	67.9	303	9.75	252.9	0.0	5	158	42	1	8.0	10.3	0.0
12/08/2021 10:23	69.1	303	9.74	251.2	0.0	4	155	36	0	7.8	10.3	0.0
12/08/2021 10:24	70.7	304	9.73	247.0	0.0	6	148	38	0	7.4	10.0	0.0
12/08/2021 10:25	72.5	304	9.76	247.1	0.0	5	142	45	0	6.8	9.5	0.0
12/08/2021 10:26	72.6	304	9.77	246.5	0.0	4	143	46	0	7.7	9.6	0.0
12/08/2021 10:27	72.0	303	9.76	253.8	0.0	3	152	36	0	7.9	10.2	0.0
12/08/2021 10:28	71.9	304	9.76	248.3	0.0	3	162	37	0	8.1	10.4	0.0
12/08/2021 10:29	71.5	304	9.75	249.4	0.0	3	167	41	0	8.3	10.4	0.0
12/08/2021 10:30	69.4	303	9.74	252.0	0.0	1	183	36	0	8.9	11.0	0.0
12/08/2021 10:31	69.3	303	9.76	243.3	0.0	1	179	40	0	8.1	10.8	0.0
12/08/2021 10:32	68.8	303	9.76	244.5	0.0	3	179	42	0	9.1	10.9	0.0
12/08/2021 10:33	70.1	303	9.79	250.8	0.0	1	178	39	0	8.3	10.9	0.0
12/08/2021 10:34	71.0	303	9.81	252.6	0.0	3	157	43	0	8.2	10.3	0.0
12/08/2021 10:35	70.8	304	9.82	253.0	0.0	1	157	38	1	9.0	10.8	0.0
12/08/2021 10:36	70.1	304	9.79	249.5	0.0	1	163	36	1	9.3	11.3	0.0
12/08/2021 10:37	69.0	304	9.83	250.6	0.0	3	160	37	0	9.3	11.4	0.0
Period Average =	68.3	303	9.78	249.3	0.0	4	165	41	0	8.2	10.5	0.0
Period Max Value =	72.6	304	9.89	256.9	0.2	9	196	50	1	9.5	11.5	0.0
Period Min Value =	60.4	302	9.71	243.0	0.0	1	142	34	0	6.7	9.3	0.0
Period Totals =	4.1690E+3	1.8487E+4	5.9631E+2	1.5209E+4	2.0000E-1	2.3500E+2	1.0062E+4	2.4180E+3	2.0000E+1	4.8270E+2	6.4080E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.3	100.0	98.3	100.0	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

HCl Run 2

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 11:23 End of Report: 12/08/2021 12:23 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 11:23	66.6	304	9.84	243.6	0.0	6	198	24	0	9.4	11.2	0.0
12/08/2021 11:24	67.4	304	9.83	252.7	0.0	7	186	25	0	8.7	11.0	0.0
12/08/2021 11:25	69.6	304	9.80	250.3	0.0	7	168	27	0	8.4	10.7	0.0
12/08/2021 11:26	71.1	304	9.80	250.8	0.0	5	151	30	0	8.1	10.3	0.0
12/08/2021 11:27	71.2	304	9.78	252.1	0.0	5	161	28	0	8.9	10.7	0.0
12/08/2021 11:28	70.2	304	9.77	248.8	0.0	4	176	27	0	9.4	11.2	0.0
12/08/2021 11:29	69.2	304	9.76	251.7	0.0	4	183	25	0	9.3	11.5	0.0
12/08/2021 11:30	68.4	304	9.76	252.0	0.0	6	169	26	0	8.8	11.0	0.0
12/08/2021 11:31	68.0	304	9.79	247.4	0.0	7	160	29	0	8.3	10.8	0.0
12/08/2021 11:32	68.2	304	9.78	242.1	0.0	8	144	32	1	8.3	10.4	0.0
12/08/2021 11:33	68.1	304	9.77	249.7	0.0	7	186	26	0	9.4	11.1	0.0
12/08/2021 11:34	67.1	304	9.79	247.5	0.0	6	205	25	0	9.7	11.6	0.0
12/08/2021 11:35	66.6	304	9.80	244.5	0.0	6	195	27	0	9.3	11.5	0.0
12/08/2021 11:36	67.0	304	9.81	246.2	0.4	7	185	29	0	9.1	11.2	0.0
12/08/2021 11:37	67.2	304	9.92	254.2	0.3	7	169	29	0	9.4	11.3	0.0
12/08/2021 11:38	68.0	304	9.87	252.4	0.0	7	164	28	0	9.1	11.3	0.0
12/08/2021 11:39	68.3	304	9.83	249.0	0.0	7	161	26	0	8.9	11.1	0.0
12/08/2021 11:40	68.1	304	9.79	248.9	0.0	6	161	25	0	8.8	11.0	0.0
12/08/2021 11:41	68.7	304	9.78	250.3	0.0	4	177	22	0	8.7	10.8	0.0
12/08/2021 11:42	68.5	304	9.77	247.5	0.0	4	188	21	0	8.9	11.0	0.0
12/08/2021 11:43	68.4	304	9.80	244.2	0.0	6	197	22	0	8.8	11.0	0.0
12/08/2021 11:44	67.4	304	9.74	248.9	0.3	6	198	24	0	9.1	11.1	0.0
12/08/2021 11:45	66.9	304	9.80	251.2	0.5	6	187	24	0	9.1	11.2	0.0
12/08/2021 11:46	67.1	304	9.78	253.9	0.3	6	170	19	0	8.8	11.1	0.0
12/08/2021 11:47	67.6	304	9.80	245.5	0.7	5	162	18	0	8.5	10.8	0.0
12/08/2021 11:48	68.2	304	9.81	247.7	0.0	5	163	16	0	8.2	10.6	0.0
12/08/2021 11:49	68.0	304	9.78	247.9	0.0	7	158	17	0	8.2	10.5	0.0
12/08/2021 11:50	68.2	304	9.77	253.6	0.0	5	158	17	0	8.4	10.5	0.0
12/08/2021 11:51	68.1	304	9.77	255.0	0.0	7	155	12	0	8.1	10.6	0.0
12/08/2021 11:52	69.0	304	9.81	243.8	0.0	5	143	21	0	7.6	10.2	0.0
12/08/2021 11:53	69.9	304	9.81	252.4	0.0	5	146	20	0	8.0	10.2	0.0
12/08/2021 11:54	71.5	304	9.81	244.5	0.0	4	157	18	0	8.1	10.4	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 11:55	71.4	304	9.77	244.6	0.0	4	160	19	0	8.4	10.5	0.0
12/08/2021 11:56	70.9	304	9.74	249.0	0.0	4	165	19	0	8.4	10.6	0.0
12/08/2021 11:57	71.2	304	9.72	252.5	0.0	3	163	20	0	8.6	10.7	0.0
12/08/2021 11:58	71.3	304	9.72	251.7	0.0	3	182	21	0	8.6	10.8	0.0
12/08/2021 11:59	70.1	304	9.72	246.0	0.0	3	193	20	0	8.9	11.0	0.0
12/08/2021 12:00	69.8	304	9.72	248.4	0.0	3	179	24	0	8.7	11.0	0.0
12/08/2021 12:01	69.0	304	9.94	255.3	0.0	4	172	27	0	8.6	10.7	0.0
12/08/2021 12:02	68.4	304	9.97	250.6	0.0	3	186	21	1	8.6	11.0	0.0
12/08/2021 12:03	68.3	304	9.93	252.4	0.0	3	178	24	0	8.6	10.8	0.0
12/08/2021 12:04	67.0	303	9.88	244.7	0.0	4	174	23	0	8.9	11.0	0.0
12/08/2021 12:05	65.9	303	9.85	251.3	0.0	3	176	23	0	8.8	11.1	0.0
12/08/2021 12:06	65.8	303	9.82	248.4	0.0	3	165	19	0	8.7	11.0	0.0
12/08/2021 12:07	65.6	303	9.78	248.5	0.0	4	163	26	0	8.6	10.9	0.0
12/08/2021 12:08	65.5	303	9.78	245.1	0.0	3	160	27	0	8.7	10.8	0.0
12/08/2021 12:09	64.4	302	9.80	255.5	0.0	4	183	31	0	9.2	11.2	0.0
12/08/2021 12:10	64.3	303	9.77	247.8	0.0	4	178	30	0	9.2	11.2	0.0
12/08/2021 12:11	64.4	303	9.76	253.0	0.0	6	192	25	0	9.9	11.6	0.0
12/08/2021 12:12	64.1	303	9.79	250.3	0.0	6	200	27	0	9.7	11.7	0.0
12/08/2021 12:13	63.3	304	9.76	246.3	0.4	6	197	26	0	9.7	11.8	0.0
12/08/2021 12:14	63.8	304	9.76	250.3	0.5	7	180	26	0	9.4	11.6	0.0
12/08/2021 12:15	64.3	304	9.78	249.5	0.5							0.0
12/08/2021 12:16	65.6	304	9.77	251.8	0.1							0.0
12/08/2021 12:17	66.4	304	9.84	243.0	0.0		165	33	0	9.4<	11.0<	0.0
12/08/2021 12:18	66.8	304	9.80	246.3	0.0	7	164	32	0	9.3	11.0	0.0
12/08/2021 12:19	67.1	304	9.79	251.1	0.0	7	177	29	1	9.3	11.1	0.0
12/08/2021 12:20	68.0	304	9.76	252.4	0.0	8	178	28	0	8.7	11.0	0.0
12/08/2021 12:21	68.9	304	9.76	247.3	0.0	8	172	32	0	8.3	10.6	0.0
12/08/2021 12:22	69.7	304	9.74	249.8	0.0	8	179	33	0	8.2	10.5	0.0
12/08/2021 12:23	70.3	304	9.74	248.6	0.0	7	171	34	0	8.0	10.4	0.0
Period Average =	67.9	304	9.79	249.2	0.1	5	173	25	0	8.8	10.9	0.0
Period Max Value =	71.5	304	9.97	255.5	0.7	8	205	34	1	9.9	11.8	0.0
Period Min Value =	63.3	302	9.72	242.1	0.0	3	143	12	0	7.6	10.2	0.0
Period Totals =	4.1394E+3	1.8534E+4	5.9748E+2	1.5201E+4	4.0000E+0	3.1200E+2	1.0233E+4	1.4580E+3	3.0000E+0	5.1920E+2	6.4550E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	96.7	98.3	98.3	98.3	98.3	98.3	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

HCl Run 3

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 16:28 **End of Report:** 12/08/2021 17:28 **Validation:** Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 16:28	62.1	304	9.86	278.4	0.0	12	154	44	0	9.1	11.7	0.0
12/08/2021 16:29	63.6	304	9.87	282.9	0.0	13	146	46	0	9.1	11.3	0.0
12/08/2021 16:30	66.4	304	9.85	280.0	0.0	14	147	45	0	8.5	11.0	0.0
12/08/2021 16:31	67.3	304	9.86	277.9	0.0	15	145	49	0	8.9	11.0	0.0
12/08/2021 16:32	66.7	304	9.87	278.2	0.0	15	154	45	0	9.4	11.5	0.0
12/08/2021 16:33	66.3	304	9.88	279.4	0.0	17	154	44	0	9.7	11.8	0.0
12/08/2021 16:34	65.8	303	9.92	284.8	0.0	19	147	41	0	8.6	11.4	0.0
12/08/2021 16:35	65.5	302	9.92	290.0	0.0	20	145	43	0	9.1	11.2	0.0
12/08/2021 16:36	64.9	303	9.85	284.3	0.0	18	150	41	0	9.5	11.5	0.0
12/08/2021 16:37	64.5	303	9.80	288.2	0.0	21	163	39	0	10.2	12.1	0.0
12/08/2021 16:38	64.6	304	9.77	281.1	0.0	18	154	37	0	9.7	11.9	0.0
12/08/2021 16:39	65.0	304	9.73	283.0	0.0	20	149	34	0	9.7	12.0	0.0
12/08/2021 16:40	66.9	305	9.67	280.0	0.0	18	127	46	0	8.0	10.6	0.0
12/08/2021 16:41	65.9	305	9.79	282.0	0.0	16	143	41	0	9.8	11.5	0.0
12/08/2021 16:42	64.7	305	9.85	276.9	0.0	13	165	32	0	10.2	12.1	0.0
12/08/2021 16:43	63.2	305	9.88	279.8	0.0	14	179	29	0	10.2	12.3	0.0
12/08/2021 16:44	63.6	305	9.88	279.7	0.0	19	157	28	0	8.6	11.3	0.0
12/08/2021 16:45	65.5	306	9.83	279.1	0.0	15	142	33	0	8.1	10.7	0.0
12/08/2021 16:46	66.6	306	9.81	285.6	0.0	15	137	36	0	7.9	10.1	0.0
12/08/2021 16:47	65.6	306	9.82	285.6	0.0	16	165	32	0	9.6	11.3	0.0
12/08/2021 16:48	63.6	305	9.90	283.5	0.0	16	200	25	0	9.9	12.1	0.0
12/08/2021 16:49	62.9	305	9.81	284.3	0.0	17	197	26	0	9.3	11.7	0.0
12/08/2021 16:50	64.6	305	9.84	290.2	0.1	17	183	28	0	8.3	11.1	0.0
12/08/2021 16:51	67.5	306	9.96	292.0	0.0	15	145	39	0	6.7	9.8	0.0
12/08/2021 16:52	68.0	306	9.90	282.5	0.0	11	133	42	0	7.9	9.9	0.0
12/08/2021 16:53	68.6	305	9.90	277.4	0.0	13	163	34	0	8.7	10.9	0.0
12/08/2021 16:54	66.6	305	9.93	280.4	0.0	14	163	33	0	9.0	11.2	0.0
12/08/2021 16:55	64.7	305	9.88	280.0	0.0	12	171	29	0	9.6	11.7	0.0
12/08/2021 16:56	64.6	305	9.85	281.3	0.0	13	169	30	0	8.7	11.4	0.0
12/08/2021 16:57	64.6	305	9.85	283.8	0.0	12	149	34	0	7.7	10.6	0.0
12/08/2021 16:58	65.6	305	9.83	287.4	0.0	10	137	38	0	7.8	10.2	0.0
12/08/2021 16:59	67.7	305	9.81	288.5	0.0	10	141	38	0	7.6	10.3	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 17:00	70.6	304	9.78	290.3	0.0	7	139	42	0	6.7	9.7	0.0
12/08/2021 17:01	72.3	304	9.78	289.9	0.0	6	132	49	0	7.0	9.5	0.0
12/08/2021 17:02	71.9	304	9.76	291.7	0.0	5	136	46	0	7.8	10.1	0.0
12/08/2021 17:03	69.1	304	9.78	289.3	0.0	6	152	37	0	8.7	10.9	0.0
12/08/2021 17:04	67.7	303	9.79	287.4	0.0	6	163	33	0	8.4	11.0	0.0
12/08/2021 17:05	68.0	303	9.77	291.3	0.0	8	145	36	0	7.6	10.4	0.0
12/08/2021 17:06	67.5	303	9.78	291.1	0.0	8	145	36	0	7.5	10.2	0.0
12/08/2021 17:07	68.4	303	9.77	292.6	0.0	6	144	37	0	7.5	10.1	0.0
12/08/2021 17:08	68.8	303	9.77	294.0	0.0	6	142	36	0	7.2	9.9	0.0
12/08/2021 17:09	69.2	303	9.80	285.9	0.0	6	141	39	0	7.0	9.8	0.0
12/08/2021 17:10	69.8	303	9.85	278.0	0.0	6	141	41	0	7.5	9.9	0.0
12/08/2021 17:11	68.6	303	9.80	281.1	0.0	7	160	38	0	8.0	10.4	0.0
12/08/2021 17:12	68.1	303	9.80	285.3	0.0	5	165	38	0	7.7	10.5	0.0
12/08/2021 17:13	67.2	303	9.83	287.7	0.0	5	158	39	0	7.4	10.1	0.0
12/08/2021 17:14	67.5	303	9.89	283.8	0.0	7	154	35	0	7.4	10.2	0.0
12/08/2021 17:15	68.2	303	9.88	284.5	0.0	6	141		0		9.8	0.0
12/08/2021 17:16	69.3	303	9.81	281.4	0.0	5	136		0		9.7	0.0
12/08/2021 17:17	69.2	303	9.77	287.5	0.0	4	136	38	0	8.0 <	9.9	0.0
12/08/2021 17:18	67.2	302	9.75	239.1	0.0	4	152	38	0	8.7	10.5	0.0
12/08/2021 17:19	67.4	304	9.74	282.6	0.0	4	164	36	0	8.3	10.6	0.0
12/08/2021 17:20	66.0	303	9.89	276.8	0.0	7	164	35	0	8.0	10.5	0.0
12/08/2021 17:21	64.9	303	10.02	281.0	0.0	5	159	34	0	8.2	10.6	0.0
12/08/2021 17:22	64.9	302	10.03	281.0	0.0	5	151	32	0	7.8	10.5	0.0
12/08/2021 17:23	65.1	301	9.98	283.2	0.0	6	125	34	0	6.8	9.9	0.0
12/08/2021 17:24	65.7	302	9.91	283.1	0.0	7	128	35	0	8.1	10.3	0.0
12/08/2021 17:25	67.7	303	9.96	285.8	0.0	9	136	32	0	7.5	10.2	0.0
12/08/2021 17:26	68.5	304	9.92	282.3	0.0	10	129	34	0	7.4	9.9	0.0
12/08/2021 17:27	68.5	305	10.02	278.7	0.0	9	141	32	0	7.9	10.3	0.0
12/08/2021 17:28	68.3	306	10.01	281.1	0.0	8	146	32	0	8.0	10.4	0.0
Period Average =	66.7	304	9.85	283.2	0.0	11	151	37	0	8.4	10.7	0.0
Period Max Value =	72.3	306	10.03	294.0	0.1	21	200	49	0	10.2	12.3	0.0
Period Min Value =	62.1	301	9.67	239.1	0.0	4	125	25	0	6.7	9.5	0.0
Period Totals =	4.0693E+3	1.8541E+4	6.0081E+2	1.7275E+4	1.0000E-1	6.7100E+2	9.1990E+3	2.1750E+3	0.0000E+0	4.9320E+2	6.5500E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.3	100.0	98.3	100.0	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

Ammonia Run 1

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 09:37 End of Report: 12/08/2021 10:37 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 09:37	60.4	303	9.77	248.8	0.0	9	156	35	1	9.5	11.5	0.0
12/08/2021 09:38	60.9	303	9.81	247.8	0.0	7	161	39	1	9.0	11.4	0.0
12/08/2021 09:39	61.7	303	9.79	243.3	0.0	7	157	41	1	9.1	11.2	0.0
12/08/2021 09:40	62.0	303	9.78	249.9	0.0	6	162	40	1	9.0	11.1	0.0
12/08/2021 09:41	63.6	303	9.79	246.3	0.0	7	160	35	1	8.3	11.0	0.0
12/08/2021 09:42	65.5	303	9.77	256.9	0.0	6	147	42	0	7.4	9.9	0.0
12/08/2021 09:43	66.8	303	9.79	253.3	0.0	5	160	37	0	7.4	9.9	0.0
12/08/2021 09:44	67.9	303	9.78	244.0	0.0	4	157	41	0	7.3	9.8	0.0
12/08/2021 09:45	69.3	303	9.78	246.9	0.0	4	160	39	0	7.0	9.6	0.0
12/08/2021 09:46	70.8	303	9.75	251.3	0.0	4	143	42	0	6.7	9.4	0.0
12/08/2021 09:47	72.2	303	9.76	253.2	0.0	4	142	42	0	6.8	9.3	0.0
12/08/2021 09:48	72.1	303	9.75	250.7	0.0	4	148	50	0	7.0	9.4	0.0
12/08/2021 09:49	70.5	303	9.76	249.6	0.0	4	161	44	0	8.2	10.1	0.0
12/08/2021 09:50	69.7	303	9.75	243.2	0.0	1	196	39	1	8.3	10.8	0.0
12/08/2021 09:51	69.4	303	9.77	250.9	0.0	3	167	46	0	7.1	10.0	0.0
12/08/2021 09:52	70.0	303	9.77	246.5	0.0	4	153	49	0	7.1	9.7	0.0
12/08/2021 09:53	70.6	303	9.75	249.0	0.0	2	157	49	0	7.0	9.7	0.0
12/08/2021 09:54	70.9	303	9.74	252.0	0.0	3	152	48	0	7.5	9.8	0.0
12/08/2021 09:55	70.6	303	9.75	254.1	0.0	1	171	46	0	8.0	10.2	0.0
12/08/2021 09:56	70.4	303	9.78	252.0	0.0	1	189	44	1	8.2	10.6	0.0
12/08/2021 09:57	69.7	303	9.76	244.2	0.0	1	187	46	1	8.0	10.4	0.0
12/08/2021 09:58	70.0	303	9.76	243.0	0.0	3	190	46	1	8.1	10.5	0.0
12/08/2021 09:59	70.1	303	9.84	245.2	0.0	1	189	44	0	8.4	10.6	0.0
12/08/2021 10:00	69.7	303	9.89	247.5	0.2	1	175	44	0	8.5	10.8	0.0
12/08/2021 10:01	69.9	303	9.82	247.6	0.0	1	172	43	0	8.3	10.7	0.0
12/08/2021 10:02	69.0	303	9.78	249.5	0.0	3	168	46	0	8.2	10.6	0.0
12/08/2021 10:03	68.1	303	9.76	250.0	0.0	4	168	43	0	8.6	10.8	0.0
12/08/2021 10:04	68.3	302	9.77	248.8	0.0	3	165	41	1	8.1	10.7	0.0
12/08/2021 10:05	68.8	302	9.85	249.8	0.0	4	157	44	1	7.6	10.3	0.0
12/08/2021 10:06	69.1	302	9.86	253.1	0.0	3	159	36	0	8.3	10.3	0.0
12/08/2021 10:07	69.2	303	9.84	249.0	0.0	3	159	41	1	8.8	10.9	0.0
12/08/2021 10:08	68.5	303	9.83	250.7	0.0	4	169	43	1	8.8	11.0	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 10:09	67.5	303	9.82	250.6	0.0	6	179	40	0	9.0	11.2	0.0
12/08/2021 10:10	66.7	303	9.81	251.8	0.0	7	172	42	1	8.7	11.1	0.0
12/08/2021 10:11	66.3	303	9.80	253.7	0.0	6	177	41	1	8.8	11.0	0.0
12/08/2021 10:12	66.2	303	9.78	251.3	0.0	4	182	37	0	9.0	11.2	0.0
12/08/2021 10:13	66.5	303	9.74	250.3	0.0	4	170	37	1	8.5	10.9	0.0
12/08/2021 10:14	65.9	304	9.77	252.0	0.0	6	174	36	0	9.0	11.0	0.0
12/08/2021 10:15	65.5	303	9.75	252.1	0.0	6	196		0		11.3	0.0
12/08/2021 10:16	65.1	302	9.73	252.1	0.0	7	176		0		10.7	0.0
12/08/2021 10:17	64.9	303	9.73	250.6	0.0	5	163	39	0	8.9<	10.4	0.0
12/08/2021 10:18	65.1	303	9.71	250.3	0.0	6	160	34	0	9.0	10.8	0.0
12/08/2021 10:19	64.4	302	9.72	246.9	0.0	5	165	34	0	8.2	10.7	0.0
12/08/2021 10:20	65.3	303	9.74	243.1	0.0	4	155	39	0	7.9	10.2	0.0
12/08/2021 10:21	67.2	303	9.74	243.7	0.0	5	153	42	1	7.9	10.2	0.0
12/08/2021 10:22	67.9	303	9.75	252.9	0.0	5	158	42	1	8.0	10.3	0.0
12/08/2021 10:23	69.1	303	9.74	251.2	0.0	4	155	36	0	7.8	10.3	0.0
12/08/2021 10:24	70.7	304	9.73	247.0	0.0	6	148	38	0	7.4	10.0	0.0
12/08/2021 10:25	72.5	304	9.76	247.1	0.0	5	142	45	0	6.8	9.5	0.0
12/08/2021 10:26	72.6	304	9.77	246.5	0.0	4	143	46	0	7.7	9.6	0.0
12/08/2021 10:27	72.0	303	9.76	253.8	0.0	3	152	36	0	7.9	10.2	0.0
12/08/2021 10:28	71.9	304	9.76	248.3	0.0	3	162	37	0	8.1	10.4	0.0
12/08/2021 10:29	71.5	304	9.75	249.4	0.0	3	167	41	0	8.3	10.4	0.0
12/08/2021 10:30	69.4	303	9.74	252.0	0.0	1	183	36	0	8.9	11.0	0.0
12/08/2021 10:31	69.3	303	9.76	243.3	0.0	1	179	40	0	8.1	10.8	0.0
12/08/2021 10:32	68.8	303	9.76	244.5	0.0	3	179	42	0	9.1	10.9	0.0
12/08/2021 10:33	70.1	303	9.79	250.8	0.0	1	178	39	0	8.3	10.9	0.0
12/08/2021 10:34	71.0	303	9.81	252.6	0.0	3	157	43	0	8.2	10.3	0.0
12/08/2021 10:35	70.8	304	9.82	253.0	0.0	1	157	38	1	9.0	10.8	0.0
12/08/2021 10:36	70.1	304	9.79	249.5	0.0	1	163	36	1	9.3	11.3	0.0
12/08/2021 10:37	69.0	304	9.83	250.6	0.0	3	160	37	0	9.3	11.4	0.0
Period Average =	68.3	303	9.78	249.3	0.0	4	165	41	0	8.2	10.5	0.0
Period Max Value =	72.6	304	9.89	256.9	0.2	9	196	50	1	9.5	11.5	0.0
Period Min Value =	60.4	302	9.71	243.0	0.0	1	142	34	0	6.7	9.3	0.0
Period Totals =	4.1690E+3	1.8487E+4	5.9631E+2	1.5209E+4	2.0000E-1	2.3500E+2	1.0062E+4	2.4180E+3	2.0000E+1	4.8270E+2	6.4080E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.3	100.0	98.3	100.0	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

Ammonia Run 2

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 11:23 End of Report: 12/08/2021 12:23 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 11:23	66.6	304	9.84	243.6	0.0	6	198	24	0	9.4	11.2	0.0
12/08/2021 11:24	67.4	304	9.83	252.7	0.0	7	186	25	0	8.7	11.0	0.0
12/08/2021 11:25	69.6	304	9.80	250.3	0.0	7	168	27	0	8.4	10.7	0.0
12/08/2021 11:26	71.1	304	9.80	250.8	0.0	5	151	30	0	8.1	10.3	0.0
12/08/2021 11:27	71.2	304	9.78	252.1	0.0	5	161	28	0	8.9	10.7	0.0
12/08/2021 11:28	70.2	304	9.77	248.8	0.0	4	176	27	0	9.4	11.2	0.0
12/08/2021 11:29	69.2	304	9.76	251.7	0.0	4	183	25	0	9.3	11.5	0.0
12/08/2021 11:30	68.4	304	9.76	252.0	0.0	6	169	26	0	8.8	11.0	0.0
12/08/2021 11:31	68.0	304	9.79	247.4	0.0	7	160	29	0	8.3	10.8	0.0
12/08/2021 11:32	68.2	304	9.78	242.1	0.0	8	144	32	1	8.3	10.4	0.0
12/08/2021 11:33	68.1	304	9.77	249.7	0.0	7	186	26	0	9.4	11.1	0.0
12/08/2021 11:34	67.1	304	9.79	247.5	0.0	6	205	25	0	9.7	11.6	0.0
12/08/2021 11:35	66.6	304	9.80	244.5	0.0	6	195	27	0	9.3	11.5	0.0
12/08/2021 11:36	67.0	304	9.81	246.2	0.4	7	185	29	0	9.1	11.2	0.0
12/08/2021 11:37	67.2	304	9.92	254.2	0.3	7	169	29	0	9.4	11.3	0.0
12/08/2021 11:38	68.0	304	9.87	252.4	0.0	7	164	28	0	9.1	11.3	0.0
12/08/2021 11:39	68.3	304	9.83	249.0	0.0	7	161	26	0	8.9	11.1	0.0
12/08/2021 11:40	68.1	304	9.79	248.9	0.0	6	161	25	0	8.8	11.0	0.0
12/08/2021 11:41	68.7	304	9.78	250.3	0.0	4	177	22	0	8.7	10.8	0.0
12/08/2021 11:42	68.5	304	9.77	247.5	0.0	4	188	21	0	8.9	11.0	0.0
12/08/2021 11:43	68.4	304	9.80	244.2	0.0	6	197	22	0	8.8	11.0	0.0
12/08/2021 11:44	67.4	304	9.74	248.9	0.3	6	198	24	0	9.1	11.1	0.0
12/08/2021 11:45	66.9	304	9.80	251.2	0.5	6	187	24	0	9.1	11.2	0.0
12/08/2021 11:46	67.1	304	9.78	253.9	0.3	6	170	19	0	8.8	11.1	0.0
12/08/2021 11:47	67.6	304	9.80	245.5	0.7	5	162	18	0	8.5	10.8	0.0
12/08/2021 11:48	68.2	304	9.81	247.7	0.0	5	163	16	0	8.2	10.6	0.0
12/08/2021 11:49	68.0	304	9.78	247.9	0.0	7	158	17	0	8.2	10.5	0.0
12/08/2021 11:50	68.2	304	9.77	253.6	0.0	5	158	17	0	8.4	10.5	0.0
12/08/2021 11:51	68.1	304	9.77	255.0	0.0	7	155	12	0	8.1	10.6	0.0
12/08/2021 11:52	69.0	304	9.81	243.8	0.0	5	143	21	0	7.6	10.2	0.0
12/08/2021 11:53	69.9	304	9.81	252.4	0.0	5	146	20	0	8.0	10.2	0.0
12/08/2021 11:54	71.5	304	9.81	244.5	0.0	4	157	18	0	8.1	10.4	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 11:55	71.4	304	9.77	244.6	0.0	4	160	19	0	8.4	10.5	0.0
12/08/2021 11:56	70.9	304	9.74	249.0	0.0	4	165	19	0	8.4	10.6	0.0
12/08/2021 11:57	71.2	304	9.72	252.5	0.0	3	163	20	0	8.6	10.7	0.0
12/08/2021 11:58	71.3	304	9.72	251.7	0.0	3	182	21	0	8.6	10.8	0.0
12/08/2021 11:59	70.1	304	9.72	246.0	0.0	3	193	20	0	8.9	11.0	0.0
12/08/2021 12:00	69.8	304	9.72	248.4	0.0	3	179	24	0	8.7	11.0	0.0
12/08/2021 12:01	69.0	304	9.94	255.3	0.0	4	172	27	0	8.6	10.7	0.0
12/08/2021 12:02	68.4	304	9.97	250.6	0.0	3	186	21	1	8.6	11.0	0.0
12/08/2021 12:03	68.3	304	9.93	252.4	0.0	3	178	24	0	8.6	10.8	0.0
12/08/2021 12:04	67.0	303	9.88	244.7	0.0	4	174	23	0	8.9	11.0	0.0
12/08/2021 12:05	65.9	303	9.85	251.3	0.0	3	176	23	0	8.8	11.1	0.0
12/08/2021 12:06	65.8	303	9.82	248.4	0.0	3	165	19	0	8.7	11.0	0.0
12/08/2021 12:07	65.6	303	9.78	248.5	0.0	4	163	26	0	8.6	10.9	0.0
12/08/2021 12:08	65.5	303	9.78	245.1	0.0	3	160	27	0	8.7	10.8	0.0
12/08/2021 12:09	64.4	302	9.80	255.5	0.0	4	183	31	0	9.2	11.2	0.0
12/08/2021 12:10	64.3	303	9.77	247.8	0.0	4	178	30	0	9.2	11.2	0.0
12/08/2021 12:11	64.4	303	9.76	253.0	0.0	6	192	25	0	9.9	11.6	0.0
12/08/2021 12:12	64.1	303	9.79	250.3	0.0	6	200	27	0	9.7	11.7	0.0
12/08/2021 12:13	63.3	304	9.76	246.3	0.4	6	197	26	0	9.7	11.8	0.0
12/08/2021 12:14	63.8	304	9.76	250.3	0.5	7	180	26	0	9.4	11.6	0.0
12/08/2021 12:15	64.3	304	9.78	249.5	0.5							0.0
12/08/2021 12:16	65.6	304	9.77	251.8	0.1							0.0
12/08/2021 12:17	66.4	304	9.84	243.0	0.0		165	33	0	9.4<	11.0<	0.0
12/08/2021 12:18	66.8	304	9.80	246.3	0.0	7	164	32	0	9.3	11.0	0.0
12/08/2021 12:19	67.1	304	9.79	251.1	0.0	7	177	29	1	9.3	11.1	0.0
12/08/2021 12:20	68.0	304	9.76	252.4	0.0	8	178	28	0	8.7	11.0	0.0
12/08/2021 12:21	68.9	304	9.76	247.3	0.0	8	172	32	0	8.3	10.6	0.0
12/08/2021 12:22	69.7	304	9.74	249.8	0.0	8	179	33	0	8.2	10.5	0.0
12/08/2021 12:23	70.3	304	9.74	248.6	0.0	7	171	34	0	8.0	10.4	0.0
Period Average =	67.9	304	9.79	249.2	0.1	5	173	25	0	8.8	10.9	0.0
Period Max Value =	71.5	304	9.97	255.5	0.7	8	205	34	1	9.9	11.8	0.0
Period Min Value =	63.3	302	9.72	242.1	0.0	3	143	12	0	7.6	10.2	0.0
Period Totals =	4.1394E+3	1.8534E+4	5.9748E+2	1.5201E+4	4.0000E+0	3.1200E+2	1.0233E+4	1.4580E+3	3.0000E+0	5.1920E+2	6.4550E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	96.7	98.3	98.3	98.3	98.3	98.3	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

Ammonia Run 3

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 13:13 End of Report: 12/08/2021 14:13 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 13:13	70.1	311	9.78	259.1	0.0	7	180	241	0	8.3	10.9	0.0
12/08/2021 13:14	69.9	311	9.76	254.2	0.0	9	169	318	6	8.3	10.5	0.0
12/08/2021 13:15	70.2	311	9.77	244.3	0.0	9	167		18		10.5	0.0
12/08/2021 13:16	69.5	311	9.74	243.7	0.0	11	150		24		10.5	0.0
12/08/2021 13:17	68.8	311	9.73	245.0	0.0	10	156	328	29	9.1<	11.0	0.0
12/08/2021 13:18	69.3	311	9.73	254.9	0.0	11	158	364	38	8.7	10.8	0.0
12/08/2021 13:19	69.6	311	9.73	257.3	0.0	13	148	425	47	8.1	10.4	0.0
12/08/2021 13:20	69.4	310	9.87	253.8	0.0	12	136	462	58	8.3	10.4	0.0
12/08/2021 13:21	67.6	310	9.94	252.6	0.0	17	148	380	67	8.7	10.9	0.0
12/08/2021 13:22	66.4	310	9.92	248.0	0.0	17	154	426	51	8.6	10.9	0.0
12/08/2021 13:23	64.7	309	9.87	246.4	0.0	14	156	381	51	8.9	11.1	0.0
12/08/2021 13:24	63.1	309	9.82	241.4	0.0	11	163	404	45	9.0	11.2	0.0
12/08/2021 13:25	62.4	309	9.77	242.2	0.0	10	159	352	47	9.3	11.4	0.0
12/08/2021 13:26	61.6	309	9.78	247.6	0.0	13	150	351	41	9.3	11.5	0.0
12/08/2021 13:27	61.1	308	9.76	257.1	0.0	13	151	357	38	9.1	11.4	0.0
12/08/2021 13:28	60.4	306	9.75	249.5	0.0	15	149	341	37	9.4	11.6	0.0
12/08/2021 13:29	60.9	306	9.77	250.4	0.0	13	156	354	34	8.5	11.5	0.0
12/08/2021 13:30	62.3	306	9.78	251.4	0.0	16	137	397	31	8.6	10.6	0.0
12/08/2021 13:31	62.5	307	9.73	248.8	0.0	17	166	370	37	9.1	11.1	0.0
12/08/2021 13:32	61.9	306	9.76	246.9	0.0	19	162	339	35	9.0	11.3	0.0
12/08/2021 13:33	61.8	307	9.77	244.7	0.0	19	169	299	31	9.1	11.2	0.0
12/08/2021 13:34	62.4	308	9.76	246.8	0.0	18	166	240	30	8.7	11.0	0.0
12/08/2021 13:35	63.6	310	9.76	247.2	0.0	18	157	231	22	8.3	10.7	0.0
12/08/2021 13:36	65.6	311	9.76	248.2	0.0	17	143	240	18	7.7	10.2	0.0
12/08/2021 13:37	66.4	311	9.78	246.6	0.0	13	152	215	16	8.2	10.2	0.0
12/08/2021 13:38	66.9	312	9.80	247.0	0.0	13	184	184	11	8.2	10.5	0.0
12/08/2021 13:39	66.9	312	9.75	249.4	0.0	16	182	181	9	8.7	10.7	0.0
12/08/2021 13:40	66.3	312	9.77	251.9	0.0	21	184	163	7	8.5	10.9	0.0
12/08/2021 13:41	65.2	312	9.76	254.2	0.0	18	178	167	5	8.5	10.8	0.0
12/08/2021 13:42	63.7	312	9.75	255.8	0.0	17	193	162	5	9.0	11.0	0.0
12/08/2021 13:43	63.0	311	9.78	254.0	0.0	17	185	155	4	8.7	11.0	0.0
12/08/2021 13:44	63.5	311	9.78	251.9	0.1	18	179	155	3	8.3	10.9	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 13:45	64.0	311	9.76	250.2	0.0	16	159	169	3	8.1	10.5	0.0
12/08/2021 13:46	65.7	311	9.78	245.6	0.0	13	139	152	3	8.0	10.5	0.0
12/08/2021 13:47	66.5	312	9.85	251.1	0.0	10	147	137	2	7.7	10.2	0.0
12/08/2021 13:48	65.9	312	9.82	246.7	0.0	9	157	137	2	8.3	10.3	0.0
12/08/2021 13:49	64.8	311	9.81	249.5	0.0	12	162	116	1	8.6	10.9	0.0
12/08/2021 13:50	63.5	311	9.84	248.7	0.0	13	167	105	1	8.8	10.9	0.0
12/08/2021 13:51	62.5	311	9.83	250.5	0.0	11	160	87	0	8.7	11.1	0.0
12/08/2021 13:52	62.2	311	9.79	248.1	0.0	11	169	88	0	8.3	10.8	0.0
12/08/2021 13:53	61.5	310	9.83	243.5	0.0	11	166	83	0	8.2	10.6	0.0
12/08/2021 13:54	63.4	309	9.81	249.5	0.0	8	153	84	0	7.2	10.0	0.0
12/08/2021 13:55	66.4	310	9.76	251.1	0.0	8	151	86	0	7.5	9.9	0.0
12/08/2021 13:56	69.5	311	9.79	251.6	0.0	10	150	86	0	6.6	9.6	0.0
12/08/2021 13:57	70.8	312	9.76	251.4	0.0	8	126	105	0	6.7	9.0	0.0
12/08/2021 13:58	71.0	313	9.74	248.1	0.0	9	162	80	0	8.1	10.2	0.0
12/08/2021 13:59	71.7	314	9.71	251.8	0.0	11	171	79	0	7.9	10.3	0.0
12/08/2021 14:00	72.3	315	9.60	251.0	0.0	12	155	90	0	7.7	10.1	0.0
12/08/2021 14:01	71.8	315	9.72	252.0	0.0	12	149	93	0	7.8	10.1	0.0
12/08/2021 14:02	71.9	316	9.79	248.8	0.0	13	142	93	1	8.0	10.2	0.0
12/08/2021 14:03	71.8	316	9.80	248.3	0.0	12	139	92	1	8.2	10.4	0.0
12/08/2021 14:04	70.0	315	9.77	249.4	0.0	11	151	86	1	8.9	10.8	0.0
12/08/2021 14:05	70.1	315	9.80	247.1	0.0	11	164	79	1	8.3	10.9	0.0
12/08/2021 14:06	71.8	315	9.79	244.7	0.0	14	151	87	0	7.8	10.2	0.0
12/08/2021 14:07	72.0	315	9.78	247.4	0.0	12	150	85	0	8.2	10.3	0.0
12/08/2021 14:08	71.3	315	9.79	246.7	0.0	11	149	80	0	8.7	10.7	0.0
12/08/2021 14:09	71.1	315	9.80	245.6	0.0	10	153	76	0	8.7	11.0	0.0
12/08/2021 14:10	70.6	315	9.81	245.4	0.0	12	147	79	0	8.1	10.5	0.0
12/08/2021 14:11	70.3	315	9.79	246.2	0.0	12	145	75	0	8.4	10.6	0.0
12/08/2021 14:12	69.1	314	9.80	253.8	0.0	12	158	71	0	8.6	10.8	0.0
12/08/2021 14:13	69.1	314	9.81	255.9	0.0	11	155	78	0	8.4	10.7	0.0
Period Average =	66.7	311	9.78	249.4	0.0	13	158	199	15	8.4	10.7	0.0
Period Max Value =	72.3	316	9.94	259.1	0.1	21	193	462	67	9.4	11.6	0.0
Period Min Value =	60.4	306	9.60	241.4	0.0	7	126	71	0	6.6	9.0	0.0
Period Totals =	4.0696E+3	1.8990E+4	5.9671E+2	1.5212E+4	1.0000E-1	7.8700E+2	9.6340E+3	1.1740E+4	9.1100E+2	4.9470E+2	6.5070E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.3	100.0	98.3	100.0	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

VOC Run 1

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 09:37:00 End of Report: 12/08/2021 12:09:00 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 09:37:00	60.4	303	9.77	248.8	0.0	9	156	35	1	9.5	11.5	0.0
12/08/2021 09:38:00	60.9	303	9.81	247.8	0.0	7	161	39	1	9.0	11.4	0.0
12/08/2021 09:39:00	61.7	303	9.79	243.3	0.0	7	157	41	1	9.1	11.2	0.0
12/08/2021 09:40:00	62.0	303	9.78	249.9	0.0	6	162	40	1	9.0	11.1	0.0
12/08/2021 09:41:00	63.6	303	9.79	246.3	0.0	7	160	35	1	8.3	11.0	0.0
12/08/2021 09:42:00	65.5	303	9.77	256.9	0.0	6	147	42	0	7.4	9.9	0.0
12/08/2021 09:43:00	66.8	303	9.79	253.3	0.0	5	160	37	0	7.4	9.9	0.0
12/08/2021 09:44:00	67.9	303	9.78	244.0	0.0	4	157	41	0	7.3	9.8	0.0
12/08/2021 09:45:00	69.3	303	9.78	246.9	0.0	4	160	39	0	7.0	9.6	0.0
12/08/2021 09:46:00	70.8	303	9.75	251.3	0.0	4	143	42	0	6.7	9.4	0.0
12/08/2021 09:47:00	72.2	303	9.76	253.2	0.0	4	142	42	0	6.8	9.3	0.0
12/08/2021 09:48:00	72.1	303	9.75	250.7	0.0	4	148	50	0	7.0	9.4	0.0
12/08/2021 09:49:00	70.5	303	9.76	249.6	0.0	4	161	44	0	8.2	10.1	0.0
12/08/2021 09:50:00	69.7	303	9.75	243.2	0.0	1	196	39	1	8.3	10.8	0.0
12/08/2021 09:51:00	69.4	303	9.77	250.9	0.0	3	167	46	0	7.1	10.0	0.0
12/08/2021 09:52:00	70.0	303	9.77	246.5	0.0	4	153	49	0	7.1	9.7	0.0
12/08/2021 09:53:00	70.6	303	9.75	249.0	0.0	2	157	49	0	7.0	9.7	0.0
12/08/2021 09:54:00	70.9	303	9.74	252.0	0.0	3	152	48	0	7.5	9.8	0.0
12/08/2021 09:55:00	70.6	303	9.75	254.1	0.0	1	171	46	0	8.0	10.2	0.0
12/08/2021 09:56:00	70.4	303	9.78	252.0	0.0	1	189	44	1	8.2	10.6	0.0
12/08/2021 09:57:00	69.7	303	9.76	244.2	0.0	1	187	46	1	8.0	10.4	0.0
12/08/2021 09:58:00	70.0	303	9.76	243.0	0.0	3	190	46	1	8.1	10.5	0.0
12/08/2021 09:59:00	70.1	303	9.84	245.2	0.0	1	189	44	0	8.4	10.6	0.0
12/08/2021 10:00:00	69.7	303	9.89	247.5	0.2	1	175	44	0	8.5	10.8	0.0
12/08/2021 10:01:00	69.9	303	9.82	247.6	0.0	1	172	43	0	8.3	10.7	0.0
12/08/2021 10:02:00	69.0	303	9.78	249.5	0.0	3	168	46	0	8.2	10.6	0.0
12/08/2021 10:03:00	68.1	303	9.76	250.0	0.0	4	168	43	0	8.6	10.8	0.0
12/08/2021 10:04:00	68.3	302	9.77	248.8	0.0	3	165	41	1	8.1	10.7	0.0
12/08/2021 10:05:00	68.8	302	9.85	249.8	0.0	4	157	44	1	7.6	10.3	0.0
12/08/2021 10:06:00	69.1	302	9.86	253.1	0.0	3	159	36	0	8.3	10.3	0.0
12/08/2021 10:07:00	69.2	303	9.84	249.0	0.0	3	159	41	1	8.8	10.9	0.0
12/08/2021 10:08:00	68.5	303	9.83	250.7	0.0	4	169	43	1	8.8	11.0	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 10:09:00	67.5	303	9.82	250.6	0.0	6	179	40	0	9.0	11.2	0.0
12/08/2021 10:10:00	66.7	303	9.81	251.8	0.0	7	172	42	1	8.7	11.1	0.0
12/08/2021 10:11:00	66.3	303	9.80	253.7	0.0	6	177	41	1	8.8	11.0	0.0
12/08/2021 10:12:00	66.2	303	9.78	251.3	0.0	4	182	37	0	9.0	11.2	0.0
12/08/2021 10:13:00	66.5	303	9.74	250.3	0.0	4	170	37	1	8.5	10.9	0.0
12/08/2021 10:14:00	65.9	304	9.77	252.0	0.0	6	174	36	0	9.0	11.0	0.0
12/08/2021 10:15:00	65.5	303	9.75	252.1	0.0	6	196		0		11.3	0.0
12/08/2021 10:16:00	65.1	302	9.73	252.1	0.0	7	176		0		10.7	0.0
12/08/2021 10:17:00	64.9	303	9.73	250.6	0.0	5	163	39	0	8.9<	10.4	0.0
12/08/2021 10:18:00	65.1	303	9.71	250.3	0.0	6	160	34	0	9.0	10.8	0.0
12/08/2021 10:19:00	64.4	302	9.72	246.9	0.0	5	165	34	0	8.2	10.7	0.0
12/08/2021 10:20:00	65.3	303	9.74	243.1	0.0	4	155	39	0	7.9	10.2	0.0
12/08/2021 10:21:00	67.2	303	9.74	243.7	0.0	5	153	42	1	7.9	10.2	0.0
12/08/2021 10:22:00	67.9	303	9.75	252.9	0.0	5	158	42	1	8.0	10.3	0.0
12/08/2021 10:23:00	69.1	303	9.74	251.2	0.0	4	155	36	0	7.8	10.3	0.0
12/08/2021 10:24:00	70.7	304	9.73	247.0	0.0	6	148	38	0	7.4	10.0	0.0
12/08/2021 10:25:00	72.5	304	9.76	247.1	0.0	5	142	45	0	6.8	9.5	0.0
12/08/2021 10:26:00	72.6	304	9.77	246.5	0.0	4	143	46	0	7.7	9.6	0.0
12/08/2021 10:27:00	72.0	303	9.76	253.8	0.0	3	152	36	0	7.9	10.2	0.0
12/08/2021 10:28:00	71.9	304	9.76	248.3	0.0	3	162	37	0	8.1	10.4	0.0
12/08/2021 10:29:00	71.5	304	9.75	249.4	0.0	3	167	41	0	8.3	10.4	0.0
12/08/2021 10:30:00	69.4	303	9.74	252.0	0.0	1	183	36	0	8.9	11.0	0.0
12/08/2021 10:31:00	69.3	303	9.76	243.3	0.0	1	179	40	0	8.1	10.8	0.0
12/08/2021 10:32:00	68.8	303	9.76	244.5	0.0	3	179	42	0	9.1	10.9	0.0
12/08/2021 10:33:00	70.1	303	9.79	250.8	0.0	1	178	39	0	8.3	10.9	0.0
12/08/2021 10:34:00	71.0	303	9.81	252.6	0.0	3	157	43	0	8.2	10.3	0.0
12/08/2021 10:35:00	70.8	304	9.82	253.0	0.0	1	157	38	1	9.0	10.8	0.0
12/08/2021 10:36:00	70.1	304	9.79	249.5	0.0	1	163	36	1	9.3	11.3	0.0
12/08/2021 10:37:00	69.0	304	9.83	250.6	0.0	3	160	37	0	9.3	11.4	0.0
12/08/2021 10:38:00	68.9	304	9.77	244.2	0.0	3	170	37	0	8.8	11.2	0.0
12/08/2021 10:39:00	67.9	304	9.75	255.5	0.0	4	162	38	1	8.6	10.8	0.0
12/08/2021 10:40:00	66.9	304	9.74	247.7	0.0	4	166	40	0	9.2	11.1	0.0
12/08/2021 10:41:00	66.5	304	9.73	249.8	0.0	4	169	38	0	9.0	11.1	0.0
12/08/2021 10:42:00	66.8	304	9.72	246.6	0.0	4	160	39	0	8.9	11.1	0.0
12/08/2021 10:43:00	66.5	304	9.91	247.5	0.0	4	151	43	0	8.7	11.0	0.0
12/08/2021 10:44:00	66.8	304	9.89	244.4	0.0	3	159	42	0	9.0	11.0	0.0
12/08/2021 10:45:00	67.5	304	10.02	252.5	0.0	4	158	41	0	8.7	11.0	0.0
12/08/2021 10:46:00	68.3	304	9.96	255.5	0.0	4	157	42	0	8.2	10.7	0.0
12/08/2021 10:47:00	68.6	302	9.89	253.7	0.0	4	145	47	0	7.2	10.2	0.0
12/08/2021 10:48:00	68.7	302	9.82	250.9	0.0	2	138	48	0	7.5	9.7	0.0
12/08/2021 10:49:00	68.9	303	9.78	246.8	0.0	4	151	39	0	8.4	10.2	0.0
12/08/2021 10:50:00	70.7	304	9.75	244.3	0.0	5	147	48	1	7.8	10.3	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 10:51:00	70.6	303	9.73	246.8	0.0	5	147	51	0	8.3	10.3	0.0
12/08/2021 10:52:00	71.1	304	9.75	249.2	0.0	5	150	53	1	7.7	10.4	0.0
12/08/2021 10:53:00	70.5	303	9.73	251.3	0.0	8	150	52	1	8.3	10.4	0.0
12/08/2021 10:54:00	70.3	304	9.73	246.3	0.0	5	166	47	1	8.6	10.8	0.0
12/08/2021 10:55:00	71.0	304	9.73	244.9	0.0	7	152	52	1	8.2	10.3	0.0
12/08/2021 10:56:00	69.4	304	9.72	246.4	0.0	7	164	49	0	9.3	10.9	0.0
12/08/2021 10:57:00	68.2	304	9.78	251.4	0.0	6	185	44	0	9.8	11.7	0.0
12/08/2021 10:58:00	67.7	304	9.74	255.6	0.0	9	181	43	0	9.0	11.3	0.0
12/08/2021 10:59:00	67.4	304	9.73	247.7	0.0	8	166	43	0	8.8	11.0	0.0
12/08/2021 11:00:00	67.2	304	9.71	248.0	0.0	7	158	41	0	8.9	11.0	0.0
12/08/2021 11:01:00	66.7	304	9.72	249.4	0.0	6	176	37	0	9.0	11.0	0.0
12/08/2021 11:02:00	66.3	304	9.73	247.0	0.0	6	179	36	0	9.2	11.1	0.0
12/08/2021 11:03:00	66.4	304	9.75	248.1	0.0	6	183	34	1	8.9	11.2	0.0
12/08/2021 11:04:00	67.0	304	9.75	254.6	0.0	7	164	36	1	8.9	10.9	0.0
12/08/2021 11:05:00	67.1	304	9.78	250.2	0.0	10	163	33	0	8.6	10.9	0.0
12/08/2021 11:06:00	67.0	304	9.80	245.2	0.0	8	151	32	1	8.2	10.7	0.0
12/08/2021 11:07:00	66.8	304	9.85	251.2	0.0	7	149	34	0	8.4	10.5	0.0
12/08/2021 11:08:00	68.0	304	9.79	246.9	0.0	8	160	31	0	8.5	10.7	0.0
12/08/2021 11:09:00	69.5	304	9.78	254.7	0.0	7	160	33	0	7.9	10.2	0.0
12/08/2021 11:10:00	68.6	304	9.77	249.7	0.0	7	173	33	0	8.3	10.5	0.0
12/08/2021 11:11:00	67.2	304	9.76	245.8	0.0	7	184	32	0	9.0	10.8	0.0
12/08/2021 11:12:00	66.3	304	9.77	249.1	0.0	7	189	19	0	9.3	11.3	0.0
12/08/2021 11:13:00	65.2	304	9.81	248.6	0.0	7	174	24	0	8.9	11.2	0.0
12/08/2021 11:14:00	64.6	304	9.80	252.9	0.0	6	180	27	0	8.9	11.1	0.0
12/08/2021 11:15:00	64.9	304	9.80	249.1	0.0	6	186		0		10.9	0.0
12/08/2021 11:16:00	65.8	304	9.76	247.4	0.0	7	176		0		10.6	0.0
12/08/2021 11:17:00	66.8	304	9.74	253.9	0.0	5	155	30	0	8.7<	10.1	0.0
12/08/2021 11:18:00	67.8	304	9.73	243.2	0.0	7	156	32	1	8.6	10.6	0.0
12/08/2021 11:19:00	68.0	304	9.73	251.6	0.0	7	159	34	0	8.7	10.5	0.0
12/08/2021 11:20:00	67.1	304	9.73	247.1	0.0	7	173	26	0	8.7	10.9	0.0
12/08/2021 11:21:00	65.5	303	9.85	254.5	0.0	5	180	27	0	8.7	10.7	0.0
12/08/2021 11:22:00	65.8	303	9.89	246.3	0.0	6	182	25	0	8.6	10.8	0.0
12/08/2021 11:23:00	66.6	304	9.84	243.6	0.0	6	198	24	0	9.4	11.2	0.0
12/08/2021 11:24:00	67.4	304	9.83	252.7	0.0	7	186	25	0	8.7	11.0	0.0
12/08/2021 11:25:00	69.6	304	9.80	250.3	0.0	7	168	27	0	8.4	10.7	0.0
12/08/2021 11:26:00	71.1	304	9.80	250.8	0.0	5	151	30	0	8.1	10.3	0.0
12/08/2021 11:27:00	71.2	304	9.78	252.1	0.0	5	161	28	0	8.9	10.7	0.0
12/08/2021 11:28:00	70.2	304	9.77	248.8	0.0	4	176	27	0	9.4	11.2	0.0
12/08/2021 11:29:00	69.2	304	9.76	251.7	0.0	4	183	25	0	9.3	11.5	0.0
12/08/2021 11:30:00	68.4	304	9.76	252.0	0.0	6	169	26	0	8.8	11.0	0.0
12/08/2021 11:31:00	68.0	304	9.79	247.4	0.0	7	160	29	0	8.3	10.8	0.0
12/08/2021 11:32:00	68.2	304	9.78	242.1	0.0	8	144	32	1	8.3	10.4	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 11:33:00	68.1	304	9.77	249.7	0.0	7	186	26	0	9.4	11.1	0.0
12/08/2021 11:34:00	67.1	304	9.79	247.5	0.0	6	205	25	0	9.7	11.6	0.0
12/08/2021 11:35:00	66.6	304	9.80	244.5	0.0	6	195	27	0	9.3	11.5	0.0
12/08/2021 11:36:00	67.0	304	9.81	246.2	0.4	7	185	29	0	9.1	11.2	0.0
12/08/2021 11:37:00	67.2	304	9.92	254.2	0.3	7	169	29	0	9.4	11.3	0.0
12/08/2021 11:38:00	68.0	304	9.87	252.4	0.0	7	164	28	0	9.1	11.3	0.0
12/08/2021 11:39:00	68.3	304	9.83	249.0	0.0	7	161	26	0	8.9	11.1	0.0
12/08/2021 11:40:00	68.1	304	9.79	248.9	0.0	6	161	25	0	8.8	11.0	0.0
12/08/2021 11:41:00	68.7	304	9.78	250.3	0.0	4	177	22	0	8.7	10.8	0.0
12/08/2021 11:42:00	68.5	304	9.77	247.5	0.0	4	188	21	0	8.9	11.0	0.0
12/08/2021 11:43:00	68.4	304	9.80	244.2	0.0	6	197	22	0	8.8	11.0	0.0
12/08/2021 11:44:00	67.4	304	9.74	248.9	0.3	6	198	24	0	9.1	11.1	0.0
12/08/2021 11:45:00	66.9	304	9.80	251.2	0.5	6	187	24	0	9.1	11.2	0.0
12/08/2021 11:46:00	67.1	304	9.78	253.9	0.3	6	170	19	0	8.8	11.1	0.0
12/08/2021 11:47:00	67.6	304	9.80	245.5	0.7	5	162	18	0	8.5	10.8	0.0
12/08/2021 11:48:00	68.2	304	9.81	247.7	0.0	5	163	16	0	8.2	10.6	0.0
12/08/2021 11:49:00	68.0	304	9.78	247.9	0.0	7	158	17	0	8.2	10.5	0.0
12/08/2021 11:50:00	68.2	304	9.77	253.6	0.0	5	158	17	0	8.4	10.5	0.0
12/08/2021 11:51:00	68.1	304	9.77	255.0	0.0	7	155	12	0	8.1	10.6	0.0
12/08/2021 11:52:00	69.0	304	9.81	243.8	0.0	5	143	21	0	7.6	10.2	0.0
12/08/2021 11:53:00	69.9	304	9.81	252.4	0.0	5	146	20	0	8.0	10.2	0.0
12/08/2021 11:54:00	71.5	304	9.81	244.5	0.0	4	157	18	0	8.1	10.4	0.0
12/08/2021 11:55:00	71.4	304	9.77	244.6	0.0	4	160	19	0	8.4	10.5	0.0
12/08/2021 11:56:00	70.9	304	9.74	249.0	0.0	4	165	19	0	8.4	10.6	0.0
12/08/2021 11:57:00	71.2	304	9.72	252.5	0.0	3	163	20	0	8.6	10.7	0.0
12/08/2021 11:58:00	71.3	304	9.72	251.7	0.0	3	182	21	0	8.6	10.8	0.0
12/08/2021 11:59:00	70.1	304	9.72	246.0	0.0	3	193	20	0	8.9	11.0	0.0
12/08/2021 12:00:00	69.8	304	9.72	248.4	0.0	3	179	24	0	8.7	11.0	0.0
12/08/2021 12:01:00	69.0	304	9.94	255.3	0.0	4	172	27	0	8.6	10.7	0.0
12/08/2021 12:02:00	68.4	304	9.97	250.6	0.0	3	186	21	1	8.6	11.0	0.0
12/08/2021 12:03:00	68.3	304	9.93	252.4	0.0	3	178	24	0	8.6	10.8	0.0
12/08/2021 12:04:00	67.0	303	9.88	244.7	0.0	4	174	23	0	8.9	11.0	0.0
12/08/2021 12:05:00	65.9	303	9.85	251.3	0.0	3	176	23	0	8.8	11.1	0.0
12/08/2021 12:06:00	65.8	303	9.82	248.4	0.0	3	165	19	0	8.7	11.0	0.0
12/08/2021 12:07:00	65.6	303	9.78	248.5	0.0	4	163	26	0	8.6	10.9	0.0
12/08/2021 12:08:00	65.5	303	9.78	245.1	0.0	3	160	27	0	8.7	10.8	0.0
12/08/2021 12:09:00	64.4	302	9.80	255.5	0.0	4	183	31	0	9.2	11.2	0.0

Period Average =	68.1	304	9.79	249.3	0.0	5	167	35	0	8.5	10.7	0.0
Period Max Value =	72.6	304	10.02	256.9	0.7	10	205	53	1	9.8	11.7	0.0
Period Min Value =	60.4	302	9.71	242.1	0.0	1	138	12	0	6.7	9.3	0.0
Period Totals =	1.0426E+4	4.6439E+4	1.4971E+3	3.8136E+4	2.7000E+0	7.3800E+2	2.5546E+4	5.1530E+3	3.2000E+1	1.2637E+3	1.6375E+3	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.0	100.0	98.0	100.0	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

VOC Run 2

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 12:45 End of Report: 12/08/2021 15:14 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 12:45	60.5	310	9.79	247.6	0.0	6	162	25	0	9.4	11.6	0.0
12/08/2021 12:46	60.8	310	9.76	247.7	0.0	8	156	24	1	9.5	11.7	0.0
12/08/2021 12:47	60.7	310	9.76	250.3	0.0	8	174	25	0	9.7	11.6	0.0
12/08/2021 12:48	61.4	311	9.75	251.4	0.0	8	176	25	0	9.6	11.8	0.0
12/08/2021 12:49	61.9	311	9.73	252.7	0.0	9	155	24	0	9.3	11.5	0.0
12/08/2021 12:50	63.0	311	9.76	254.4	0.0	7	151	26	0	9.1	11.3	0.0
12/08/2021 12:51	63.8	312	9.76	253.9	0.0	8	141	27	0	8.8	11.0	0.0
12/08/2021 12:52	64.0	312	9.75	249.3	0.0	9	153	22	0	9.3	11.4	0.0
12/08/2021 12:53	63.6	312	9.75	246.8	0.0	7	141	12	0	8.9	11.2	0.0
12/08/2021 12:54	63.1	312	9.75	245.7	0.0	9	138	22	0	8.8	11.1	0.0
12/08/2021 12:55	64.3	312	9.76	245.1	0.0	10	138	30	0	8.4	10.8	0.0
12/08/2021 12:56	65.4	313	9.75	248.1	0.0	9	132	41	0	7.9	10.6	0.0
12/08/2021 12:57	66.5	313	9.75	257.7	0.0	10	116	50	0	7.6	10.1	0.0
12/08/2021 12:58	67.1	313	9.74	255.5	0.0	10	117	47	0	7.5	10.0	0.0
12/08/2021 12:59	67.5	313	9.84	242.7	0.0	10	117	48	0	7.7	10.1	0.0
12/08/2021 13:00	69.0	314	9.81	243.5	0.0	10	112	52	0	7.0	10.0	0.0
12/08/2021 13:01	70.5	315	9.77	245.5	0.0	9	108	58	0	6.8	9.5	0.0
12/08/2021 13:02	71.2	315	9.77	247.2	0.0	7	115	60	0	7.1	9.6	0.0
12/08/2021 13:03	71.4	315	9.75	251.5	0.0	7	125	67	0	7.2	9.7	0.0
12/08/2021 13:04	70.3	315	9.76	264.2	0.0	9	140	69	0	8.0	10.1	0.0
12/08/2021 13:05	69.5	314	9.74	266.7	0.0	9	159	74	0	8.1	10.6	0.0
12/08/2021 13:06	69.6	314	9.75	264.5	0.0	9	141	83	0	7.5	10.2	0.0
12/08/2021 13:07	69.7	313	9.76	267.6	0.0	10	135	101	0	7.3	10.0	0.0
12/08/2021 13:08	68.9	313	9.74	269.5	0.0	9	148	124	0	7.7	10.0	0.0
12/08/2021 13:09	69.8	312	9.73	267.6	0.0	9	150	131	0	7.5	10.1	0.0
12/08/2021 13:10	70.3	312	9.74	265.8	0.0	9	136	153	0	7.7	10.1	0.0
12/08/2021 13:11	70.9	312	9.76	268.3	0.0	8	150	187	0	7.9	10.3	0.0
12/08/2021 13:12	70.2	311	9.74	267.4	0.0	8	161	203	0	8.4	10.6	0.0
12/08/2021 13:13	70.1	311	9.78	259.1	0.0	7	180	241	0	8.3	10.9	0.0
12/08/2021 13:14	69.9	311	9.76	254.2	0.0	9	169	318	6	8.3	10.5	0.0
12/08/2021 13:15	70.2	311	9.77	244.3	0.0	9	167		18		10.5	0.0
12/08/2021 13:16	69.5	311	9.74	243.7	0.0	11	150		24		10.5	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 13:17	68.8	311	9.73	245.0	0.0	10	156	328	29	9.1<	11.0	0.0
12/08/2021 13:18	69.3	311	9.73	254.9	0.0	11	158	364	38	8.7	10.8	0.0
12/08/2021 13:19	69.6	311	9.73	257.3	0.0	13	148	425	47	8.1	10.4	0.0
12/08/2021 13:20	69.4	310	9.87	253.8	0.0	12	136	462	58	8.3	10.4	0.0
12/08/2021 13:21	67.6	310	9.94	252.6	0.0	17	148	380	67	8.7	10.9	0.0
12/08/2021 13:22	66.4	310	9.92	248.0	0.0	17	154	426	51	8.6	10.9	0.0
12/08/2021 13:23	64.7	309	9.87	246.4	0.0	14	156	381	51	8.9	11.1	0.0
12/08/2021 13:24	63.1	309	9.82	241.4	0.0	11	163	404	45	9.0	11.2	0.0
12/08/2021 13:25	62.4	309	9.77	242.2	0.0	10	159	352	47	9.3	11.4	0.0
12/08/2021 13:26	61.6	309	9.78	247.6	0.0	13	150	351	41	9.3	11.5	0.0
12/08/2021 13:27	61.1	308	9.76	257.1	0.0	13	151	357	38	9.1	11.4	0.0
12/08/2021 13:28	60.4	306	9.75	249.5	0.0	15	149	341	37	9.4	11.6	0.0
12/08/2021 13:29	60.9	306	9.77	250.4	0.0	13	156	354	34	8.5	11.5	0.0
12/08/2021 13:30	62.3	306	9.78	251.4	0.0	16	137	397	31	8.6	10.6	0.0
12/08/2021 13:31	62.5	307	9.73	248.8	0.0	17	166	370	37	9.1	11.1	0.0
12/08/2021 13:32	61.9	306	9.76	246.9	0.0	19	162	339	35	9.0	11.3	0.0
12/08/2021 13:33	61.8	307	9.77	244.7	0.0	19	169	299	31	9.1	11.2	0.0
12/08/2021 13:34	62.4	308	9.76	246.8	0.0	18	166	240	30	8.7	11.0	0.0
12/08/2021 13:35	63.6	310	9.76	247.2	0.0	18	157	231	22	8.3	10.7	0.0
12/08/2021 13:36	65.6	311	9.76	248.2	0.0	17	143	240	18	7.7	10.2	0.0
12/08/2021 13:37	66.4	311	9.78	246.6	0.0	13	152	215	16	8.2	10.2	0.0
12/08/2021 13:38	66.9	312	9.80	247.0	0.0	13	184	184	11	8.2	10.5	0.0
12/08/2021 13:39	66.9	312	9.75	249.4	0.0	16	182	181	9	8.7	10.7	0.0
12/08/2021 13:40	66.3	312	9.77	251.9	0.0	21	184	163	7	8.5	10.9	0.0
12/08/2021 13:41	65.2	312	9.76	254.2	0.0	18	178	167	5	8.5	10.8	0.0
12/08/2021 13:42	63.7	312	9.75	255.8	0.0	17	193	162	5	9.0	11.0	0.0
12/08/2021 13:43	63.0	311	9.78	254.0	0.0	17	185	155	4	8.7	11.0	0.0
12/08/2021 13:44	63.5	311	9.78	251.9	0.1	18	179	155	3	8.3	10.9	0.0
12/08/2021 13:45	64.0	311	9.76	250.2	0.0	16	159	169	3	8.1	10.5	0.0
12/08/2021 13:46	65.7	311	9.78	245.6	0.0	13	139	152	3	8.0	10.5	0.0
12/08/2021 13:47	66.5	312	9.85	251.1	0.0	10	147	137	2	7.7	10.2	0.0
12/08/2021 13:48	65.9	312	9.82	246.7	0.0	9	157	137	2	8.3	10.3	0.0
12/08/2021 13:49	64.8	311	9.81	249.5	0.0	12	162	116	1	8.6	10.9	0.0
12/08/2021 13:50	63.5	311	9.84	248.7	0.0	13	167	105	1	8.8	10.9	0.0
12/08/2021 13:51	62.5	311	9.83	250.5	0.0	11	160	87	0	8.7	11.1	0.0
12/08/2021 13:52	62.2	311	9.79	248.1	0.0	11	169	88	0	8.3	10.8	0.0
12/08/2021 13:53	61.5	310	9.83	243.5	0.0	11	166	83	0	8.2	10.6	0.0
12/08/2021 13:54	63.4	309	9.81	249.5	0.0	8	153	84	0	7.2	10.0	0.0
12/08/2021 13:55	66.4	310	9.76	251.1	0.0	8	151	86	0	7.5	9.9	0.0
12/08/2021 13:56	69.5	311	9.79	251.6	0.0	10	150	86	0	6.6	9.6	0.0
12/08/2021 13:57	70.8	312	9.76	251.4	0.0	8	126	105	0	6.7	9.0	0.0
12/08/2021 13:58	71.0	313	9.74	248.1	0.0	9	162	80	0	8.1	10.2	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 13:59	71.7	314	9.71	251.8	0.0	11	171	79	0	7.9	10.3	0.0
12/08/2021 14:00	72.3	315	9.60	251.0	0.0	12	155	90	0	7.7	10.1	0.0
12/08/2021 14:01	71.8	315	9.72	252.0	0.0	12	149	93	0	7.8	10.1	0.0
12/08/2021 14:02	71.9	316	9.79	248.8	0.0	13	142	93	1	8.0	10.2	0.0
12/08/2021 14:03	71.8	316	9.80	248.3	0.0	12	139	92	1	8.2	10.4	0.0
12/08/2021 14:04	70.0	315	9.77	249.4	0.0	11	151	86	1	8.9	10.8	0.0
12/08/2021 14:05	70.1	315	9.80	247.1	0.0	11	164	79	1	8.3	10.9	0.0
12/08/2021 14:06	71.8	315	9.79	244.7	0.0	14	151	87	0	7.8	10.2	0.0
12/08/2021 14:07	72.0	315	9.78	247.4	0.0	12	150	85	0	8.2	10.3	0.0
12/08/2021 14:08	71.3	315	9.79	246.7	0.0	11	149	80	0	8.7	10.7	0.0
12/08/2021 14:09	71.1	315	9.80	245.6	0.0	10	153	76	0	8.7	11.0	0.0
12/08/2021 14:10	70.6	315	9.81	245.4	0.0	12	147	79	0	8.1	10.5	0.0
12/08/2021 14:11	70.3	315	9.79	246.2	0.0	12	145	75	0	8.4	10.6	0.0
12/08/2021 14:12	69.1	314	9.80	253.8	0.0	12	158	71	0	8.6	10.8	0.0
12/08/2021 14:13	69.1	314	9.81	255.9	0.0	11	155	78	0	8.4	10.7	0.0
12/08/2021 14:14	69.8	314	9.79	256.3	0.0	13	145	76	0	7.8	10.4	0.0
12/08/2021 14:15	70.9	314	9.79	253.5	0.0	10	135		0		10.2	0.0
12/08/2021 14:16	69.7	314	9.77	248.4	0.0	11	152		0		10.8	0.0
12/08/2021 14:17	68.5	313	9.80	245.3	0.0	11	174	73	0	9.3<	11.2	0.0
12/08/2021 14:18	67.9	314	9.80	242.3	0.0	14	153	71	0	9.0	10.9	0.0
12/08/2021 14:19	65.8	313	9.80	246.4	0.0	11	161	67	0	9.2	10.9	0.0
12/08/2021 14:20	63.7	313	9.77	245.2	0.0	10	172	58	0	9.3	11.4	0.0
12/08/2021 14:21	62.8	312	9.77	249.0	0.0	12	173	55	0	9.1	11.3	0.0
12/08/2021 14:22	64.7	311	9.76	252.2	0.0	11	164	54	0	7.5	10.8	0.0
12/08/2021 14:23	66.3	310	9.76	251.4	0.0	7	139	69	0	7.2	9.5	0.0
12/08/2021 14:24	67.2	310	9.79	252.7	0.0	8	153	64	0	8.1	10.0	0.0
12/08/2021 14:25	68.2	311	9.79	248.4	0.0	11	164	61	0	8.8	10.8	0.0
12/08/2021 14:26	68.6	313	9.81	255.1	0.0	12	164	54	0	8.7	10.9	0.0
12/08/2021 14:27	68.1	313	9.78	253.9	0.0	14	175	52	0	9.1	11.0	0.0
12/08/2021 14:28	68.1	314	9.77	247.3	0.0	13	189	49	0	9.0	11.2	0.0
12/08/2021 14:29	67.7	315	9.75	245.4	0.0	15	176	50	0	8.8	11.0	0.0
12/08/2021 14:30	67.0	315	9.75	246.3	0.0	15	157	51	0	8.7	10.9	0.0
12/08/2021 14:31	66.7	315	9.82	246.5	0.0	14	160	51	0	8.8	10.9	0.0
12/08/2021 14:32	67.8	316	9.80	247.2	0.0	14	163	46	0	8.3	10.8	0.0
12/08/2021 14:33	68.7	316	9.80	250.0	0.0	15	145	51	0	8.3	10.4	0.0
12/08/2021 14:34	69.5	316	9.82	247.1	0.0	14	144	48	0	8.6	10.7	0.0
12/08/2021 14:35	68.6	316	9.86	247.5	0.0	13	176	45	0	9.5	11.1	0.0
12/08/2021 14:36	67.8	316	9.90	250.0	0.0	10	188	40	0	9.2	11.6	0.0
12/08/2021 14:37	68.4	316	9.83	248.2	0.0	14	154	43	0	8.1	10.7	0.0
12/08/2021 14:38	69.5	316	9.79	246.7	0.0	17	138	50	0	7.9	10.2	0.0
12/08/2021 14:39	70.2	316	9.76	254.0	0.0	12	147	41	0	8.3	10.4	0.0
12/08/2021 14:40	70.0	316	9.76	254.5	0.0	10	157	38	0	8.8	10.8	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 14:41	69.3	316	9.82	256.5	0.0	10	158	37	0	8.8	11.0	0.0
12/08/2021 14:42	67.5	316	9.83	250.7	0.0	13	167	36	0	8.9	11.1	0.0
12/08/2021 14:43	68.2	316	9.85	247.1	0.0	13	164	38	0	8.7	11.0	0.0
12/08/2021 14:44	67.2	315	9.84	246.5	0.0	13	164	37	0	8.8	11.0	0.0
12/08/2021 14:45	66.9	315	9.87	241.9	0.0	10	160	36	0	8.7	10.9	0.0
12/08/2021 14:46	68.4	315	9.87	248.0	0.0	11	163	35	0	8.5	10.8	0.0
12/08/2021 14:47	66.9	315	9.85	251.0	0.0	11	174	36	0	9.3	11.1	0.0
12/08/2021 14:48	66.7	314	9.86	252.3	0.0	10	180	34	0	9.1	11.3	0.0
12/08/2021 14:49	64.8	312	9.83	253.9	0.0	16	187	28	0	8.9	11.2	0.0
12/08/2021 14:50	63.6	311	9.82	254.5	0.0	10	189	28	0	8.5	10.8	0.0
12/08/2021 14:51	65.5	311	9.79	248.6	0.0	8	182	29	0	8.3	10.7	0.0
12/08/2021 14:52	68.7	312	9.78	244.6	0.0	10	156	35	0	7.4	10.0	0.0
12/08/2021 14:53	70.5	313	9.77	250.0	0.0	13	142	37	0	8.0	10.0	0.0
12/08/2021 14:54	69.9	314	9.79	249.7	0.0	12	153	32	0	9.1	10.8	0.0
12/08/2021 14:55	69.5	314	9.78	244.7	0.0	12	171	29	0	9.4	11.5	0.0
12/08/2021 14:56	67.1	315	9.82	242.6	0.0	13	182	29	0	9.7	11.6	0.0
12/08/2021 14:57	65.7	315	9.81	245.2	0.0	17	186	26	0	9.3	11.7	0.0
12/08/2021 14:58	64.5	315	9.80	251.7	0.0	17	176	29	0	9.2	11.3	0.0
12/08/2021 14:59	63.2	315	9.82	254.8	0.0	15	189	29	0	9.9	11.7	0.0
12/08/2021 15:00	61.9	314	9.80	257.5	0.0	14	200	25	0	9.9	11.9	0.0
12/08/2021 15:01	61.7	313	9.83	252.8	0.3	14	206	23	0	9.2	11.7	0.0
12/08/2021 15:02	63.6	312	9.84	242.1	0.0	8	184	23	0	8.4	11.0	0.0
12/08/2021 15:03	65.0	313	9.83	243.4	0.3	12	152	35	0	8.6	10.7	0.0
12/08/2021 15:04	65.4	313	10.48	255.0	0.0	16	152	31	0	9.1	11.1	0.0
12/08/2021 15:05	66.4	313	10.18	252.8	0.0	17	156	29	0	8.9	11.2	0.0
12/08/2021 15:06	67.1	314	10.03	253.8	0.0	14	146	33	0	8.3	10.7	0.0
12/08/2021 15:07	66.6	314	9.96	256.7	0.0	14	148	30	0	8.8	10.9	0.0
12/08/2021 15:08	65.7	314	9.88	256.0	0.0	11	161	28	0	9.1	11.2	0.0
12/08/2021 15:09	65.0	314	9.83	255.2	0.0	10	169	29	0	9.3	11.4	0.0
12/08/2021 15:10	64.2	314	9.81	256.1	0.0	13	163	25	0	9.1	11.4	0.0
12/08/2021 15:11	65.7	314	9.83	256.6	0.0	10	136	28	0	7.9	10.8	0.0
12/08/2021 15:12	68.2	314	9.85	256.5	0.0	11	114	46	0	7.4	9.9	0.0
12/08/2021 15:13	70.2	314	9.85	255.7	0.0	10	114	36	0	7.5	9.9	0.0
12/08/2021 15:14	70.8	313	9.82	257.5	0.0	6	118	32	0	7.3	10.0	0.0
Period Average =	66.9	313	9.80	250.8	0.0	12	156	109	6	8.5	10.7	0.0
Period Max Value =	72.3	316	10.48	269.5	0.3	21	206	462	67	9.9	11.9	0.0
Period Min Value =	60.4	306	9.60	241.4	0.0	6	108	12	0	6.6	9.0	0.0
Period Totals =	1.0028E+4	4.6890E+4	1.4697E+3	3.7623E+4	7.0000E-1	1.7730E+3	2.3461E+4	1.5980E+4	9.1200E+2	1.2371E+3	1.6114E+3	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	97.9	100.0	98.0	100.0	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

VOC Run 3

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 15:37 End of Report: 12/08/2021 18:06 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 15:37	68.2	313	9.85	253.8	0.0	7	177	29	0	8.6	11.0	0.0
12/08/2021 15:38	67.0	312	9.83	248.1	0.0	7	161	31	0	8.5	10.8	0.0
12/08/2021 15:39	67.3	312	9.83	307.5	0.0	6	157	31	0	8.3	10.8	0.0
12/08/2021 15:40	68.5	311	9.86	310.4	0.0	7	160	34	0	7.9	10.5	0.0
12/08/2021 15:41	70.1	311	9.86	279.5	0.0	6	137	39	0	7.8	10.1	0.0
12/08/2021 15:42	70.6	310	9.88	266.1	0.0	7	139	37	0	8.3	10.4	0.0
12/08/2021 15:43	69.5	310	9.87	259.9	0.0	6	165	37	0	8.9	10.9	0.0
12/08/2021 15:44	69.6	311	9.82	254.0	0.0	6	172	39	0	8.4	11.0	0.0
12/08/2021 15:45	69.0	311	9.81	248.6	0.0	8	156	45	0	8.6	10.7	0.0
12/08/2021 15:46	67.6	311	9.80	247.9	0.0	7	170	41	0	9.1	11.2	0.0
12/08/2021 15:47	66.5	310	9.80	246.8	0.0	9	177	39	0	9.2	11.3	0.0
12/08/2021 15:48	66.1	310	9.80	249.6	0.0	10	174	38	0	9.1	11.3	0.0
12/08/2021 15:49	67.2	310	9.79	252.7	0.0	10	164	37	0	8.0	10.9	0.0
12/08/2021 15:50	68.6	310	9.79	252.2	0.0	11	150	42	0	8.3	10.4	0.0
12/08/2021 15:51	68.9	310	9.77	251.7	0.0	10	170	40	0	8.9	10.9	0.0
12/08/2021 15:52	69.1	310	9.78	252.1	0.0	7	178	39	0	8.6	11.0	0.0
12/08/2021 15:53	69.5	310	9.81	252.6	0.0	8	173	42	0	8.3	10.8	0.0
12/08/2021 15:54	69.7	310	9.78	250.9	0.0	8	167	43	0	8.2	10.6	0.0
12/08/2021 15:55	70.2	310	9.81	247.9	0.0	9	164	44	0	8.0	10.5	0.0
12/08/2021 15:56	70.1	310	9.85	245.7	0.0	8	154	44	0	8.2	10.5	0.0
12/08/2021 15:57	72.3	310	9.84	244.8	0.0	6	143	49	0	7.1	10.0	0.0
12/08/2021 15:58	72.7	310	9.82	245.0	0.0	9	127	63	0	7.5	9.8	0.0
12/08/2021 15:59	72.2	310	9.78	247.9	0.0	7	149	50	0	8.7	10.7	0.0
12/08/2021 16:00	70.5	309	9.76	251.5	0.0	6	171	39	0	9.5	11.5	0.0
12/08/2021 16:01	69.8	309	9.74	252.7	0.0	6	168	35	0	9.0	11.5	0.0
12/08/2021 16:02	69.9	308	9.85	251.6	0.0	8	155	39	0	8.3	10.8	0.0
12/08/2021 16:03	70.3	308	9.84	250.2	0.0	9	145	42	0	7.7	10.4	0.0
12/08/2021 16:04	70.5	308	9.79	248.1	0.0	9	136	53	0	7.7	10.1	0.0
12/08/2021 16:05	70.9	308	9.84	247.7	0.0	7	147	50	0	8.3	10.6	0.0
12/08/2021 16:06	69.3	308	9.84	249.9	0.0	6	154	48	0	9.1	11.0	0.0
12/08/2021 16:07	68.2	307	9.86	247.6	0.0	6	170	39	0	9.2	11.6	0.0
12/08/2021 16:08	68.6	307	9.81	251.4	0.0	7	148	43	0	8.3	10.9	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 16:09	68.7	307	9.82	251.5	0.0	8	139	48	0	8.6	10.8	0.0
12/08/2021 16:10	69.3	306	9.83	272.1	0.0	7	149	41	0	8.7	11.0	0.0
12/08/2021 16:11	66.7	305	9.83	280.6	0.0	9	160	37	0	9.6	11.4	0.0
12/08/2021 16:12	64.0	303	9.82	279.9	0.0	10	184	30	0	10.5	12.3	0.0
12/08/2021 16:13	63.3	303	9.78	273.4	0.0	11	173	31	0	9.7	12.0	0.0
12/08/2021 16:14	64.4	304	9.78	268.8	0.0	16	149	32	0	9.3	11.6	0.0
12/08/2021 16:15	64.5	304	9.80	274.1	0.0							0.0
12/08/2021 16:16	65.1	305	9.81	272.1	0.0							0.0
12/08/2021 16:17	65.5	305	9.80	275.1	0.0		168	32	0	10.5<	11.9<	0.0
12/08/2021 16:18	65.6	305	9.79	273.6	0.0	9	172	32	0	10.4	12.0	0.0
12/08/2021 16:19	65.6	305	9.79	277.2	0.0	11	163	32	0	9.9	11.8	0.0
12/08/2021 16:20	66.1	305	9.81	276.9	0.0	12	158	30	0	9.0	11.4	0.0
12/08/2021 16:21	67.8	305	9.81	279.0	0.0	15	138	36	0	7.8	10.5	0.0
12/08/2021 16:22	68.3	306	9.82	278.7	0.0	12	139	44	0	8.5	10.5	0.0
12/08/2021 16:23	67.8	305	9.80	277.8	0.0	9	160	44	0	9.1	11.2	0.0
12/08/2021 16:24	66.7	305	9.85	278.7	0.0	7	158	46	0	9.5	11.6	0.0
12/08/2021 16:25	66.0	305	9.90	279.7	0.0	9	156	42	0	9.8	11.8	0.0
12/08/2021 16:26	63.0	305	9.86	280.6	0.0	11	164	41	0	10.1	12.1	0.0
12/08/2021 16:27	61.4	304	9.85	276.9	0.0	13	175	42	0	10.3	12.3	0.0
12/08/2021 16:28	62.1	304	9.86	278.4	0.0	12	154	44	0	9.1	11.7	0.0
12/08/2021 16:29	63.6	304	9.87	282.9	0.0	13	146	46	0	9.1	11.3	0.0
12/08/2021 16:30	66.4	304	9.85	280.0	0.0	14	147	45	0	8.5	11.0	0.0
12/08/2021 16:31	67.3	304	9.86	277.9	0.0	15	145	49	0	8.9	11.0	0.0
12/08/2021 16:32	66.7	304	9.87	278.2	0.0	15	154	45	0	9.4	11.5	0.0
12/08/2021 16:33	66.3	304	9.88	279.4	0.0	17	154	44	0	9.7	11.8	0.0
12/08/2021 16:34	65.8	303	9.92	284.8	0.0	19	147	41	0	8.6	11.4	0.0
12/08/2021 16:35	65.5	302	9.92	290.0	0.0	20	145	43	0	9.1	11.2	0.0
12/08/2021 16:36	64.9	303	9.85	284.3	0.0	18	150	41	0	9.5	11.5	0.0
12/08/2021 16:37	64.5	303	9.80	288.2	0.0	21	163	39	0	10.2	12.1	0.0
12/08/2021 16:38	64.6	304	9.77	281.1	0.0	18	154	37	0	9.7	11.9	0.0
12/08/2021 16:39	65.0	304	9.73	283.0	0.0	20	149	34	0	9.7	12.0	0.0
12/08/2021 16:40	66.9	305	9.67	280.0	0.0	18	127	46	0	8.0	10.6	0.0
12/08/2021 16:41	65.9	305	9.79	282.0	0.0	16	143	41	0	9.8	11.5	0.0
12/08/2021 16:42	64.7	305	9.85	276.9	0.0	13	165	32	0	10.2	12.1	0.0
12/08/2021 16:43	63.2	305	9.88	279.8	0.0	14	179	29	0	10.2	12.3	0.0
12/08/2021 16:44	63.6	305	9.88	279.7	0.0	19	157	28	0	8.6	11.3	0.0
12/08/2021 16:45	65.5	306	9.83	279.1	0.0	15	142	33	0	8.1	10.7	0.0
12/08/2021 16:46	66.6	306	9.81	285.6	0.0	15	137	36	0	7.9	10.1	0.0
12/08/2021 16:47	65.6	306	9.82	285.6	0.0	16	165	32	0	9.6	11.3	0.0
12/08/2021 16:48	63.6	305	9.90	283.5	0.0	16	200	25	0	9.9	12.1	0.0
12/08/2021 16:49	62.9	305	9.81	284.3	0.0	17	197	26	0	9.3	11.7	0.0
12/08/2021 16:50	64.6	305	9.84	290.2	0.1	17	183	28	0	8.3	11.1	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 16:51	67.5	306	9.96	292.0	0.0	15	145	39	0	6.7	9.8	0.0
12/08/2021 16:52	68.0	306	9.90	282.5	0.0	11	133	42	0	7.9	9.9	0.0
12/08/2021 16:53	68.6	305	9.90	277.4	0.0	13	163	34	0	8.7	10.9	0.0
12/08/2021 16:54	66.6	305	9.93	280.4	0.0	14	163	33	0	9.0	11.2	0.0
12/08/2021 16:55	64.7	305	9.88	280.0	0.0	12	171	29	0	9.6	11.7	0.0
12/08/2021 16:56	64.6	305	9.85	281.3	0.0	13	169	30	0	8.7	11.4	0.0
12/08/2021 16:57	64.6	305	9.85	283.8	0.0	12	149	34	0	7.7	10.6	0.0
12/08/2021 16:58	65.6	305	9.83	287.4	0.0	10	137	38	0	7.8	10.2	0.0
12/08/2021 16:59	67.7	305	9.81	288.5	0.0	10	141	38	0	7.6	10.3	0.0
12/08/2021 17:00	70.6	304	9.78	290.3	0.0	7	139	42	0	6.7	9.7	0.0
12/08/2021 17:01	72.3	304	9.78	289.9	0.0	6	132	49	0	7.0	9.5	0.0
12/08/2021 17:02	71.9	304	9.76	291.7	0.0	5	136	46	0	7.8	10.1	0.0
12/08/2021 17:03	69.1	304	9.78	289.3	0.0	6	152	37	0	8.7	10.9	0.0
12/08/2021 17:04	67.7	303	9.79	287.4	0.0	6	163	33	0	8.4	11.0	0.0
12/08/2021 17:05	68.0	303	9.77	291.3	0.0	8	145	36	0	7.6	10.4	0.0
12/08/2021 17:06	67.5	303	9.78	291.1	0.0	8	145	36	0	7.5	10.2	0.0
12/08/2021 17:07	68.4	303	9.77	292.6	0.0	6	144	37	0	7.5	10.1	0.0
12/08/2021 17:08	68.8	303	9.77	294.0	0.0	6	142	36	0	7.2	9.9	0.0
12/08/2021 17:09	69.2	303	9.80	285.9	0.0	6	141	39	0	7.0	9.8	0.0
12/08/2021 17:10	69.8	303	9.85	278.0	0.0	6	141	41	0	7.5	9.9	0.0
12/08/2021 17:11	68.6	303	9.80	281.1	0.0	7	160	38	0	8.0	10.4	0.0
12/08/2021 17:12	68.1	303	9.80	285.3	0.0	5	165	38	0	7.7	10.5	0.0
12/08/2021 17:13	67.2	303	9.83	287.7	0.0	5	158	39	0	7.4	10.1	0.0
12/08/2021 17:14	67.5	303	9.89	283.8	0.0	7	154	35	0	7.4	10.2	0.0
12/08/2021 17:15	68.2	303	9.88	284.5	0.0	6	141		0		9.8	0.0
12/08/2021 17:16	69.3	303	9.81	281.4	0.0	5	136		0		9.7	0.0
12/08/2021 17:17	69.2	303	9.77	287.5	0.0	4	136	38	0	8.0<	9.9	0.0
12/08/2021 17:18	67.2	302	9.75	239.1	0.0	4	152	38	0	8.7	10.5	0.0
12/08/2021 17:19	67.4	304	9.74	282.6	0.0	4	164	36	0	8.3	10.6	0.0
12/08/2021 17:20	66.0	303	9.89	276.8	0.0	7	164	35	0	8.0	10.5	0.0
12/08/2021 17:21	64.9	303	10.02	281.0	0.0	5	159	34	0	8.2	10.6	0.0
12/08/2021 17:22	64.9	302	10.03	281.0	0.0	5	151	32	0	7.8	10.5	0.0
12/08/2021 17:23	65.1	301	9.98	283.2	0.0	6	125	34	0	6.8	9.9	0.0
12/08/2021 17:24	65.7	302	9.91	283.1	0.0	7	128	35	0	8.1	10.3	0.0
12/08/2021 17:25	67.7	303	9.96	285.8	0.0	9	136	32	0	7.5	10.2	0.0
12/08/2021 17:26	68.5	304	9.92	282.3	0.0	10	129	34	0	7.4	9.9	0.0
12/08/2021 17:27	68.5	305	10.02	278.7	0.0	9	141	32	0	7.9	10.3	0.0
12/08/2021 17:28	68.3	306	10.01	281.1	0.0	8	146	32	0	8.0	10.4	0.0
12/08/2021 17:29	68.9	306	9.91	280.5	0.0	9	137	33	0	7.6	10.3	0.0
12/08/2021 17:30	70.6	306	9.88	280.0	0.0	8	123	38	0	7.2	9.9	0.0
12/08/2021 17:31	71.1	307	9.86	271.4	0.0	7	127	40	0	7.2	9.7	0.0
12/08/2021 17:32	70.8	307	9.85	270.6	0.0	6	145	39	0	7.8	10.1	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 17:33	69.8	307	9.85	272.1	0.0	5	172	36	0	8.5	10.8	0.0
12/08/2021 17:34	70.1	307	9.81	269.4	0.0	8	167	37	0	7.7	10.5	0.0
12/08/2021 17:35	69.7	307	9.80	268.3	0.0	10	153	41	0	7.7	10.1	0.0
12/08/2021 17:36	70.5	307	9.80	271.1	0.0	9	159	38	0	7.8	10.4	0.0
12/08/2021 17:37	72.0	307	9.78	272.0	0.0	10	137	43	0	6.8	9.6	0.0
12/08/2021 17:38	71.8	307	9.77	273.1	0.0	11	142	42	0	7.5	9.8	0.0
12/08/2021 17:39	71.2	307	9.77	274.5	0.0	11	161	38	0	8.2	10.5	0.0
12/08/2021 17:40	71.1	307	9.78	276.1	0.0	12	147	42	0	7.5	10.2	0.0
12/08/2021 17:41	69.6	306	9.80	275.1	0.0	12	155	43	0	8.0	10.3	0.0
12/08/2021 17:42	68.3	306	9.80	271.6	0.0	10	165	40	0	8.2	10.7	0.0
12/08/2021 17:43	67.6	306	9.80	273.1	0.0	11	148	44	0	7.7	10.3	0.0
12/08/2021 17:44	67.1	306	9.79	276.1	0.0	13	143	45	0	8.1	10.5	0.0
12/08/2021 17:45	67.2	306	9.77	274.7	0.0	13	138	40	0	7.8	10.5	0.0
12/08/2021 17:46	68.3	306	9.78	274.0	0.0	13	124	46	0	7.1	9.9	0.0
12/08/2021 17:47	68.6	305	9.77	271.7	0.0	10	119	47	0	7.2	9.8	0.0
12/08/2021 17:48	68.4	305	9.76	273.6	0.0	8	125	43	0	7.6	10.1	0.0
12/08/2021 17:49	68.4	305	9.78	273.5	0.0	9	121	50	0	7.5	10.1	0.0
12/08/2021 17:50	68.2	305	9.79	267.8	0.0	9	120	47	0	7.0	9.9	0.0
12/08/2021 17:51	67.8	305	9.82	274.4	0.0	9	120	53	0	7.0	9.8	0.0
12/08/2021 17:52	67.6	305	9.82	274.6	0.0	9	115	61	0	7.1	9.8	0.0
12/08/2021 17:53	68.1	305	9.81	274.9	0.0	9	109	52	0	6.8	9.7	0.0
12/08/2021 17:54	68.8	305	9.79	272.2	0.0	8	103	72	0	6.4	9.4	0.0
12/08/2021 17:55	68.2	305	9.79	267.9	0.0	9	112	64	0	7.1	9.6	0.0
12/08/2021 17:56	67.3	305	9.76	267.7	0.0	8	132	46	0	7.5	10.1	0.0
12/08/2021 17:57	67.4	304	9.75	267.5	0.0	10	126	41	0	7.3	10.1	0.0
12/08/2021 17:58	67.8	304	9.74	268.1	0.0	10	122	41	0	6.8	9.8	0.0
12/08/2021 17:59	68.0	304	9.53	266.8	0.0	9	118	43	0	6.5	9.5	0.0
12/08/2021 18:00	68.6	304	9.65	267.1	0.0	11	107	45	0	6.6	9.4	0.0
12/08/2021 18:01	68.9	304	9.74	268.3	0.0	10	119	41	0	6.8	9.6	0.0
12/08/2021 18:02	68.9	304	9.79	268.8	0.0	7	121	47	0	6.4	9.4	0.0
12/08/2021 18:03	68.9	304	9.77	268.0	0.0	8	106	48	0	6.3	9.3	0.0
12/08/2021 18:04	70.1	304	9.78	266.9	0.0	8	95	52	0	6.0	9.1	0.0
12/08/2021 18:05	70.1	303	9.79	265.4	0.0	9	86	61	0	6.4	9.1	0.0
12/08/2021 18:06	69.5	303	9.80	272.2	0.0	7	105	45	0	7.2	9.7	0.0
Period Average =	67.8	306	9.82	273.3	0.0	10	148	40	0	8.2	10.6	0.0
Period Max Value =	72.7	313	10.03	310.4	0.1	21	200	72	0	10.5	12.3	0.0
Period Min Value =	61.4	301	9.53	239.1	0.0	4	86	25	0	6.0	9.1	0.0
Period Totals =	1.0162E+4	4.5853E+4	1.4733E+3	4.0989E+4	1.0000E-1	1.4380E+3	2.1906E+4	5.8600E+3	0.0000E+0	1.2000E+3	1.5731E+3	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	98.7	99.3	97.9	99.3	98.0	99.3	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

CARB 430 Run 1

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 11:39 End of Report: 12/08/2021 12:39 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 11:39	68.3	304	9.83	249.0	0.0	7	161	26	0	8.9	11.1	0.0
12/08/2021 11:40	68.1	304	9.79	248.9	0.0	6	161	25	0	8.8	11.0	0.0
12/08/2021 11:41	68.7	304	9.78	250.3	0.0	4	177	22	0	8.7	10.8	0.0
12/08/2021 11:42	68.5	304	9.77	247.5	0.0	4	188	21	0	8.9	11.0	0.0
12/08/2021 11:43	68.4	304	9.80	244.2	0.0	6	197	22	0	8.8	11.0	0.0
12/08/2021 11:44	67.4	304	9.74	248.9	0.3	6	198	24	0	9.1	11.1	0.0
12/08/2021 11:45	66.9	304	9.80	251.2	0.5	6	187	24	0	9.1	11.2	0.0
12/08/2021 11:46	67.1	304	9.78	253.9	0.3	6	170	19	0	8.8	11.1	0.0
12/08/2021 11:47	67.6	304	9.80	245.5	0.7	5	162	18	0	8.5	10.8	0.0
12/08/2021 11:48	68.2	304	9.81	247.7	0.0	5	163	16	0	8.2	10.6	0.0
12/08/2021 11:49	68.0	304	9.78	247.9	0.0	7	158	17	0	8.2	10.5	0.0
12/08/2021 11:50	68.2	304	9.77	253.6	0.0	5	158	17	0	8.4	10.5	0.0
12/08/2021 11:51	68.1	304	9.77	255.0	0.0	7	155	12	0	8.1	10.6	0.0
12/08/2021 11:52	69.0	304	9.81	243.8	0.0	5	143	21	0	7.6	10.2	0.0
12/08/2021 11:53	69.9	304	9.81	252.4	0.0	5	146	20	0	8.0	10.2	0.0
12/08/2021 11:54	71.5	304	9.81	244.5	0.0	4	157	18	0	8.1	10.4	0.0
12/08/2021 11:55	71.4	304	9.77	244.6	0.0	4	160	19	0	8.4	10.5	0.0
12/08/2021 11:56	70.9	304	9.74	249.0	0.0	4	165	19	0	8.4	10.6	0.0
12/08/2021 11:57	71.2	304	9.72	252.5	0.0	3	163	20	0	8.6	10.7	0.0
12/08/2021 11:58	71.3	304	9.72	251.7	0.0	3	182	21	0	8.6	10.8	0.0
12/08/2021 11:59	70.1	304	9.72	246.0	0.0	3	193	20	0	8.9	11.0	0.0
12/08/2021 12:00	69.8	304	9.72	248.4	0.0	3	179	24	0	8.7	11.0	0.0
12/08/2021 12:01	69.0	304	9.94	255.3	0.0	4	172	27	0	8.6	10.7	0.0
12/08/2021 12:02	68.4	304	9.97	250.6	0.0	3	186	21	1	8.6	11.0	0.0
12/08/2021 12:03	68.3	304	9.93	252.4	0.0	3	178	24	0	8.6	10.8	0.0
12/08/2021 12:04	67.0	303	9.88	244.7	0.0	4	174	23	0	8.9	11.0	0.0
12/08/2021 12:05	65.9	303	9.85	251.3	0.0	3	176	23	0	8.8	11.1	0.0
12/08/2021 12:06	65.8	303	9.82	248.4	0.0	3	165	19	0	8.7	11.0	0.0
12/08/2021 12:07	65.6	303	9.78	248.5	0.0	4	163	26	0	8.6	10.9	0.0
12/08/2021 12:08	65.5	303	9.78	245.1	0.0	3	160	27	0	8.7	10.8	0.0
12/08/2021 12:09	64.4	302	9.80	255.5	0.0	4	183	31	0	9.2	11.2	0.0
12/08/2021 12:10	64.3	303	9.77	247.8	0.0	4	178	30	0	9.2	11.2	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 12:11	64.4	303	9.76	253.0	0.0	6	192	25	0	9.9	11.6	0.0
12/08/2021 12:12	64.1	303	9.79	250.3	0.0	6	200	27	0	9.7	11.7	0.0
12/08/2021 12:13	63.3	304	9.76	246.3	0.4	6	197	26	0	9.7	11.8	0.0
12/08/2021 12:14	63.8	304	9.76	250.3	0.5	7	180	26	0	9.4	11.6	0.0
12/08/2021 12:15	64.3	304	9.78	249.5	0.5							0.0
12/08/2021 12:16	65.6	304	9.77	251.8	0.1							0.0
12/08/2021 12:17	66.4	304	9.84	243.0	0.0		165	33	0	9.4<	11.0<	0.0
12/08/2021 12:18	66.8	304	9.80	246.3	0.0	7	164	32	0	9.3	11.0	0.0
12/08/2021 12:19	67.1	304	9.79	251.1	0.0	7	177	29	1	9.3	11.1	0.0
12/08/2021 12:20	68.0	304	9.76	252.4	0.0	8	178	28	0	8.7	11.0	0.0
12/08/2021 12:21	68.9	304	9.76	247.3	0.0	8	172	32	0	8.3	10.6	0.0
12/08/2021 12:22	69.7	304	9.74	249.8	0.0	8	179	33	0	8.2	10.5	0.0
12/08/2021 12:23	70.3	304	9.74	248.6	0.0	7	171	34	0	8.0	10.4	0.0
12/08/2021 12:24	70.6	304	9.76	253.6	0.0	8	165	32	0	8.0	10.5	0.0
12/08/2021 12:25	69.9	304	9.75	244.1	0.0	7	166	29	0	8.5	10.4	0.0
12/08/2021 12:26	69.4	304	9.77	246.1	0.0	8	189	30	0	9.1	11.1	0.0
12/08/2021 12:27	68.7	304	9.77	251.7	0.0	9	180	31	0	9.0	11.1	0.0
12/08/2021 12:28	68.6	305	9.77	253.8	0.0	10	181	29	0	8.6	10.9	0.0
12/08/2021 12:29	68.9	307	9.77	253.0	0.0	8	173	30	0	8.6	10.8	0.0
12/08/2021 12:30	69.5	309	9.74	252.0	0.0	7	166	30	0	8.4	10.6	0.0
12/08/2021 12:31	70.2	309	9.76	252.0	0.0	7	172	32	0	8.6	10.7	0.0
12/08/2021 12:32	70.5	310	9.74	249.8	0.0	7	175	32	0	8.2	10.6	0.0
12/08/2021 12:33	70.7	311	9.93	248.9	0.0	5	176	32	0	8.5	10.7	0.0
12/08/2021 12:34	70.0	310	10.12	249.8	0.0	7	177	35	0	8.2	10.5	0.0
12/08/2021 12:35	69.7	310	10.00	250.5	0.0	5	162	33	0	8.3	10.5	0.0
12/08/2021 12:36	69.3	310	9.89	251.3	0.0	8	172	32	0	8.8	10.9	0.0
12/08/2021 12:37	69.9	311	9.82	245.9	0.0	8	168	28	0	8.4	10.8	0.0
12/08/2021 12:38	69.2	312	9.78	246.5	0.0	8	148	32	0	8.4	10.5	0.0
12/08/2021 12:39	68.5	312	9.77	247.1	0.0	7	162	32	0	8.9	10.9	0.0
Period Average =	68.2	305	9.80	249.4	0.1	6	172	26	0	8.7	10.9	0.0
Period Max Value =	71.5	312	10.12	255.5	0.7	10	200	35	1	9.9	11.8	0.0
Period Min Value =	63.3	302	9.72	243.0	0.0	3	143	12	0	7.6	10.2	0.0
Period Totals =	4.1591E+3	1.8602E+4	5.9775E+2	1.5211E+4	3.3000E+0	3.3200E+2	1.0165E+4	1.5200E+3	2.0000E+0	5.1210E+2	6.4020E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	96.7	98.3	98.3	98.3	98.3	98.3	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

CARB 430 Run 2

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 13:13 End of Report: 12/08/2021 14:13 Validation: Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 13:13	70.1	311	9.78	259.1	0.0	7	180	241	0	8.3	10.9	0.0
12/08/2021 13:14	69.9	311	9.76	254.2	0.0	9	169	318	6	8.3	10.5	0.0
12/08/2021 13:15	70.2	311	9.77	244.3	0.0	9	167		18		10.5	0.0
12/08/2021 13:16	69.5	311	9.74	243.7	0.0	11	150		24		10.5	0.0
12/08/2021 13:17	68.8	311	9.73	245.0	0.0	10	156	328	29	9.1<	11.0	0.0
12/08/2021 13:18	69.3	311	9.73	254.9	0.0	11	158	364	38	8.7	10.8	0.0
12/08/2021 13:19	69.6	311	9.73	257.3	0.0	13	148	425	47	8.1	10.4	0.0
12/08/2021 13:20	69.4	310	9.87	253.8	0.0	12	136	462	58	8.3	10.4	0.0
12/08/2021 13:21	67.6	310	9.94	252.6	0.0	17	148	380	67	8.7	10.9	0.0
12/08/2021 13:22	66.4	310	9.92	248.0	0.0	17	154	426	51	8.6	10.9	0.0
12/08/2021 13:23	64.7	309	9.87	246.4	0.0	14	156	381	51	8.9	11.1	0.0
12/08/2021 13:24	63.1	309	9.82	241.4	0.0	11	163	404	45	9.0	11.2	0.0
12/08/2021 13:25	62.4	309	9.77	242.2	0.0	10	159	352	47	9.3	11.4	0.0
12/08/2021 13:26	61.6	309	9.78	247.6	0.0	13	150	351	41	9.3	11.5	0.0
12/08/2021 13:27	61.1	308	9.76	257.1	0.0	13	151	357	38	9.1	11.4	0.0
12/08/2021 13:28	60.4	306	9.75	249.5	0.0	15	149	341	37	9.4	11.6	0.0
12/08/2021 13:29	60.9	306	9.77	250.4	0.0	13	156	354	34	8.5	11.5	0.0
12/08/2021 13:30	62.3	306	9.78	251.4	0.0	16	137	397	31	8.6	10.6	0.0
12/08/2021 13:31	62.5	307	9.73	248.8	0.0	17	166	370	37	9.1	11.1	0.0
12/08/2021 13:32	61.9	306	9.76	246.9	0.0	19	162	339	35	9.0	11.3	0.0
12/08/2021 13:33	61.8	307	9.77	244.7	0.0	19	169	299	31	9.1	11.2	0.0
12/08/2021 13:34	62.4	308	9.76	246.8	0.0	18	166	240	30	8.7	11.0	0.0
12/08/2021 13:35	63.6	310	9.76	247.2	0.0	18	157	231	22	8.3	10.7	0.0
12/08/2021 13:36	65.6	311	9.76	248.2	0.0	17	143	240	18	7.7	10.2	0.0
12/08/2021 13:37	66.4	311	9.78	246.6	0.0	13	152	215	16	8.2	10.2	0.0
12/08/2021 13:38	66.9	312	9.80	247.0	0.0	13	184	184	11	8.2	10.5	0.0
12/08/2021 13:39	66.9	312	9.75	249.4	0.0	16	182	181	9	8.7	10.7	0.0
12/08/2021 13:40	66.3	312	9.77	251.9	0.0	21	184	163	7	8.5	10.9	0.0
12/08/2021 13:41	65.2	312	9.76	254.2	0.0	18	178	167	5	8.5	10.8	0.0
12/08/2021 13:42	63.7	312	9.75	255.8	0.0	17	193	162	5	9.0	11.0	0.0
12/08/2021 13:43	63.0	311	9.78	254.0	0.0	17	185	155	4	8.7	11.0	0.0
12/08/2021 13:44	63.5	311	9.78	251.9	0.1	18	179	155	3	8.3	10.9	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 13:45	64.0	311	9.76	250.2	0.0	16	159	169	3	8.1	10.5	0.0
12/08/2021 13:46	65.7	311	9.78	245.6	0.0	13	139	152	3	8.0	10.5	0.0
12/08/2021 13:47	66.5	312	9.85	251.1	0.0	10	147	137	2	7.7	10.2	0.0
12/08/2021 13:48	65.9	312	9.82	246.7	0.0	9	157	137	2	8.3	10.3	0.0
12/08/2021 13:49	64.8	311	9.81	249.5	0.0	12	162	116	1	8.6	10.9	0.0
12/08/2021 13:50	63.5	311	9.84	248.7	0.0	13	167	105	1	8.8	10.9	0.0
12/08/2021 13:51	62.5	311	9.83	250.5	0.0	11	160	87	0	8.7	11.1	0.0
12/08/2021 13:52	62.2	311	9.79	248.1	0.0	11	169	88	0	8.3	10.8	0.0
12/08/2021 13:53	61.5	310	9.83	243.5	0.0	11	166	83	0	8.2	10.6	0.0
12/08/2021 13:54	63.4	309	9.81	249.5	0.0	8	153	84	0	7.2	10.0	0.0
12/08/2021 13:55	66.4	310	9.76	251.1	0.0	8	151	86	0	7.5	9.9	0.0
12/08/2021 13:56	69.5	311	9.79	251.6	0.0	10	150	86	0	6.6	9.6	0.0
12/08/2021 13:57	70.8	312	9.76	251.4	0.0	8	126	105	0	6.7	9.0	0.0
12/08/2021 13:58	71.0	313	9.74	248.1	0.0	9	162	80	0	8.1	10.2	0.0
12/08/2021 13:59	71.7	314	9.71	251.8	0.0	11	171	79	0	7.9	10.3	0.0
12/08/2021 14:00	72.3	315	9.60	251.0	0.0	12	155	90	0	7.7	10.1	0.0
12/08/2021 14:01	71.8	315	9.72	252.0	0.0	12	149	93	0	7.8	10.1	0.0
12/08/2021 14:02	71.9	316	9.79	248.8	0.0	13	142	93	1	8.0	10.2	0.0
12/08/2021 14:03	71.8	316	9.80	248.3	0.0	12	139	92	1	8.2	10.4	0.0
12/08/2021 14:04	70.0	315	9.77	249.4	0.0	11	151	86	1	8.9	10.8	0.0
12/08/2021 14:05	70.1	315	9.80	247.1	0.0	11	164	79	1	8.3	10.9	0.0
12/08/2021 14:06	71.8	315	9.79	244.7	0.0	14	151	87	0	7.8	10.2	0.0
12/08/2021 14:07	72.0	315	9.78	247.4	0.0	12	150	85	0	8.2	10.3	0.0
12/08/2021 14:08	71.3	315	9.79	246.7	0.0	11	149	80	0	8.7	10.7	0.0
12/08/2021 14:09	71.1	315	9.80	245.6	0.0	10	153	76	0	8.7	11.0	0.0
12/08/2021 14:10	70.6	315	9.81	245.4	0.0	12	147	79	0	8.1	10.5	0.0
12/08/2021 14:11	70.3	315	9.79	246.2	0.0	12	145	75	0	8.4	10.6	0.0
12/08/2021 14:12	69.1	314	9.80	253.8	0.0	12	158	71	0	8.6	10.8	0.0
12/08/2021 14:13	69.1	314	9.81	255.9	0.0	11	155	78	0	8.4	10.7	0.0
Period Average =	66.7	311	9.78	249.4	0.0	13	158	199	15	8.4	10.7	0.0
Period Max Value =	72.3	316	9.94	259.1	0.1	21	193	462	67	9.4	11.6	0.0
Period Min Value =	60.4	306	9.60	241.4	0.0	7	126	71	0	6.6	9.0	0.0
Period Totals =	4.0696E+3	1.8990E+4	5.9671E+2	1.5212E+4	1.0000E-1	7.8700E+2	9.6340E+3	1.1740E+4	9.1100E+2	4.9470E+2	6.5070E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.3	100.0	98.3	100.0	100.0

Data Summary Report

Company: Covanta Marion, Inc.
P.O. Box 9126
Salem, OR 97305

CARB 430 Run 3

Source: Unit #2
Data Group: All Data Groups
Report Name: ! Stack Test - Op & CEM Data - U2-pk
Start of Report: 12/08/2021 14:40 **End of Report:** 12/08/2021 15:40 **Validation:** Valid Data Only

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 14:40	70.0	316	9.76	254.5	0.0	10	157	38	0	8.8	10.8	0.0
12/08/2021 14:41	69.3	316	9.82	256.5	0.0	10	158	37	0	8.8	11.0	0.0
12/08/2021 14:42	67.5	316	9.83	250.7	0.0	13	167	36	0	8.9	11.1	0.0
12/08/2021 14:43	68.2	316	9.85	247.1	0.0	13	164	38	0	8.7	11.0	0.0
12/08/2021 14:44	67.2	315	9.84	246.5	0.0	13	164	37	0	8.8	11.0	0.0
12/08/2021 14:45	66.9	315	9.87	241.9	0.0	10	160	36	0	8.7	10.9	0.0
12/08/2021 14:46	68.4	315	9.87	248.0	0.0	11	163	35	0	8.5	10.8	0.0
12/08/2021 14:47	66.9	315	9.85	251.0	0.0	11	174	36	0	9.3	11.1	0.0
12/08/2021 14:48	66.7	314	9.86	252.3	0.0	10	180	34	0	9.1	11.3	0.0
12/08/2021 14:49	64.8	312	9.83	253.9	0.0	16	187	28	0	8.9	11.2	0.0
12/08/2021 14:50	63.6	311	9.82	254.5	0.0	10	189	28	0	8.5	10.8	0.0
12/08/2021 14:51	65.5	311	9.79	248.6	0.0	8	182	29	0	8.3	10.7	0.0
12/08/2021 14:52	68.7	312	9.78	244.6	0.0	10	156	35	0	7.4	10.0	0.0
12/08/2021 14:53	70.5	313	9.77	250.0	0.0	13	142	37	0	8.0	10.0	0.0
12/08/2021 14:54	69.9	314	9.79	249.7	0.0	12	153	32	0	9.1	10.8	0.0
12/08/2021 14:55	69.5	314	9.78	244.7	0.0	12	171	29	0	9.4	11.5	0.0
12/08/2021 14:56	67.1	315	9.82	242.6	0.0	13	182	29	0	9.7	11.6	0.0
12/08/2021 14:57	65.7	315	9.81	245.2	0.0	17	186	26	0	9.3	11.7	0.0
12/08/2021 14:58	64.5	315	9.80	251.7	0.0	17	176	29	0	9.2	11.3	0.0
12/08/2021 14:59	63.2	315	9.82	254.8	0.0	15	189	29	0	9.9	11.7	0.0
12/08/2021 15:00	61.9	314	9.80	257.5	0.0	14	200	25	0	9.9	11.9	0.0
12/08/2021 15:01	61.7	313	9.83	252.8	0.3	14	206	23	0	9.2	11.7	0.0
12/08/2021 15:02	63.6	312	9.84	242.1	0.0	8	184	23	0	8.4	11.0	0.0
12/08/2021 15:03	65.0	313	9.83	243.4	0.3	12	152	35	0	8.6	10.7	0.0
12/08/2021 15:04	65.4	313	10.48	255.0	0.0	16	152	31	0	9.1	11.1	0.0
12/08/2021 15:05	66.4	313	10.18	252.8	0.0	17	156	29	0	8.9	11.2	0.0
12/08/2021 15:06	67.1	314	10.03	253.8	0.0	14	146	33	0	8.3	10.7	0.0
12/08/2021 15:07	66.6	314	9.96	256.7	0.0	14	148	30	0	8.8	10.9	0.0
12/08/2021 15:08	65.7	314	9.88	256.0	0.0	11	161	28	0	9.1	11.2	0.0
12/08/2021 15:09	65.0	314	9.83	255.2	0.0	10	169	29	0	9.3	11.4	0.0
12/08/2021 15:10	64.2	314	9.81	256.1	0.0	13	163	25	0	9.1	11.4	0.0
12/08/2021 15:11	65.7	314	9.83	256.6	0.0	10	136	28	0	7.9	10.8	0.0

Group#-Channel#	G21-C35	G21-C37	G21-C40	G21-C39	G21-C3	G21-C24	G21-C12	G21-C28	G21-C8	G21-C17	G21-C1	G21-C2
Long Descrip.	U2-1Min St	U2-1Min Ba	U2-1Min Ca	U2-1Min Li	U2-1Min Am	U2-1Min Ou	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min In	U2-1Min Ou	U2-1Min Au
Short Descrip.	SteamFl	BagHTemp	CarbInj	LimeFlow	NH3 Flow	COHIoc	NOxoc	SO2ic	SO2oc	O2i	O2o	AuxGasFlow
Units	Yes/No	Yes/No	Yes/No	Yes/No	GPH	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	KSCFH
Range	0-100	0-500	0-50	0-1200	0-60	0-50000	0-10000	0-20000	0-2000	0-25	0-25	0-50
12/08/2021 15:12	68.2	314	9.85	256.5	0.0	11	114	46	0	7.4	9.9	0.0
12/08/2021 15:13	70.2	314	9.85	255.7	0.0	10	114	36	0	7.5	9.9	0.0
12/08/2021 15:14	70.8	313	9.82	257.5	0.0	6	118	32	0	7.3	10.0	0.0
12/08/2021 15:15	71.0	313	9.83	260.5	0.0	5	127		0		10.1	0.0
12/08/2021 15:16	71.7	314	9.83	258.1	0.0	7	136		0		10.4	0.0
12/08/2021 15:17	72.4	314	9.86	254.5	0.0	7	144	30	0	8.4<	10.3	0.0
12/08/2021 15:18	73.3	314	9.84	252.4	0.0	5	142	32	0	8.3	10.3	0.0
12/08/2021 15:19	74.3	315	9.79	270.8	0.0	5	137	34	0	8.1	10.1	0.0
12/08/2021 15:20	74.5	314	9.76	304.4	0.0	7	132	34	0	8.2	10.3	0.0
12/08/2021 15:21	73.0	314	9.74	232.5	0.0	7	139	31	0	8.9	10.8	0.0
12/08/2021 15:22	70.9	314	9.64	234.1	0.0	6	160	26	0	9.6	11.5	0.0
12/08/2021 15:23	68.9	314	9.78	236.8	0.0	7	167	26	0	8.8	11.3	0.0
12/08/2021 15:24	69.0	315	9.82	236.5	0.0	8	161	26	0	8.7	11.0	0.0
12/08/2021 15:25	69.6	315	9.84	231.8	0.0	7	151	26	0	8.3	10.7	0.0
12/08/2021 15:26	70.1	315	9.83	192.4	0.0	8	156	28	0	8.5	10.7	0.0
12/08/2021 15:27	69.8	316	9.81	190.7	0.0	10	174	29	0	9.2	11.1	0.0
12/08/2021 15:28	69.6	317	9.78	209.5	0.0	7	172	27	0	9.1	11.4	0.0
12/08/2021 15:29	69.2	317	9.77	224.2	0.0	9	165	31	0	9.0	11.1	0.0
12/08/2021 15:30	69.3	316	9.82	235.6	0.0	7	160	29	0	8.6	11.1	0.0
12/08/2021 15:31	69.0	316	9.85	246.5	0.0	8	150	34	0	8.6	10.7	0.0
12/08/2021 15:32	68.4	315	9.89	245.8	0.0	8	159	33	0	8.7	10.9	0.0
12/08/2021 15:33	67.5	315	9.94	262.6	0.0	10	155	30	0	8.8	11.1	0.0
12/08/2021 15:34	68.3	314	9.93	260.7	0.0	8	157	30	0	8.5	10.9	0.0
12/08/2021 15:35	68.5	313	9.90	251.4	0.0	8	150	31	0	8.5	10.7	0.0
12/08/2021 15:36	67.3	313	9.88	250.9	0.0	7	179	28	0	8.9	11.1	0.0
12/08/2021 15:37	68.2	313	9.85	253.8	0.0	7	177	29	0	8.6	11.0	0.0
12/08/2021 15:38	67.0	312	9.83	248.1	0.0	7	161	31	0	8.5	10.8	0.0
12/08/2021 15:39	67.3	312	9.83	307.5	0.0	6	157	31	0	8.3	10.8	0.0
12/08/2021 15:40	68.5	311	9.86	310.4	0.0	7	160	34	0	7.9	10.5	0.0
Period Average =	68.0	314	9.85	250.1	0.0	10	160	31	0	8.7	10.9	0.0
Period Max Value =	74.5	317	10.48	310.4	0.3	17	206	46	0	9.9	11.9	0.0
Period Min Value =	61.7	311	9.64	190.7	0.0	5	114	23	0	7.3	9.9	0.0
Period Totals =	4.1482E+3	1.9159E+4	6.0068E+2	1.5259E+4	6.0000E-1	6.1200E+2	9.7470E+3	1.8310E+3	0.0000E+0	5.1310E+2	6.6480E+2	0.0000E+0
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.3	100.0	98.3	100.0	100.0

APPENDIX C
LABORATORY ANALYSIS DATA

Appendix C.1
Hydrogen Halides & Halogens Analyses

Montrose Air Quality Services, LLC – Portland

13585 NE Whitaker Way
Portland, OR 97230

Covanta Marion, INC.

Unit 1 Acute
Client Project # PROJ-010935

Analytical Report (1221-086)

EPA Method 26A

Hydrogen chloride, Hydrogen fluoride, Hydrogen bromide, Chlorine, Bromine

EPA Method 29

Aluminum, Iron, Molybdenum, Potassium, Vanadium, Mercury, Phosphorus, Beryllium, Chromium, Manganese, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium, Antimony, Barium, Thallium, Lead

Enthalpy Analytical, LLC
Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
800-1 Capitola Drive Durham, NC 27713-4385

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)

This analytical report was prepared in Portable Document Format (.PDF) and contains 247 pages.

Quentisha L. Forrester

QA Review Performed by – Quentisha L. Forrester

Digitally signed by Quentisha Forrester
Date: 2022.01.07 18:00:30 -05'00'

Report Issued: 01/07/2022

ENTHALPY ANALYTICAL

Summary of Results

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-2 EPA Method 26A (H2SO4) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Summary Table

Sample ID	Hydrogen Bromide Catch Weight (ug)	Hydrogen Chloride Catch Weight (ug)	Hydrogen Fluoride Catch Weight (ug)
Chronic-R1	268	8,405	22.6 ND
Chronic-R2	201 J	12,712	22.6 ND
Chronic-R3	219	9,231	21.7 ND
Chronic-FB	13.9 ND	1,925	14.5 ND
Chronic-H2SO4	13.6 ND	746	14.2 ND
Chronic-DI	13.4 ND	17.5 J	13.9 ND
Audit-E050-1140-1	50.5 ND	20,936	43,177

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-3 EPA Method 26A (NaOH) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Summary Table

Sample ID	Bromine Catch Weight (ug)	Chlorine Catch Weight (ug)
Chronic-R1	34.5 ND	292 J
Chronic-R2	31.3 ND	279 J
Chronic-R3	33.5 ND	308 J
Chronic-FB	27.5 ND	96.1 J
Chronic-NaOH	21.0 ND	82.6 J
Chronic-DI	26.5 ND	31.9 J
Audit	6,419	39,354

Results

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-1 EPA Method 26A Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Hydrogen Chloride as Chloride

Sample ID	Filename #1	Filename #2	MDL (ug/mL)	Curve Min. (ug/mL)	Curve Max. (ug/mL)	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Liquid Vol. (mL)	Conv. Factor	Catch Weight (ug)	Flag	pH
M26A Acute R1	049	050	0.0499	0.499	30.6	4.66	4.65	0.0	15.0	15.1	0.2	15.1	1	420	1.028	6,502		0
M26A Acute R2	055	056	0.0499	0.499	30.6	4.66	4.66	0.0	23.9	24.1	0.2	24.0	1	430	1.028	10,615		0

Hydrogen Fluoride as Fluoride

Sample ID	Filename #1	Filename #2	MDL (ug/mL)	Curve Min. (ug/mL)	Curve Max. (ug/mL)	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Liquid Vol. (mL)	Conv. Factor	Catch Weight (ug)	Flag	pH
M26A Acute R1	049	050	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	420	1.053	22.1	ND	0
M26A Acute R2	055	056	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	430	1.053	22.6	ND	0

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-1 EPA Method 26A Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Matrix Spike Recovery

Enthalpy Sample ID	Compound	Filename #1	Filename #2	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Vol. (mL)	Catch Weight (ug)	Flag
1221-086.MS-Acute-R1.H2SO4	Chloride	051	052	4.66	4.66	0.0	19.4	19.5	0.1	19.4	1	0.8	15.5	
												Native Amount (ug):	11.4	
												Mass Spiked:	4.00	
												Recovery (%):	103	
1221-086.MSD-Acute-R1.H2SO4	Chloride	053	054	4.66	4.66	0.0	19.4	19.4	0.0	19.4	1	0.8	15.5	
												Native Amount (ug):	11.4	
												Mass Spiked:	4.00	
												Recovery (%):	102	
1221-086.MS-Acute-R1.H2SO4	Fluoride	051	052	3.16	3.16	0.0	4.83	4.87	0.4	4.85	1	0.8	3.88	
												Native Amount (ug):	0	
												Mass Spiked:	4.00	
												Recovery (%):	97.0	
1221-086.MSD-Acute-R1.H2SO4	Fluoride	053	054	3.16	3.16	0.0	4.86	4.84	0.2	4.85	1	0.8	3.88	
												Native Amount (ug):	0	
												Mass Spiked:	4.00	
												Recovery (%):	97.0	

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-2 EPA Method 26A (H2SO4) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Hydrogen Bromide as Bromide

Sample ID	Filename #1	Filename #2	MDL (ug/mL)	Curve Min. (ug/mL)	Curve Max. (ug/mL)	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Liquid Vol. (mL)	Conv. Factor	Catch Weight (ug)	Flag	pH
M26A Chronic R1 H2SO4	057	058	0.0499	0.499	30.6	6.82	6.82	0.0	0.609	0.621	1.0	0.615	1	430	1.013	268		0
M26A Chronic R2 H2SO4	069	070	0.0499	0.499	30.6	6.83	6.83	0.0	0.462	0.461	0.1	0.461	1	430	1.013	201	J	0
M26A Chronic R3 H2SO4	071	072	0.0499	0.499	30.6	6.83	6.83	0.0	0.522	0.527	0.5	0.524	1	413	1.013	219		0
M26A Chronic FB H2SO4	073	074	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	275	1.013	13.9	ND	0
M26A Chronic RB H2SO4	075	076	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	270	1.013	13.6	ND	0
M26A Chronic RB DI	077	078	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	265	1.013	13.4	ND	7
Audit Halides	079	080	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	1000	1.013	50.5	ND	

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-2 EPA Method 26A (H2SO4) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Hydrogen Chloride as Chloride

Sample ID	Filename #1	Filename #2	MDL (ug/mL)	Curve Min. (ug/mL)	Curve Max. (ug/mL)	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Liquid Vol. (mL)	Conv. Factor	Catch Weight (ug)	Flag	pH
M26A Chronic R1 H2SO4	057	058	0.0499	0.499	30.6	4.66	4.66	0.0	18.9	19.1	0.3	19.0	1	430	1.028	8,405		0
M26A Chronic R2 H2SO4	069	070	0.0499	0.499	30.6	4.67	4.67	0.0	28.7	28.7	0.0	28.7	1	430	1.028	12,712		0
M26A Chronic R3 H2SO4	071	072	0.0499	0.499	30.6	4.66	4.66	0.0	21.7	21.7	0.1	21.7	1	413	1.028	9,231		0
M26A Chronic FB H2SO4	073	074	0.0499	0.499	30.6	4.66	4.66	0.0	6.80	6.81	0.1	6.81	1	275	1.028	1,925		0
M26A Chronic RB H2SO4	075	076	0.0499	0.499	30.6	4.66	4.66	0.0	2.68	2.70	0.4	2.69	1	270	1.028	746		0
M26A Chronic RB DI	077	078	0.0499	0.499	30.6	4.64	4.64	0.0	0.0647	0.0636	0.9	0.0642	1	265	1.028	17.5	J	7
Audit Halides	079	080	0.0499	0.499	30.6	4.67	4.67	0.0	20.2	20.5	0.7	20.4	1	1000	1.028	20,936		

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-2 EPA Method 26A (H2SO4) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Hydrogen Fluoride as Fluoride

Sample ID	Filename #1	Filename #2	MDL (ug/mL)	Curve Min. (ug/mL)	Curve Max. (ug/mL)	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Liquid Vol. (mL)	Conv. Factor	Catch Weight (ug)	Flag	pH
M26A Chronic R1 H2SO4	057	058	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	430	1.053	22.6	ND	0
M26A Chronic R2 H2SO4	069	070	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	430	1.053	22.6	ND	0
M26A Chronic R3 H2SO4	071	072	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	413	1.053	21.7	ND	0
M26A Chronic FB H2SO4	073	074	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	275	1.053	14.5	ND	0
M26A Chronic RB H2SO4	075	076	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	270	1.053	14.2	ND	0
M26A Chronic RB DI	077	078	0.0499	0.499	30.6				0.0499	0.0499		0.0499	1	265	1.053	13.9	ND	7
Audit Halides	081	082	0.0499	0.499	30.6	3.17	3.17	0.0	4.11	4.09	0.2	4.10	10	1000	1.053	43,177		

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-2 EPA Method 26A (H2SO4) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Matrix Spike Recovery

Enthalpy Sample ID	Compound	Filename #1	Filename #2	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Vol. (mL)	Catch Weight (ug)	Flag
1221-086.MS-Chronic-R1.H2SO4	Bromide	065	066	6.82	6.82	0.0	5.28	5.36	0.8	5.32	1	0.8	4.25	
												Native Amount (ug):	0.467	
												Mass Spiked:	4.00	
												Recovery (%):	94.6	
1221-086.MSD-Chronic-R1.H2SO4	Bromide	067	068	6.82	6.82	0.0	5.31	5.32	0.1	5.31	1	0.8	4.25	
												Native Amount (ug):	0.467	
												Mass Spiked:	4.00	
												Recovery (%):	94.5	
1221-086.MS-Chronic-R1.H2SO4	Chloride	065	066	4.66	4.66	0.0	23.2	23.3	0.2	23.3	1	0.8	18.6	
												Native Amount (ug):	14.4	
												Mass Spiked:	4.00	
												Recovery (%):	104	

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-2 EPA Method 26A (H2SO4) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Matrix Spike Recovery

Enthalpy Sample ID	Compound	Filename #1	Filename #2	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Vol. (mL)	Catch Weight (ug)	Flag
1221-086.MSD-Chronic-R1.H2SO4	Chloride	067	068	4.66	4.67	0.0	23.5	23.4	0.0	23.5	1	0.8	18.8	
												Native Amount (ug):	14.4	
												Mass Spiked:	4.00	
												Recovery (%):	108	
1221-086.MS-Chronic-R1.H2SO4	Fluoride	065	066	3.16	3.16	0.0	4.97	5.05	0.8	5.01	1	0.8	4.01	
												Native Amount (ug):	0	
												Mass Spiked:	4.00	
												Recovery (%):	100	
1221-086.MSD-Chronic-R1.H2SO4	Fluoride	067	068	3.16	3.16	0.1	5.02	5.01	0.0	5.02	1	0.8	4.01	
												Native Amount (ug):	0	
												Mass Spiked:	4.00	
												Recovery (%):	100	

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-3 EPA Method 26A (NaOH) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Bromine as Bromide

Sample ID	Filename #1	Filename #2	MDL (ug/mL)	Curve Min. (ug/mL)	Curve Max. (ug/mL)	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Liquid Vol. (mL)	Conv. Factor	Catch Weight (ug)	Flag	pH
M26A Chronic R1 NaOH	038	039	0.100	1.00	30.0				0.100	0.100		0.100	1	345	1.000	34.5	ND	9
M26A Chronic R2 NaOH	044	045	0.100	1.00	30.0				0.100	0.100		0.100	1	313	1.000	31.3	ND	9
M26A Chronic R3 NaOH	046	047	0.100	1.00	30.0				0.100	0.100		0.100	1	335	1.000	33.5	ND	9
M26A Chronic FB NaOH	048	049	0.100	1.00	30.0				0.100	0.100		0.100	1	275	1.000	27.5	ND	14
M26A Chronic RB NaOH	050	051	0.100	1.00	30.0				0.100	0.100		0.100	1	210	1.000	21.0	ND	14
M26A Chronic RB DI	052	053	0.100	1.00	30.0				0.100	0.100		0.100	1	265	1.000	26.5	ND	7
Audit Halogens	058	059	0.100	1.00	30.0	6.66	6.67	0.0	6.44	6.40	0.3	6.42	1	1000	1.000	6,419		

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-3 EPA Method 26A (NaOH) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Chlorine as Chloride

Sample ID	Filename #1	Filename #2	MDL (ug/mL)	Curve Min. (ug/mL)	Curve Max. (ug/mL)	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Liquid Vol. (mL)	Conv. Factor	Catch Weight (ug)	Flag	pH
M26A Chronic R1 NaOH	018	019	0.100	1.00	30.0	4.57	4.58	0.0	0.210	0.213	0.8	0.211	4	345	1.000	292	J	9
M26A Chronic R2 NaOH	020	021	0.100	1.00	30.0	4.58	4.57	0.0	0.226	0.219	1.5	0.223	4	313	1.000	279	J	9
M26A Chronic R3 NaOH	022	023	0.100	1.00	30.0	4.57	4.57	0.0	0.229	0.231	0.5	0.230	4	335	1.000	308	J	9
M26A Chronic FB NaOH	048	049	0.100	1.00	30.0	4.52	4.52	0.0	0.354	0.345	1.3	0.349	1	275	1.000	96.1	J	14
M26A Chronic RB NaOH	050	051	0.100	1.00	30.0	4.48	4.48	0.0	0.393	0.394	0.2	0.393	1	210	1.000	82.6	J	14
M26A Chronic RB DI	052	053	0.100	1.00	30.0	4.65	4.65	0.0	0.122	0.119	0.9	0.120	1	265	1.000	31.9	J	7
Audit Halogens	060	061	0.100	1.00	30.0	4.55	4.56	0.0	3.94	3.93	0.0	3.94	10	1000	1.000	39,354		

Enthalpy Analytical

Company: Montrose Air Quality Services, LLC - Portland

Job No.: 1221-086-3 EPA Method 26A (NaOH) Analysis

Client No.: PROJ-010935 Site: Covanta Marion, Inc

Matrix Spike Recovery

Enthalpy Sample ID	Compound	Filename #1	Filename #2	Ret. Time (min.)	Ret. Time (min.)	%diff. RT	Conc. # 1 (ug/mL)	Conc. # 2 (ug/mL)	%diff. conc.	Avg. Conc. (ug/mL)	DF	Vol. (mL)	Catch Weight (ug)	Flag
1221-086.MS-Chronic-R1.NaOH	Bromide	024	025	6.74	6.74	0.0	4.89	4.89	0.0	4.89	1	0.8	3.91	
												Native Amount (ug):	0	
												Mass Spiked:	4.00	
												Recovery (%):	97.8	
1221-086.MSD-Chronic-R1.NaOH	Bromide	026	027	6.74	6.74	0.0	4.80	4.89	1.0	4.84	1	0.8	3.88	
												Native Amount (ug):	0	
												Mass Spiked:	4.00	
												Recovery (%):	96.9	
1221-086.MS-Chronic-R1.NaOH	Chloride	024	025	4.58	4.58	0.0	5.16	5.16	0.0	5.16	1	0.8	4.13	
												Native Amount (ug):	0.161	
												Mass Spiked:	4.00	
												Recovery (%):	99.2	
1221-086.MSD-Chronic-R1.NaOH	Chloride	026	027	4.58	4.58	0.0	5.06	5.16	1.0	5.11	1	0.8	4.09	
												Native Amount (ug):	0.161	
												Mass Spiked:	4.00	
												Recovery (%):	98.2	

Narrative Summary

Enthalpy Analytical Narrative Summary

Company Job No. Client ID.	Montrose Air Quality Services, LLC - Portland 1221-086 EPA Method 26A Analysis PROJ-010935 Site: Covanta Marion, Inc
Custody	Alyssa Miller received the samples on December 10, 2021 at 13.7 °C after being relinquished by Montrose Air Quality Services, LLC - Portland. The samples were received in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC.
Analysis	The acid fraction samples were analyzed for hydrogen chloride, hydrogen fluoride, and hydrogen bromide while the base fraction samples were analyzed for chlorine and bromine using the analytical procedures in Section 11.0 of EPA Method 26A, Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic Method. All sample aliquots and standards are prepared, stored and analyzed using high-density polyethylene containers. Client samples are retained in the container as received. Sample catch weight results were determined using the sample volumes measured by the laboratory. The Dionex Ion Chromatograph "Raphael" equipped with a Conductivity Detector was used for these analyses.
Calibration	The calibration curves are included in the Raw Data section of this report. A quadratic curve type was used instead of the method-specified linear curve.
Chrom. Conditions	The acquisition method *AS22 ASAP* was used for the hydrogen chloride, hydrogen fluoride, and hydrogen bromide analyses while the acquisition method *AS22 ASAP Base* was used for the chlorine and bromine analyses. Both methods may be available upon request.

Enthalpy Analytical Narrative Summary

Company Job No. Client ID.	Montrose Air Quality Services, LLC - Portland 1221-086 EPA Method 26A Analysis PROJ-010935 Site: Covanta Marion, Inc

QC Notes	The samples were analyzed within the 28-day holding time specified by the method. The analyses of the laboratory reagent blanks did not contain any of the analytes of interest at concentrations greater than the LOQ. The analyses of the client's field H2SO4 blank and reagent H2SO4 blank contained hydrogen chloride at a detectable concentration. No other client blank samples contained the analytes of interest at concentrations greater than the LOQ. Duplicate matrix spikes were prepared using aliquots of *M26A Acute R1* and *M26A Chronic R1*. All matrix spikes met method spike recovery criteria of 80-120%. The analysis of second source standards also served as laboratory control samples and met the laboratory acceptance criteria of ±5% of the tag value.

Reporting Notes	The samples were analyzed for chloride, fluoride, and bromide but the results have been reported as hydrogen chloride, hydrogen fluoride, and hydrogen bromide. The results were converted using factors of 1.028, 1.053, and 1.013 respectively to account for the additional hydrogen masses. The samples were analyzed for chloride and bromide but the results have been reported as chlorine and bromine. No conversion factor was needed as the masses are the same for these forms in solution. These analyses met the requirements of the TNI Standard. Any deviations from the requirements of the reference method or TNI Standard have been stated above. The results presented in this report are representative of the samples as provided to the laboratory.

General Reporting Notes

The following are general reporting notes that are applicable to all Enthalpy Analytical, LLC data reports, unless specifically noted otherwise.

- Any analysis which refers to the method as ***"Type"*** represents a planned deviation from the reference method. For instance a Hydrogen Sulfide assay from a Tedlar bag would be labeled as "EPA Method 16-Type" because Tedlar bags are not mentioned as one of the collection options in EPA Method 16.
- The acronym ***MDL*** represents the Minimum Detection Limit. Below this value the laboratory cannot determine the presence of the analyte of interest reliably.
- The acronym ***LOQ*** represents the Limit of Quantification. Below this value the laboratory cannot quantitate the analyte of interest within the criteria of the method.
- The acronym ***ND*** following a value indicates a non-detect or analytical result below the MDL.
- The letter ***J*** in the Qualifier or Flag column in the results indicates that the value is between the MDL and the LOQ. The laboratory can positively identify the analyte of interest as present, but the value should be considered an estimate.
- The letter ***E*** in the Qualifier or Flag column indicates an analytical result exceeding 100% of the highest calibration point. The associated value should be considered as an estimate.
- Sample results are presented 'as measured' for single injection methodologies, or an average value if multiple injections are made. If all injections are below the MDL, the sample is considered non-detect and the ND value is presented. If one, but not all, are below the MDL, the MDL value is used for any injections that are below the MDL. For example, if the MDL is 0.500 and LOQ is 1.00, and the instrument measures 0.355, 0.620, and 0.442 - the result reported is the average of 0.500, 0.620, and 0.500 - - - i.e. 0.540 with a J flag.
- When a spike recovery (Bag Spike, Collocated Spike Train, or liquid matrix spike) is being calculated, the native (unspiked) sample result is used in the calculations, as long as the value is above the MDL. If a sample is ND, then 0 is used as the native amount (not the MDL value).
- The acronym ***DF*** represents Dilution Factor. This number represents dilution of the sample during the preparation and/or analysis process. The analytical result taken from a laboratory instrument is multiplied by the DF to determine the final undiluted sample results.
- The addition of ***MS*** to the Sample ID represents a Matrix Spike. An aliquot of an actual sample is spiked with a known amount of analyte so that a percent recovery value can be determined. The MS analysis indicates what effect the sample matrix may have on the target analyte, i.e. whether or not anything in the sample matrix interferes with the analysis of the analyte(s).

General Reporting Notes
(continued)

- The addition of ***MSD*** to the Sample ID represents a Matrix Spike Duplicate. Prepared in the same manner as a MS, the use of duplicate matrix spikes allows further confirmation of laboratory quality by showing the consistency of results gained by performing the same steps multiple times.

- The addition of ***LD*** to the Sample ID represents a Laboratory Duplicate. The analyst prepares an additional aliquot of sample for testing and the results of the duplicate analysis are compared to the initial result. The result should have a difference value of within 10% of the initial result (if the results of the original analysis are greater than the LOQ).

- The addition of ***AD*** to the Sample ID represents an Alternate Dilution. The analyst prepares an additional aliquot at a different dilution factor (usually double the initial factor). This analysis helps confirm that no additional compound is present and coeluting or sharing absorbance with the analyte of interest, as they would have a different response/absorbance than the analyte of interest.

- The Sample ID ***LCS*** represents a Laboratory Control Sample. Clean matrix, similar to the client sample matrix, prepared and analyzed by the laboratory using the same reagents, spiking standards and procedures used for the client samples. The LCS is used to assess the control of the laboratory's analytical system. Whenever spikes are prepared for our client projects, two spikes are retained as LCSs. The LCSs are labeled with the associated project number and kept in-house at the appropriate temperature conditions. When the project samples are received for analysis, the LCSs are analyzed to confirm that the analyte could be recovered from the media, separate from the samples which were used on the project and which may have been affected by source matrix, sample collection, and/or sample transport.

- **Significant Figures**: Where the reported value is much greater than unity (1.00) in the units expressed, the number is rounded to a whole number of units, rather than to 3 significant figures. For example, a value of 10,456.45 ug catch is rounded to 10,456 ug. There are five significant digits displayed, but no confidence should be placed on more than two significant digits. In the case of small numbers, generally 3 significant figures are presented, but still only 2 should be used with confidence. Many neat materials are only certified to 3 digits, and as the mathematically correct final result is always 1 digit less than all its pre-cursors - 2 significant figures are what are most defensible.

- **Manual Integration**: The data systems used for processing will flag manually integrated peaks with an "M". There are several reasons a peak may be manually integrated. These reasons will be identified by the following two letter designations on sample chromatograms, if provided in the report. The peak was ***not integrated*** by the software **"NI"**, the peak was ***integrated incorrectly*** by the software **"II"** or the ***wrong peak*** was integrated by the software **"WP"**. These codes will accompany the analyst's manual integration stamp placed next to the compound name on the chromatogram.

ENTHALPY ANALYTICAL

Sample Custody

MONTROSE AIR QUALITY SERVICES

CHAIN OF CUSTODY

Portland Location
13585 NE Whitaker Way
Portland, OR 97230
Phone (503) 255-5050 | Fax (503) 255-0505

Lab info:
Enthalpy Analytical
Durham NC

Client / Project:	**Project / Sample Location:**	**Test / Analytical Method:**
Covanta Marion, Inc	Stack 2 Chronic	EPA 26A (halides, halogens)
Project No.: PROJ-010935	**Purchase Order No:**	**Special Analysis / Detection Limit / Reporting Instructions:**
Send Analytical Report To: Portland QA/QC: PortlandQA-QC@montrose-env.com pbecker@montrose-env.com / echetty@montrose	**Sampler or PM Signature:** Peter Becker	HCl, HF, HBr, Cl2 and Br2

Run / Sample No.	Date	Time	Containers	Sample Fraction	Reagent	Lab / Sample ID No.
1-26- Chronic	12.8.21	11:37	1	Container 3 - [KO], Impingers 1 & 2 contents, rinses	0.1N H2SO4	
"	12.8.21	11:45	1	Container 4 - Impingers 3 & 4 contents and rinses	0.1N NaOH	
2-26A-Chronic	12.8.21	12:59	2	Same as Run 1	"	
3-26A- Chronic	12.8.21	18:46	2	Same as Run 1	"	
FB-26A-Chronic	12.8.21	16:30	2	Field blank - same containers as Run 1	"	
RB-H2SO4-Chronic	12.8.21	16:00	1	H2SO4 reagent Blank	0.1N H2SO4	
RB-NaOH-Chronic	12.8.21	16:04	1	NaOH reagent Blank	0.1N NaOH	
RB-DI-Chronic	12.8.21	16:05	1	DI reagent Blank	DI	
Audit Sample	12.8.21	17:00	1	Halides in Solution	"	
Audit Sample	12.8.21	17:00	1	Halogens in Solution	"	
13.7°C	Raytek 2, good condition in Bnm3 12.10.21					
Total Containers			11			

Relinquished by	Date	Time	Received by	Date	Time	Temp.
Peter Becker	12.9.21	15:06	Alyssa McMullin	12-10-21	1015	13.7
Relinquished by	Date	Time	Received by	Date	Time	Temp.
Relinquished by	Date	Time	Received by	Date	Time	Temp.

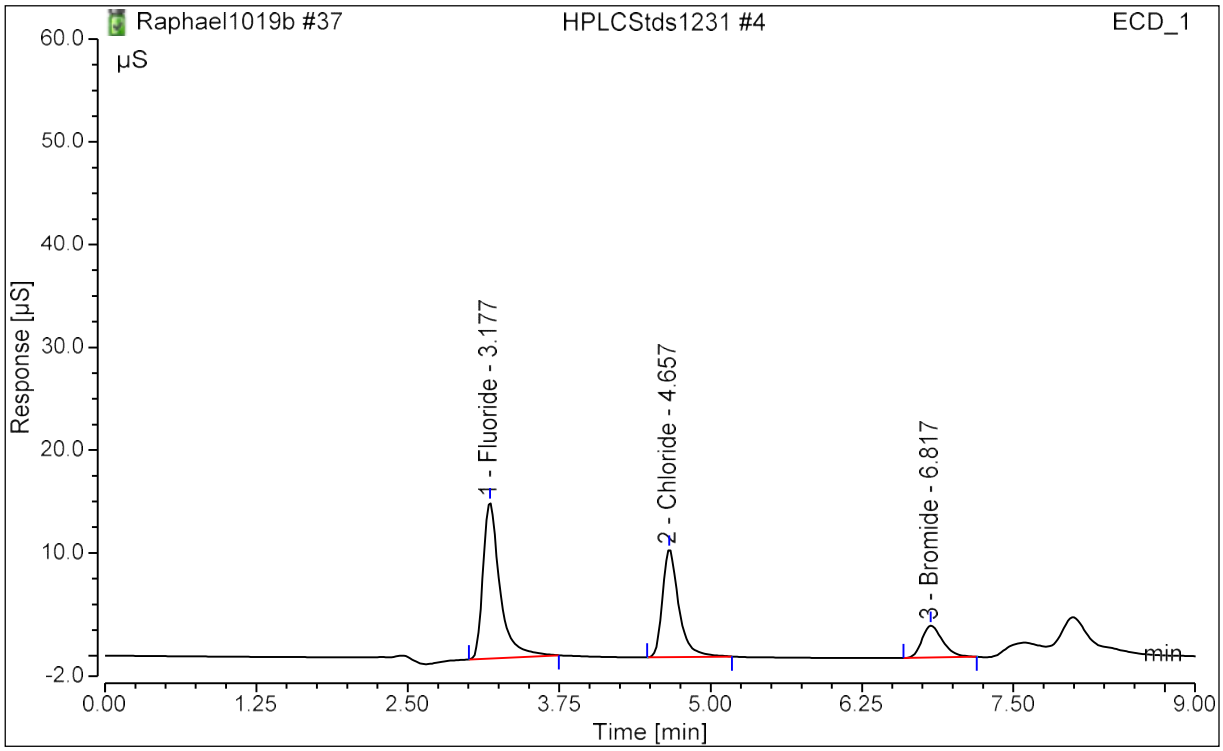
Key: [KO] = Knockout impinger, "[ ]" denotes an option in the method, FB = Field Blank, RB = Reagent Blank

MAQS Chain of Custody Macro-R4

Raw Data

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 20:37**	Run Time:	**14.50**

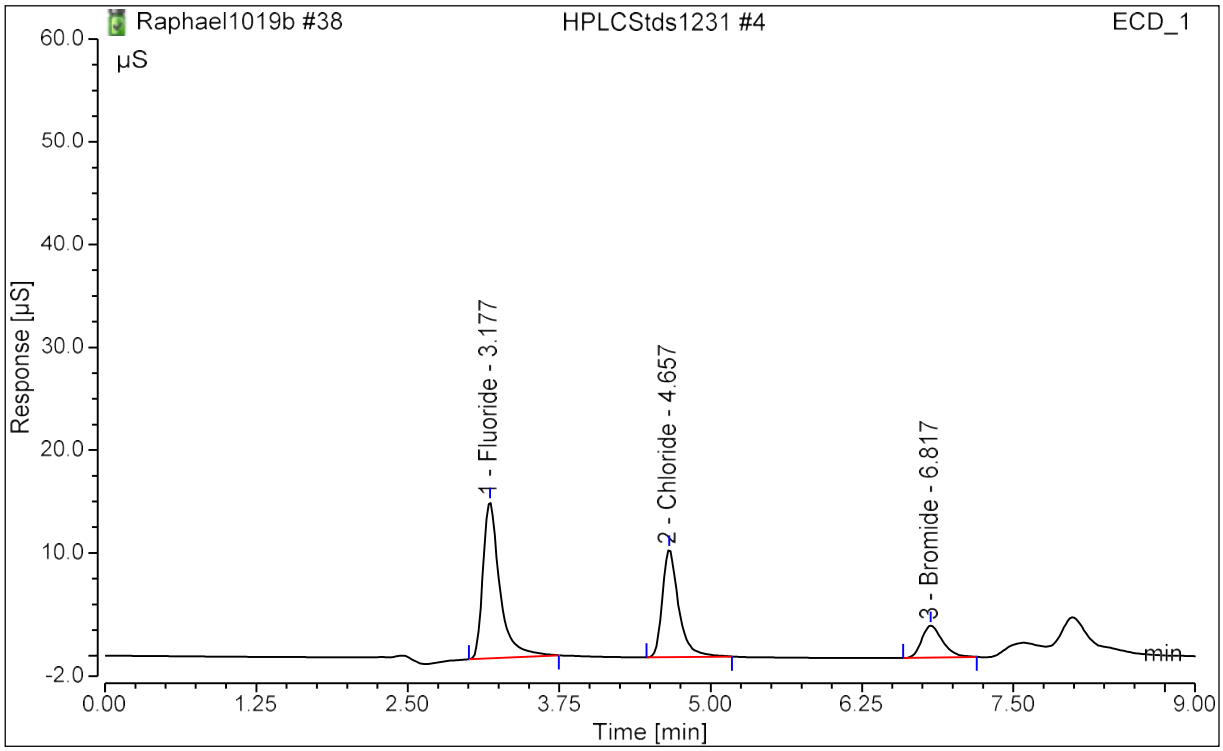


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	2.462	15.201	10.03481	FALSE	FALSE
2	4.66	Chloride	1.648	10.507	9.94951	FALSE	FALSE
3	6.82	Bromide	0.620	3.112	10.06521	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 20:53**	Run Time:	**14.50**

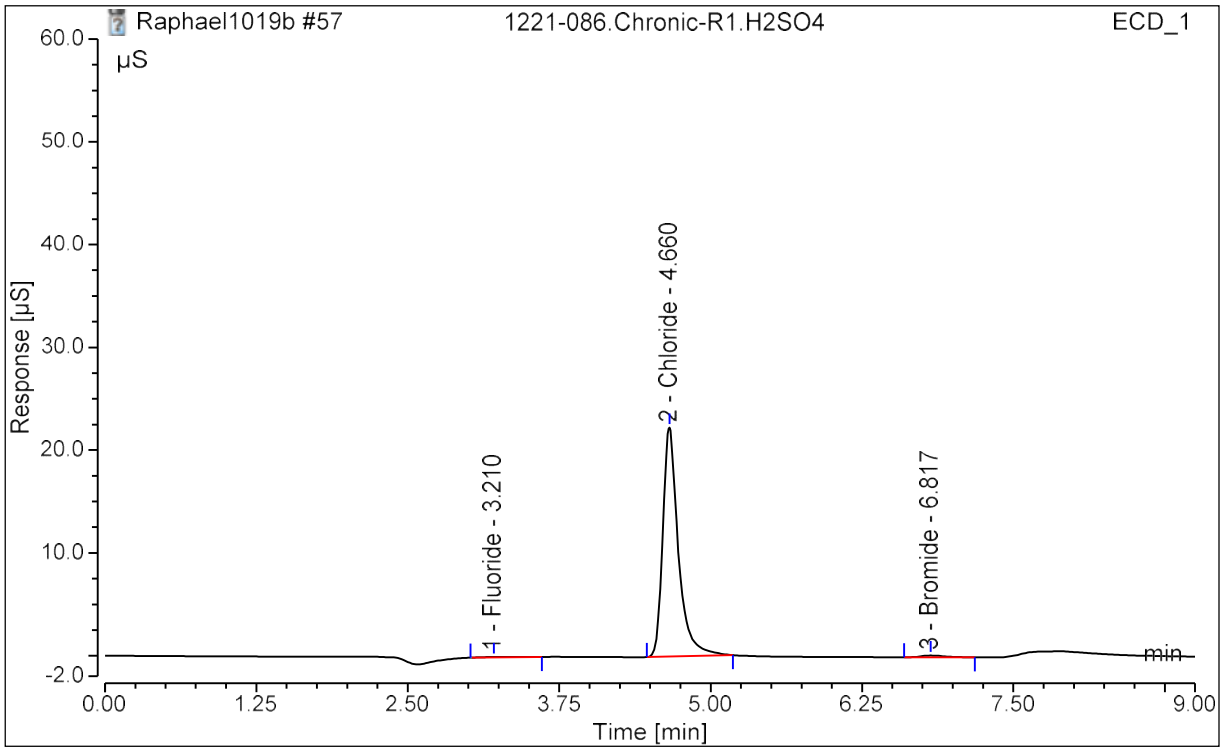


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	2.463	15.237	10.03776	FALSE	FALSE
2	4.66	Chloride	1.641	10.478	9.91008	FALSE	FALSE
3	6.82	Bromide	0.619	3.107	10.05639	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-R1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 02:01**	Run Time:	**14.50**

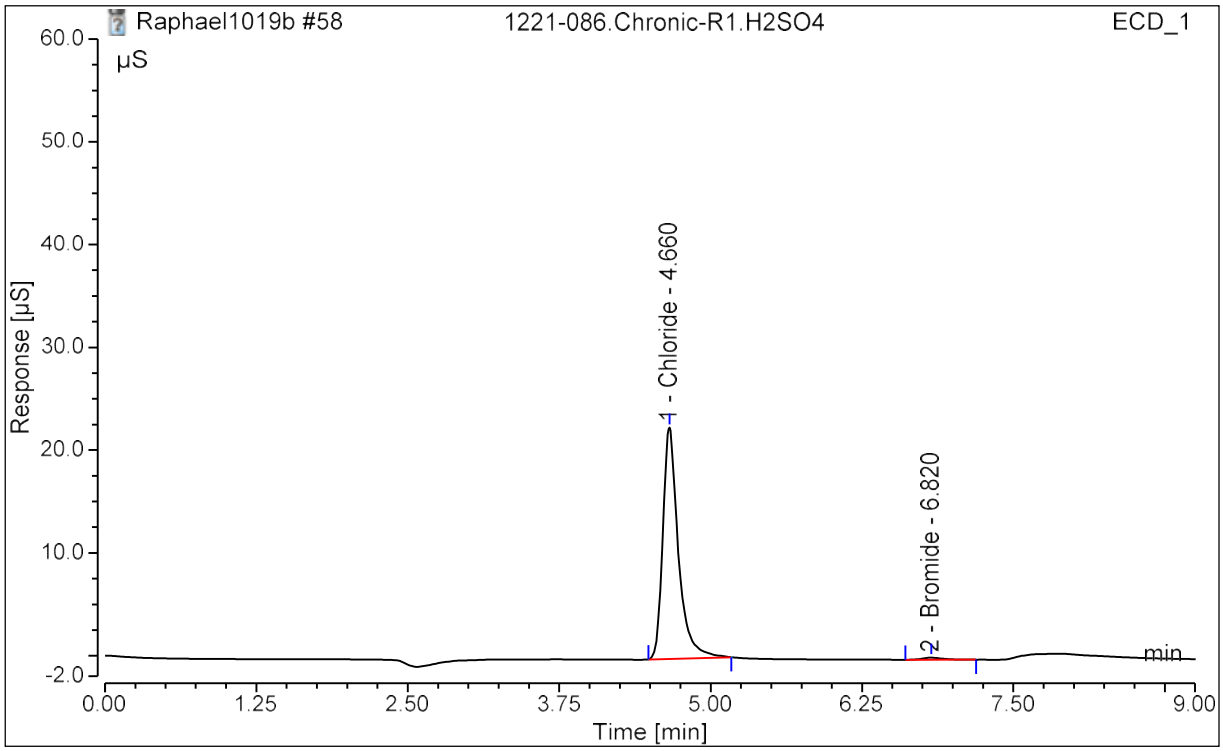


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.21	Fluoride	0.013	0.040	0.02397	FALSE	FALSE
2	4.66	Chloride	3.311	22.285	18.94635	FALSE	FALSE
3	6.82	Bromide	0.036	0.185	0.60916	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-R1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 02:17**	Run Time:	**14.50**

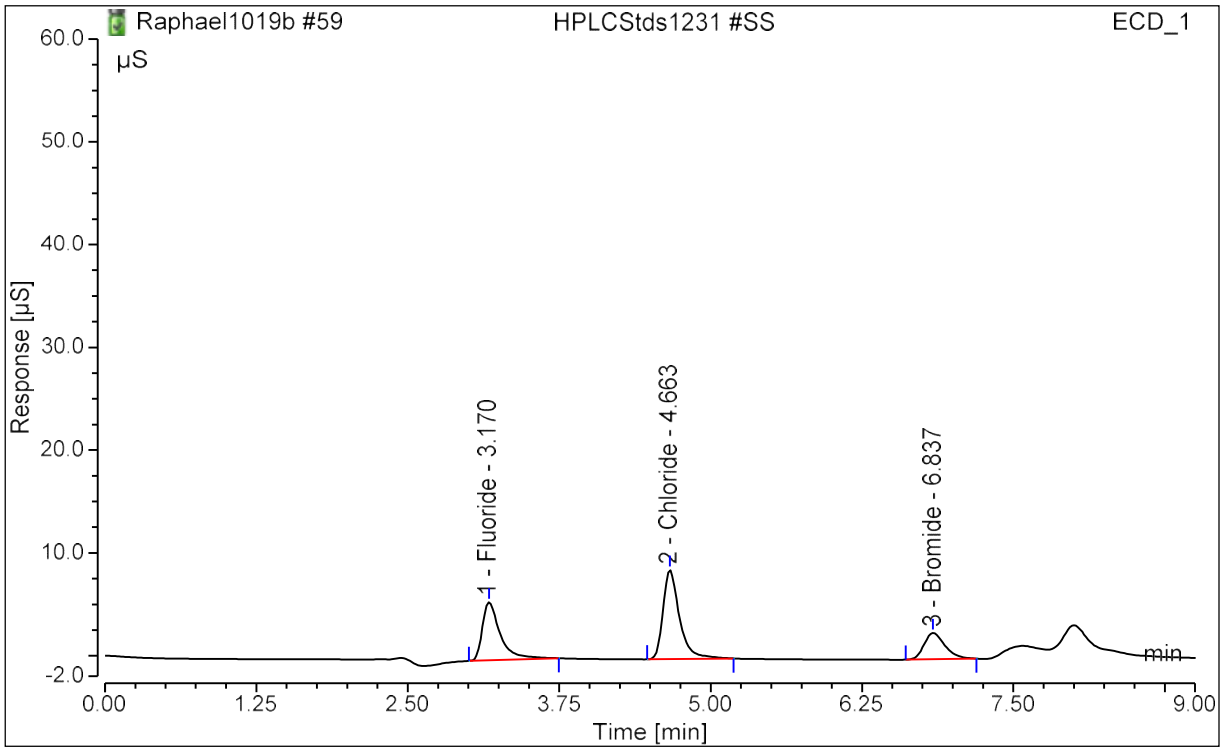


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.66	Chloride	3.334	22.501	19.06536	FALSE	FALSE
2	6.82	Bromide	0.037	0.187	0.62101	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 02:33**	Run Time:	**14.50**

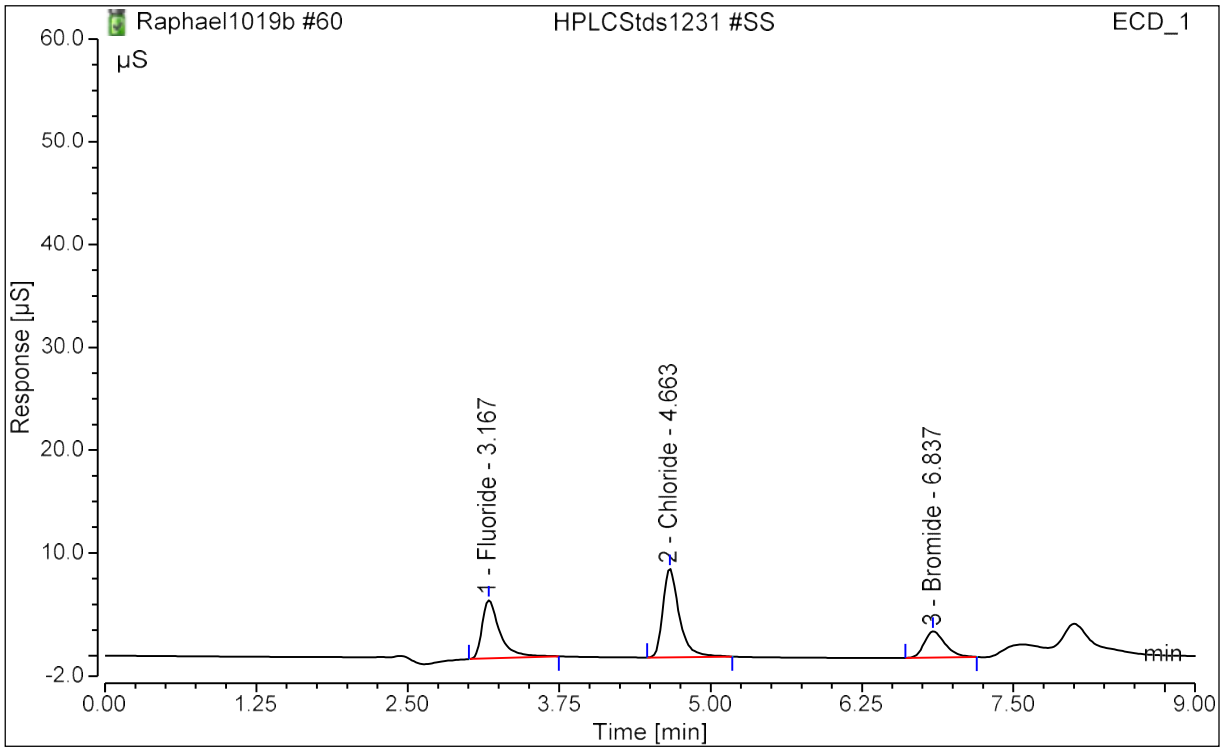


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.970	5.652	4.02216	FALSE	FALSE
2	4.66	Chloride	1.364	8.673	8.30953	FALSE	FALSE
3	6.84	Bromide	0.511	2.559	8.34801	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 02:49**	Run Time:	**14.50**

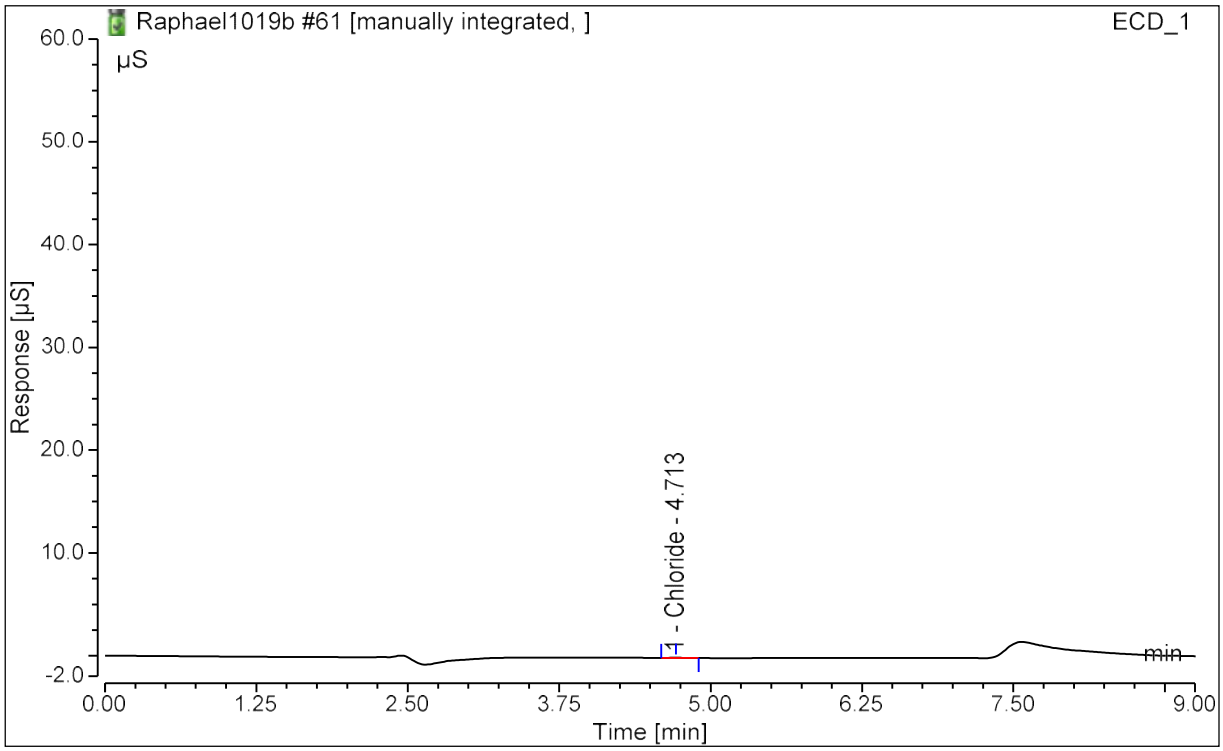


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.968	5.677	4.01341	FALSE	FALSE
2	4.66	Chloride	1.355	8.636	8.25734	FALSE	FALSE
3	6.84	Bromide	0.511	2.550	8.34622	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 03:05**	Run Time:	**14.50**

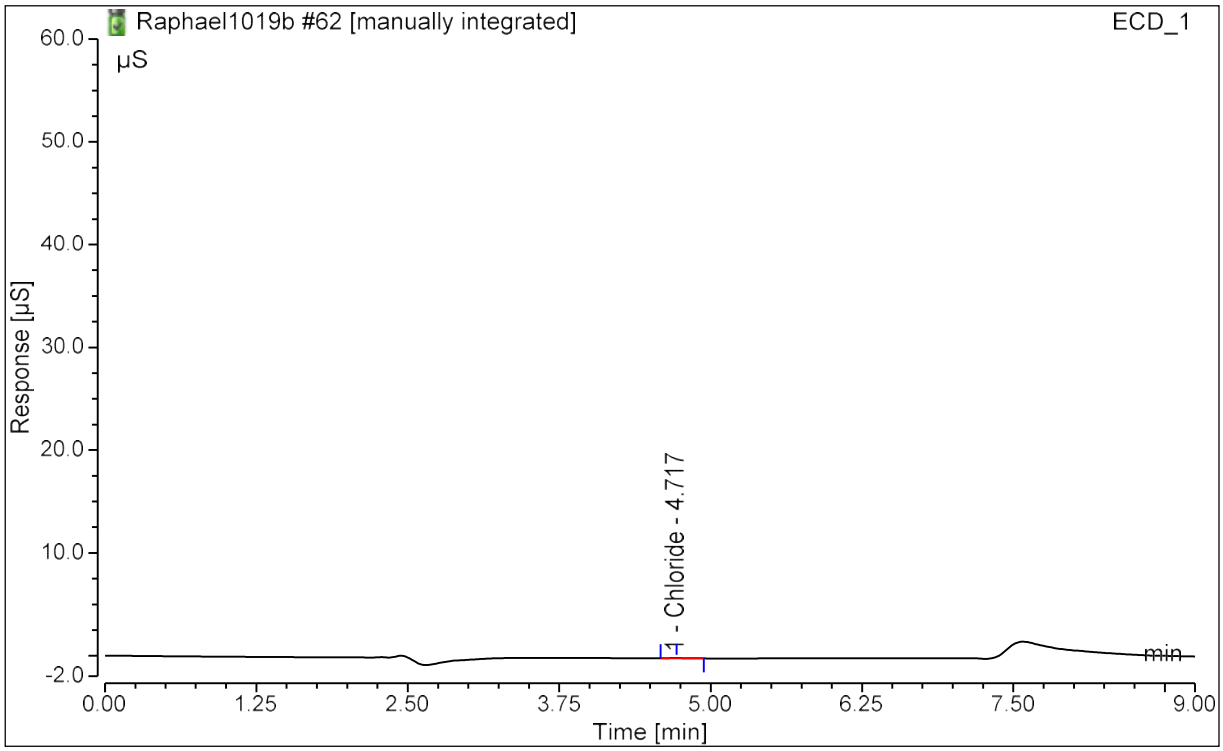


Analyst Comment: NI PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.71	Chloride	0.003	0.018	0.06498	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**HPLCStds1231 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 03:21**	Run Time:	**14.50**

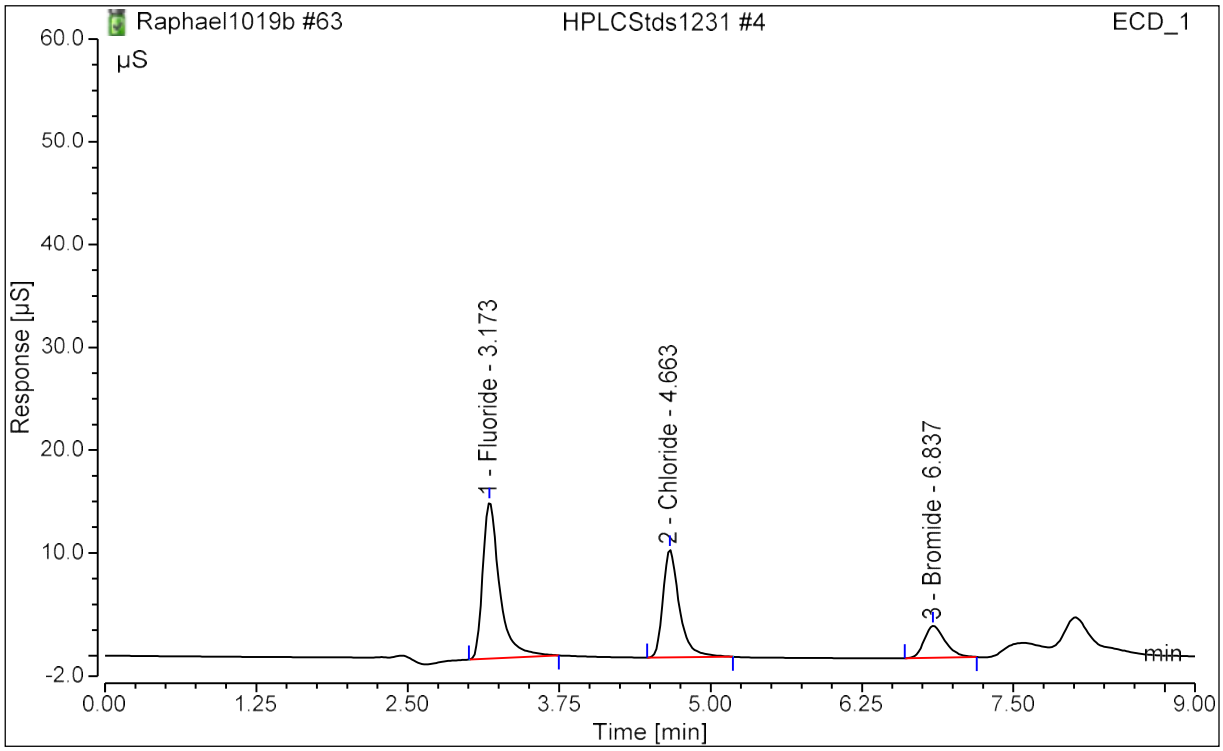


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.72	Chloride	0.003	0.019	0.06659	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 03:38**	Run Time:	**14.50**

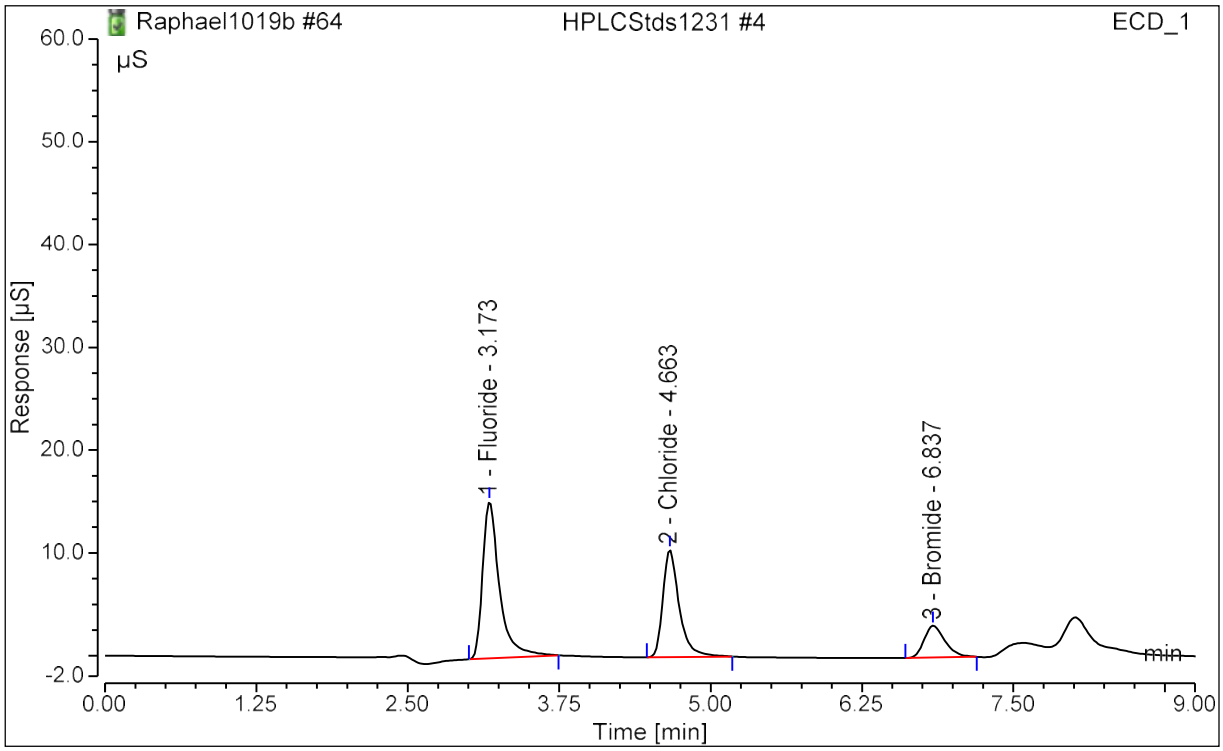


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	2.465	15.250	10.04474	FALSE	FALSE
2	4.66	Chloride	1.651	10.491	9.96229	FALSE	FALSE
3	6.84	Bromide	0.621	3.098	10.07620	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 03:54**	Run Time:	**14.50**

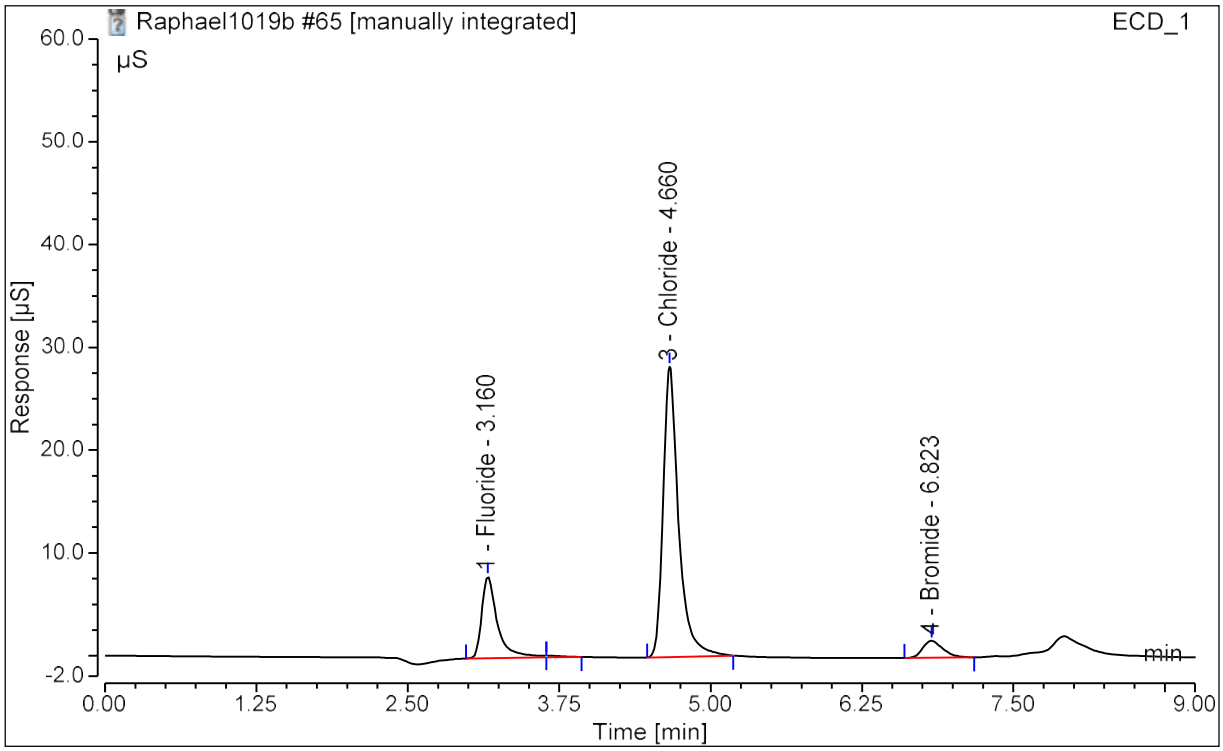


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	2.458	15.244	10.01885	FALSE	FALSE
2	4.66	Chloride	1.643	10.445	9.91939	FALSE	FALSE
3	6.84	Bromide	0.618	3.085	10.02904	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.MS-Chronic-R1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 04:10**	Run Time:	**14.50**

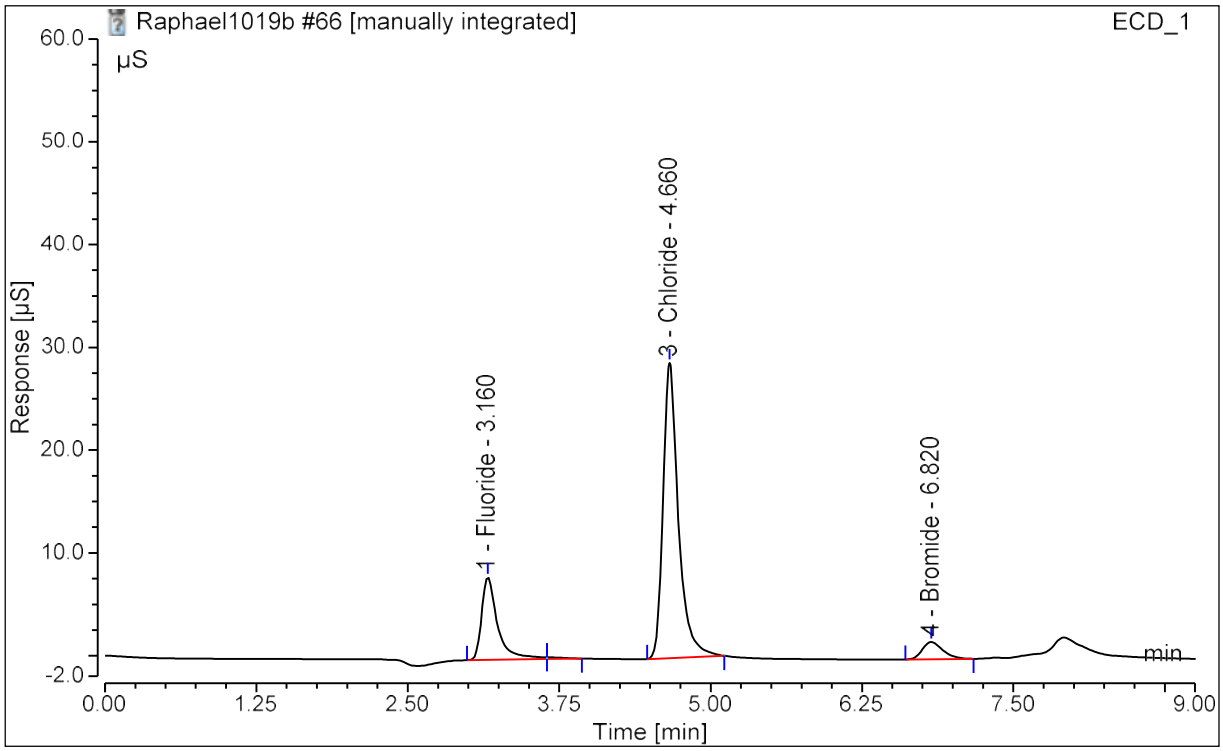


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.16	Fluoride	1.202	7.923	4.97406	FALSE	TRUE
3	4.66	Chloride	4.174	28.249	23.22204	FALSE	FALSE
4	6.82	Bromide	0.319	1.643	5.27597	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.MS-Chronic-R1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 04:26**	Run Time:	**14.50**

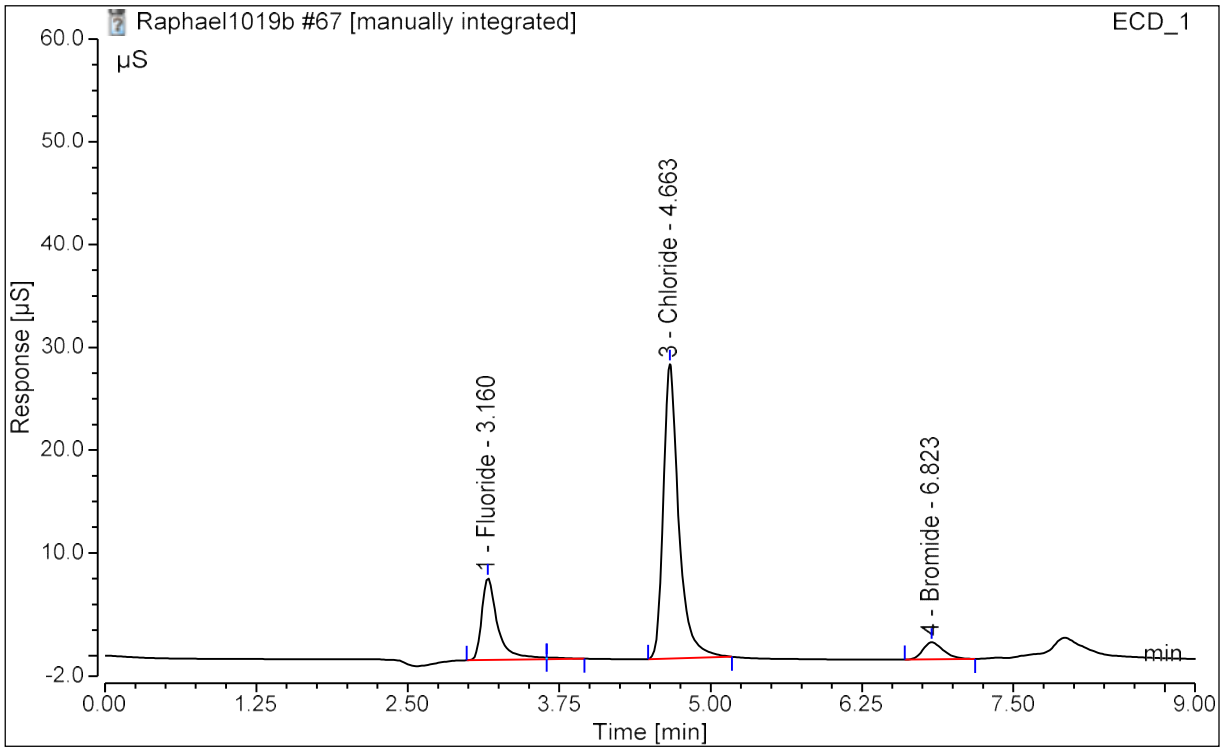


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.16	Fluoride	1.221	8.038	5.05261	FALSE	TRUE
3	4.66	Chloride	4.198	28.737	23.33762	FALSE	FALSE
4	6.82	Bromide	0.324	1.673	5.35732	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.MSD-Chronic-R1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 04:42**	Run Time:	**14.50**

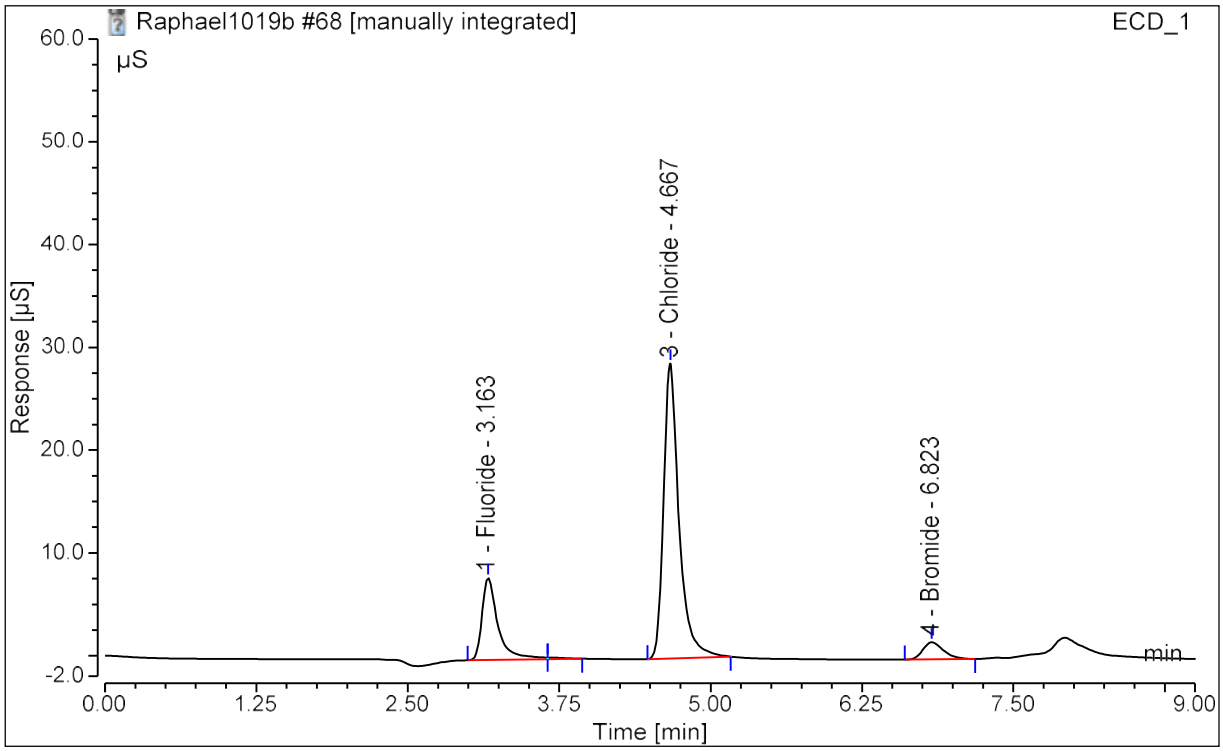


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.16	Fluoride	1.212	7.961	5.01757	FALSE	TRUE
3	4.66	Chloride	4.224	28.659	23.46407	FALSE	FALSE
4	6.82	Bromide	0.321	1.653	5.30687	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.MSD-Chronic-R1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 04:58**	Run Time:	**14.50**

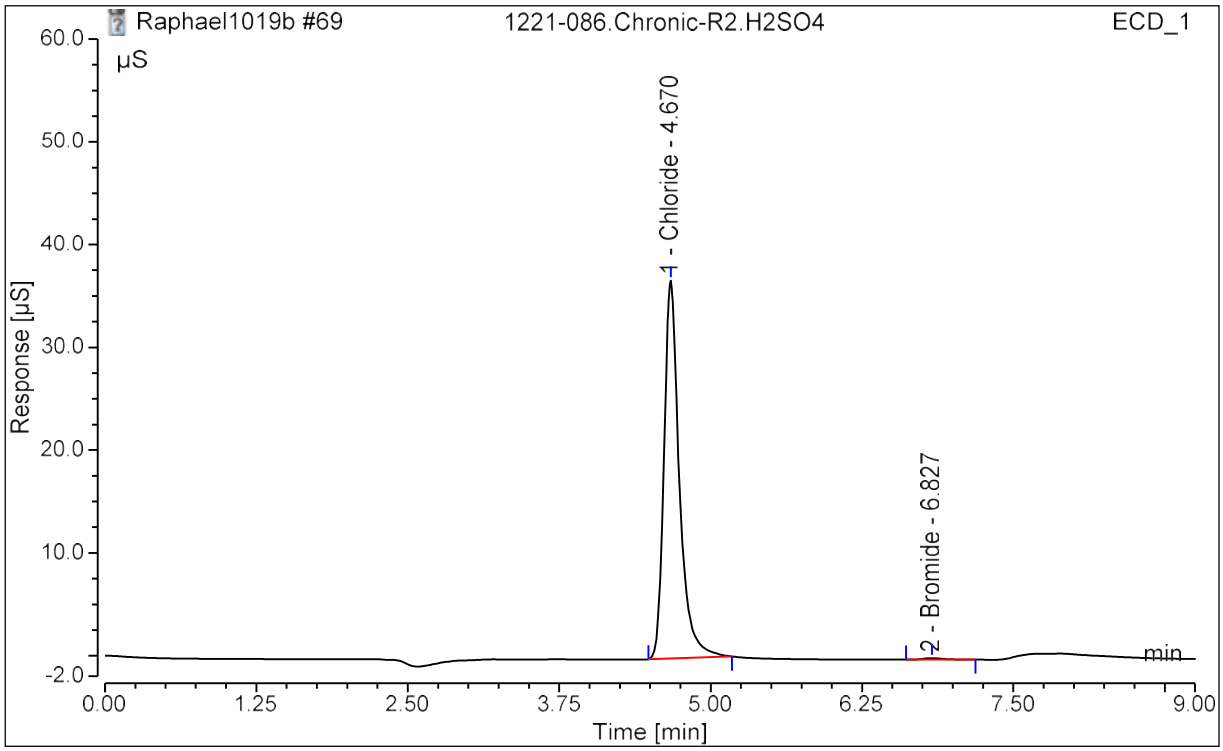


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.16	Fluoride	1.212	7.969	5.01462	FALSE	TRUE
3	4.67	Chloride	4.220	28.698	23.44396	FALSE	FALSE
4	6.82	Bromide	0.322	1.657	5.31602	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-R2.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 05:15**	Run Time:	**14.50**

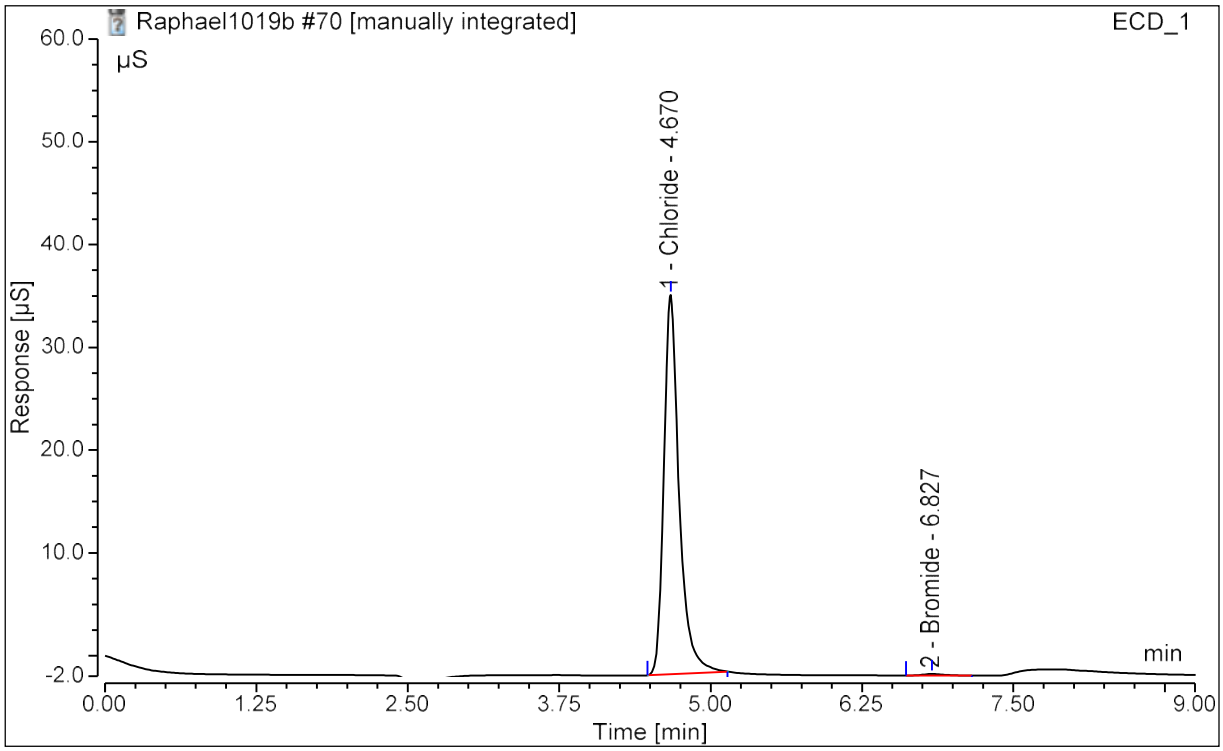


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.67	Chloride	5.380	36.768	28.74854	FALSE	FALSE
2	6.83	Bromide	0.027	0.139	0.46172	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-R2.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 05:31**	Run Time:	**14.50**

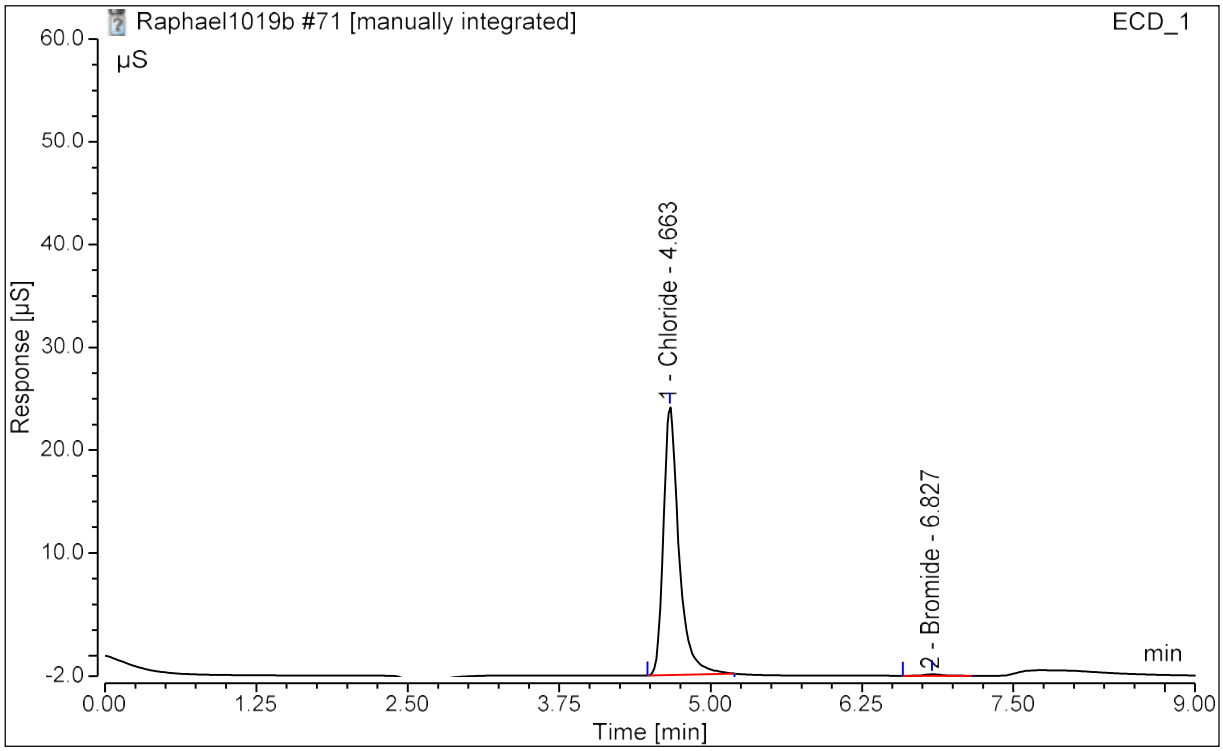


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.67	Chloride	5.379	36.876	28.74457	FALSE	FALSE
2	6.83	Bromide	0.027	0.140	0.46068	FALSE	TRUE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-R3.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 05:47**	Run Time:	**14.50**

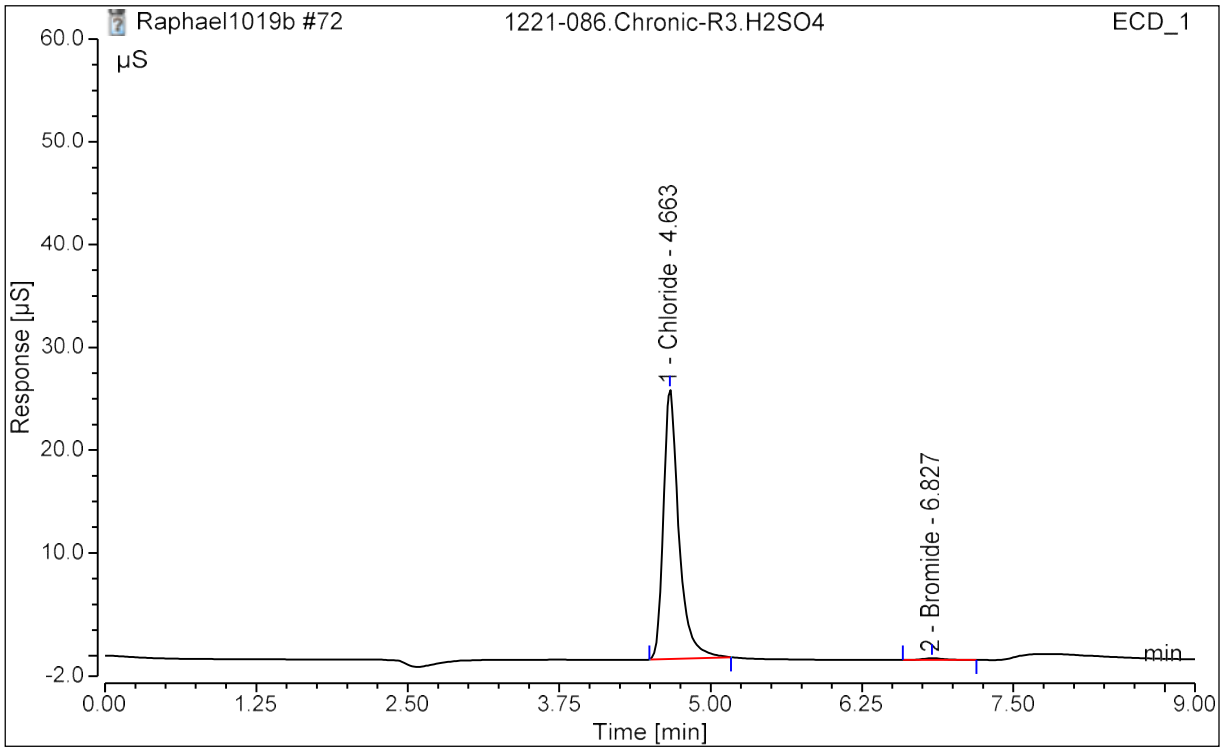


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.66	Chloride	3.870	26.105	21.74849	FALSE	FALSE
2	6.83	Bromide	0.031	0.158	0.52194	FALSE	TRUE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-R3.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 06:03**	Run Time:	**14.50**

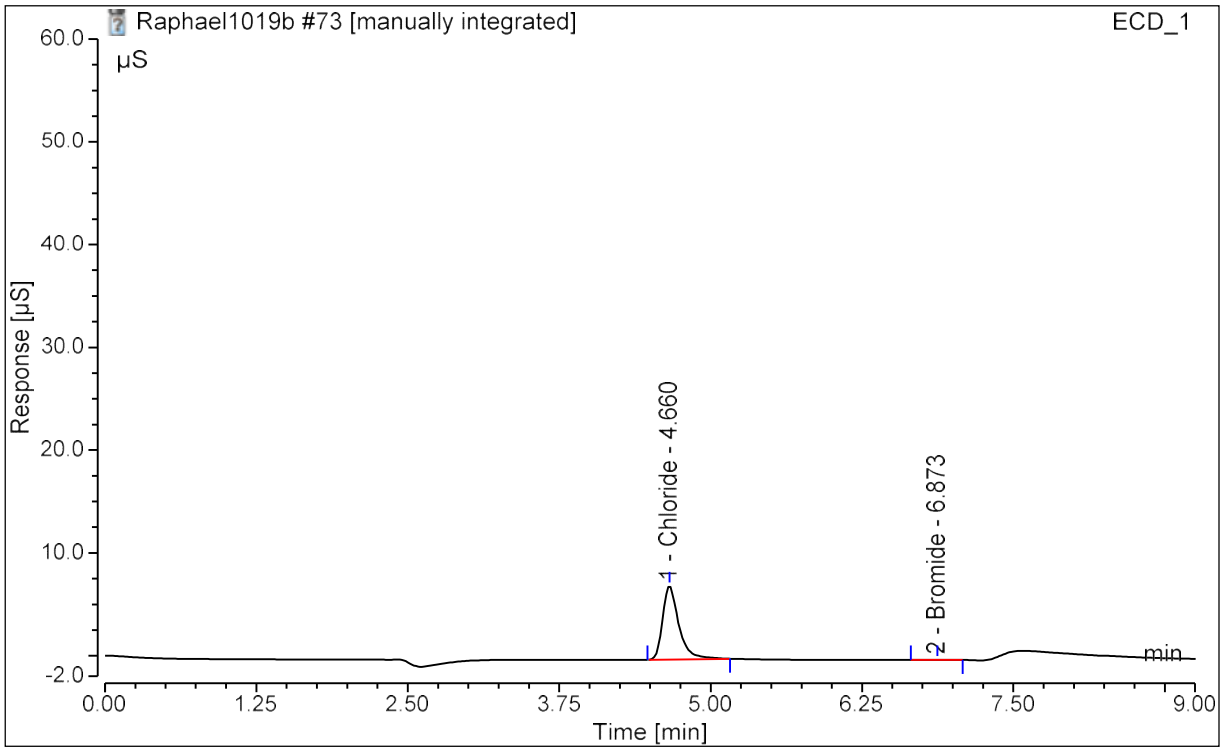


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.66	Chloride	3.864	26.178	21.71682	FALSE	FALSE
2	6.83	Bromide	0.031	0.158	0.52671	FALSE	FALSE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-FB.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 06:19**	Run Time:	**14.50**

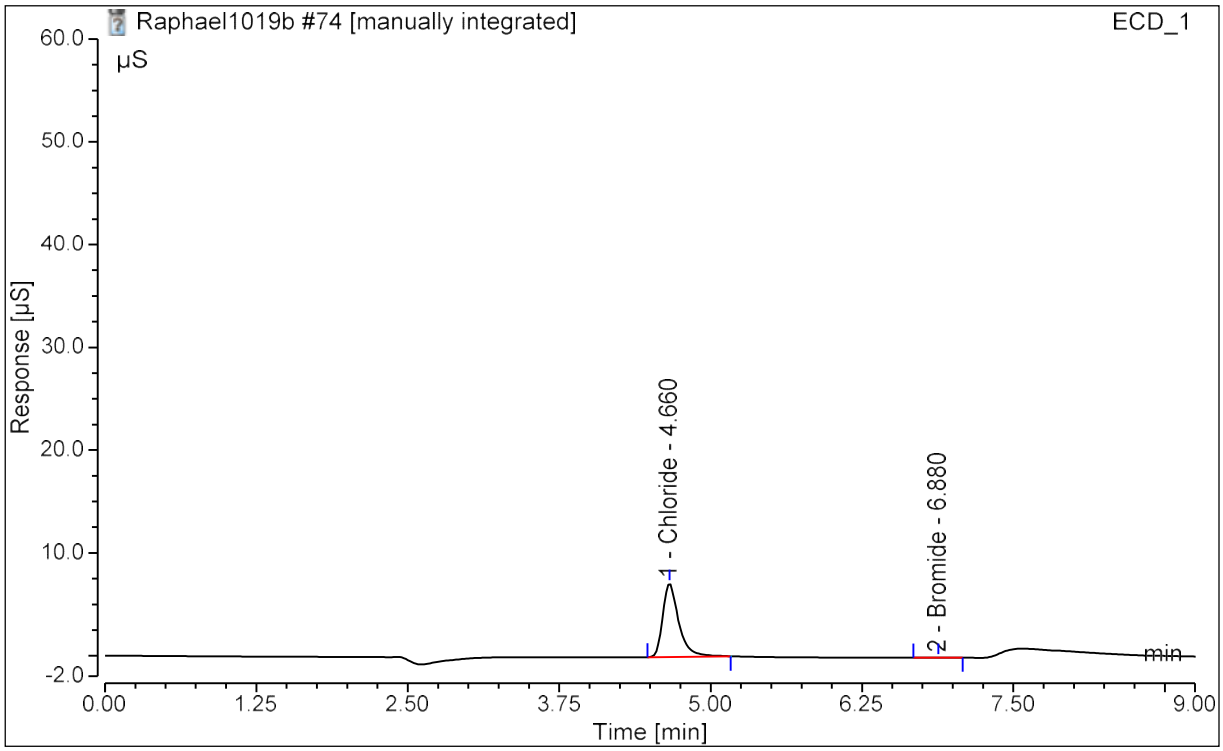


Analyst Comment: CI hit, NI PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.66	Chloride	1.106	7.146	6.79934	FALSE	FALSE
2	6.87	Bromide	0.002	0.011	0.04535	FALSE	TRUE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-FB.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 06:35**	Run Time:	**14.50**

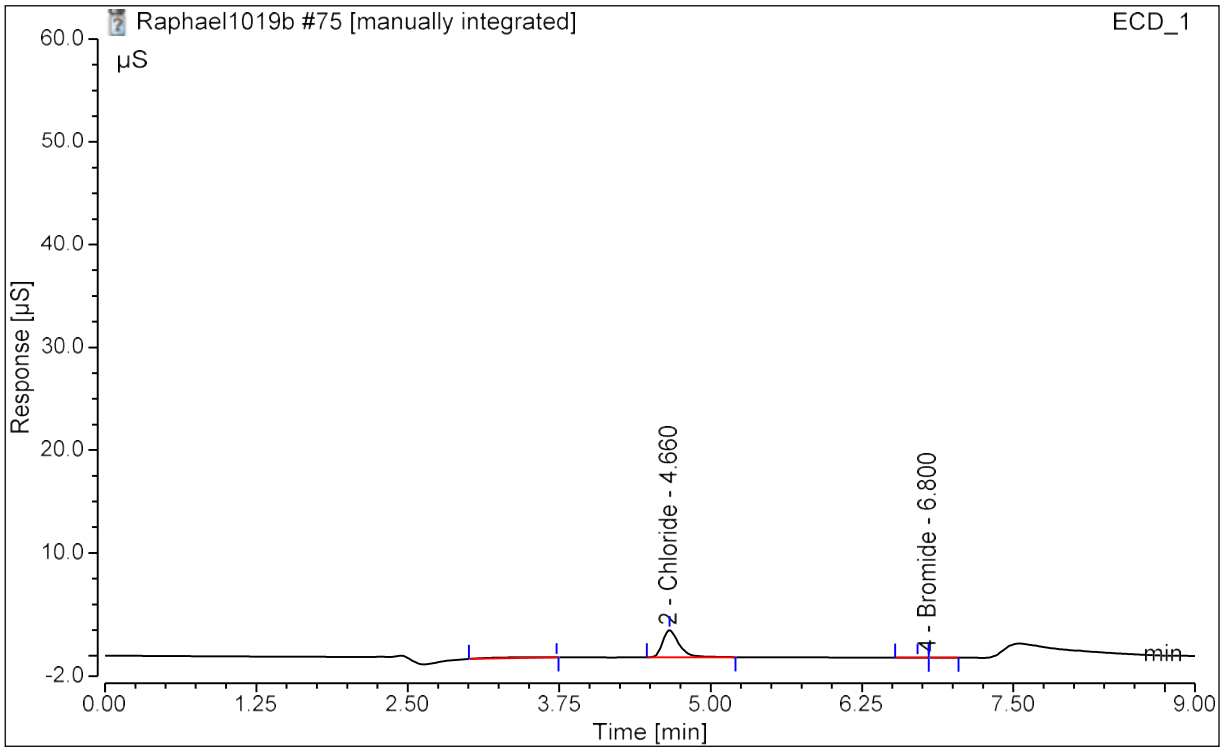


Analyst Comment: CI hit, II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.66	Chloride	1.108	7.157	6.81336	FALSE	FALSE
2	6.88	Bromide	0.002	0.010	0.04132	FALSE	TRUE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-H2SO4.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 06:52**	Run Time:	**14.50**

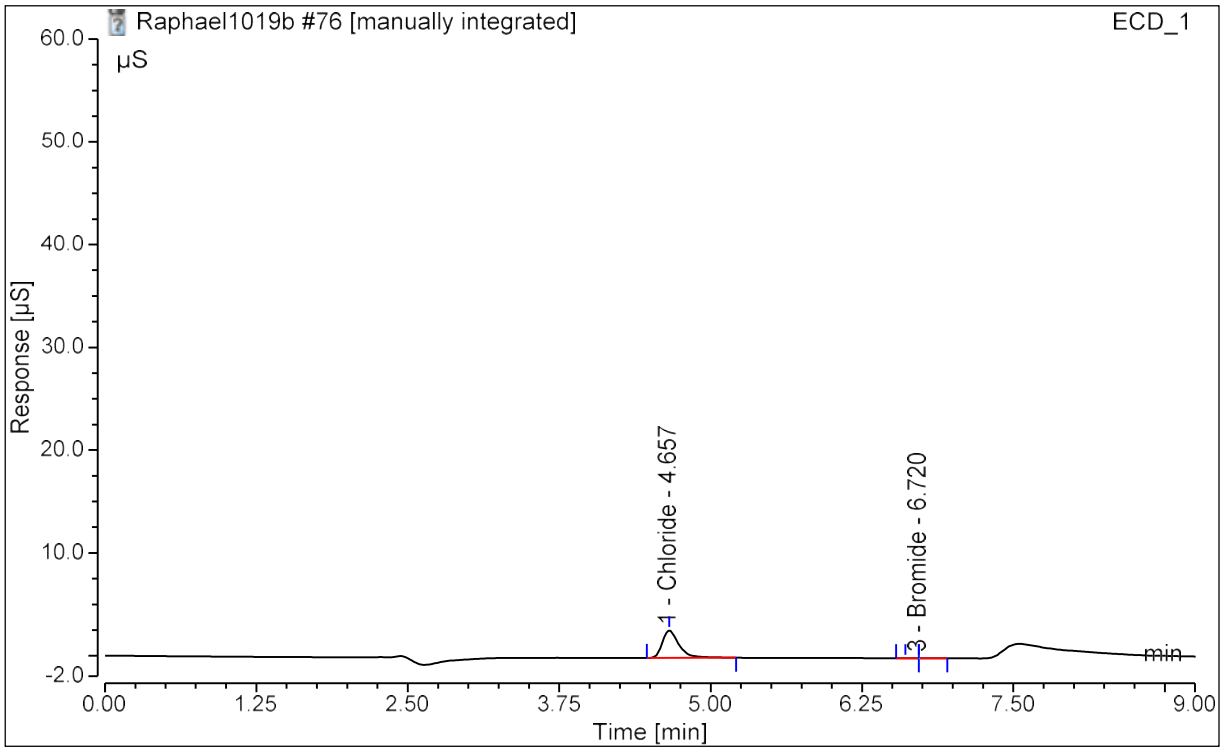


Analyst Comment: CI hit, NI PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
2	4.66	Chloride	0.422	2.639	2.67639	FALSE	FALSE
4	6.80	Bromide	0.000	0.001	0.01108	FALSE	TRUE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-H2SO4.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 07:08**	Run Time:	**14.50**

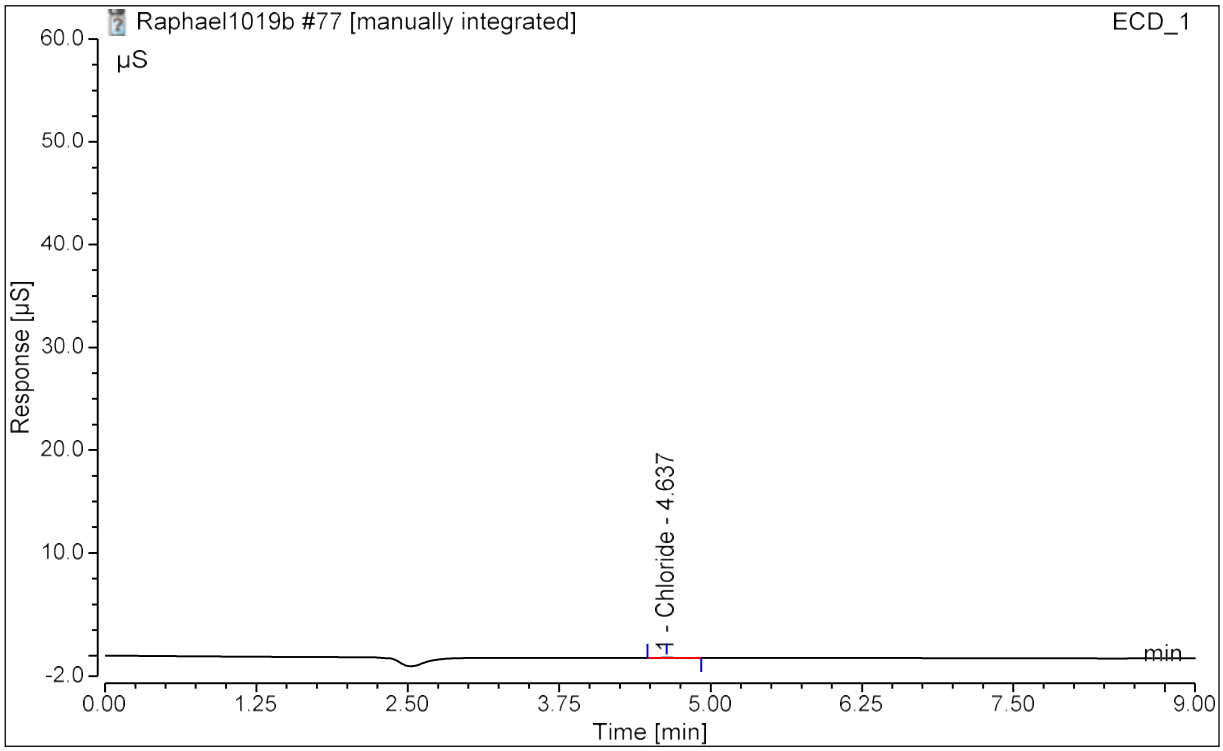


Analyst Comment: CI hit, NI PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.66	Chloride	0.426	2.663	2.69925	FALSE	FALSE
3	6.72	Bromide	0.000	0.001	0.01026	FALSE	TRUE

Peak Analysis Report

Sample Name:	**1221-086.Chronic-DI.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 07:24**	Run Time:	**14.50**

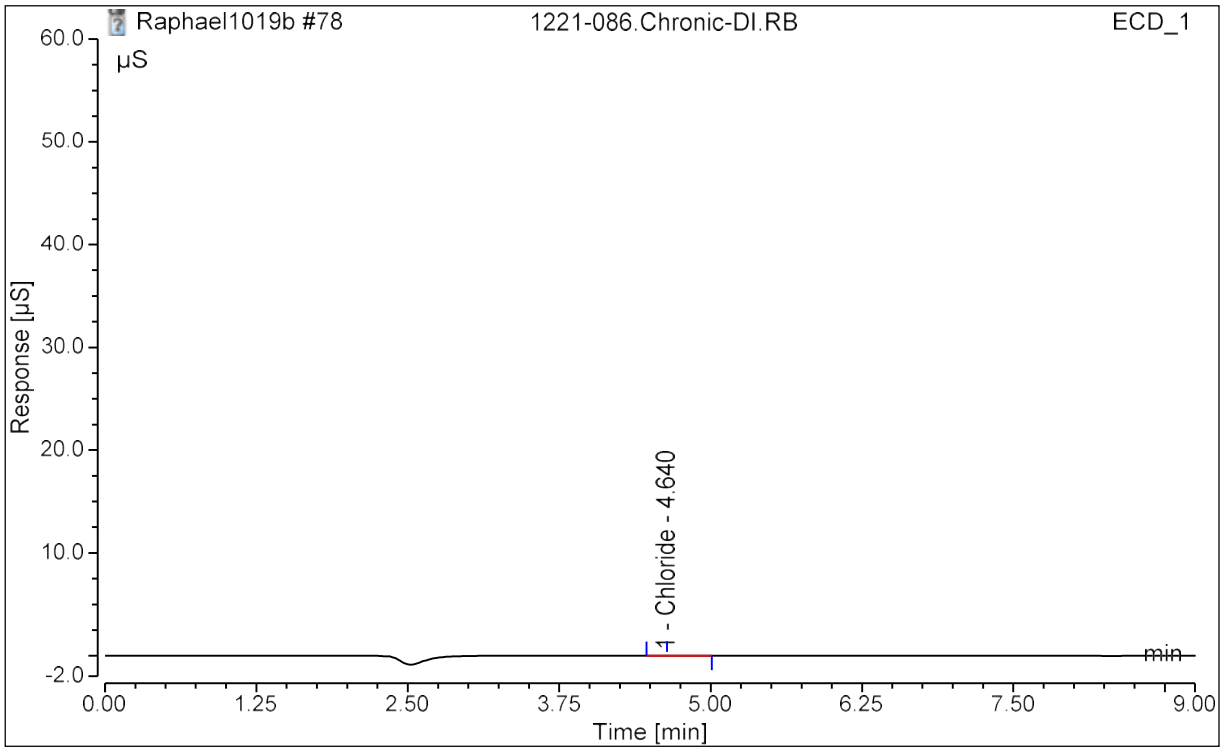


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.64	Chloride	0.003	0.017	0.06475	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**1221-086.Chronic-DI.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 07:40**	Run Time:	**14.50**

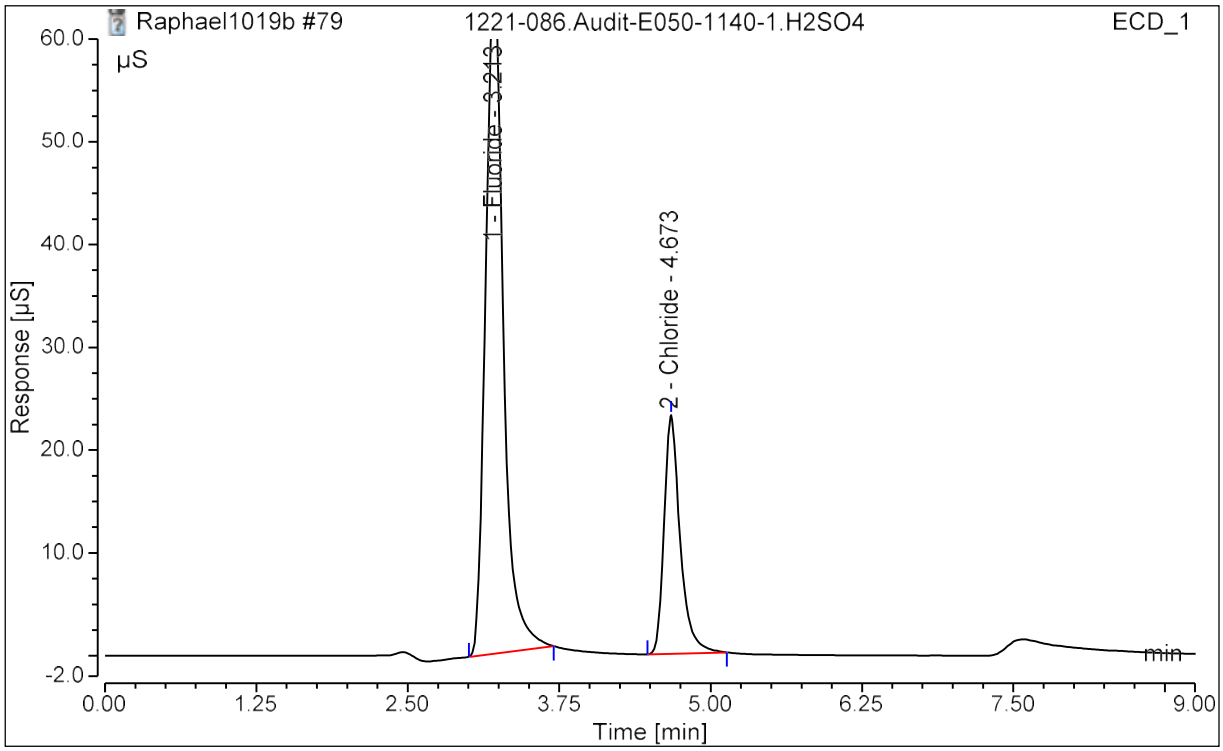


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.64	Chloride	0.002	0.015	0.06355	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**1221-086.Audit-E050-1140-1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 07:56**	Run Time:	**14.50**

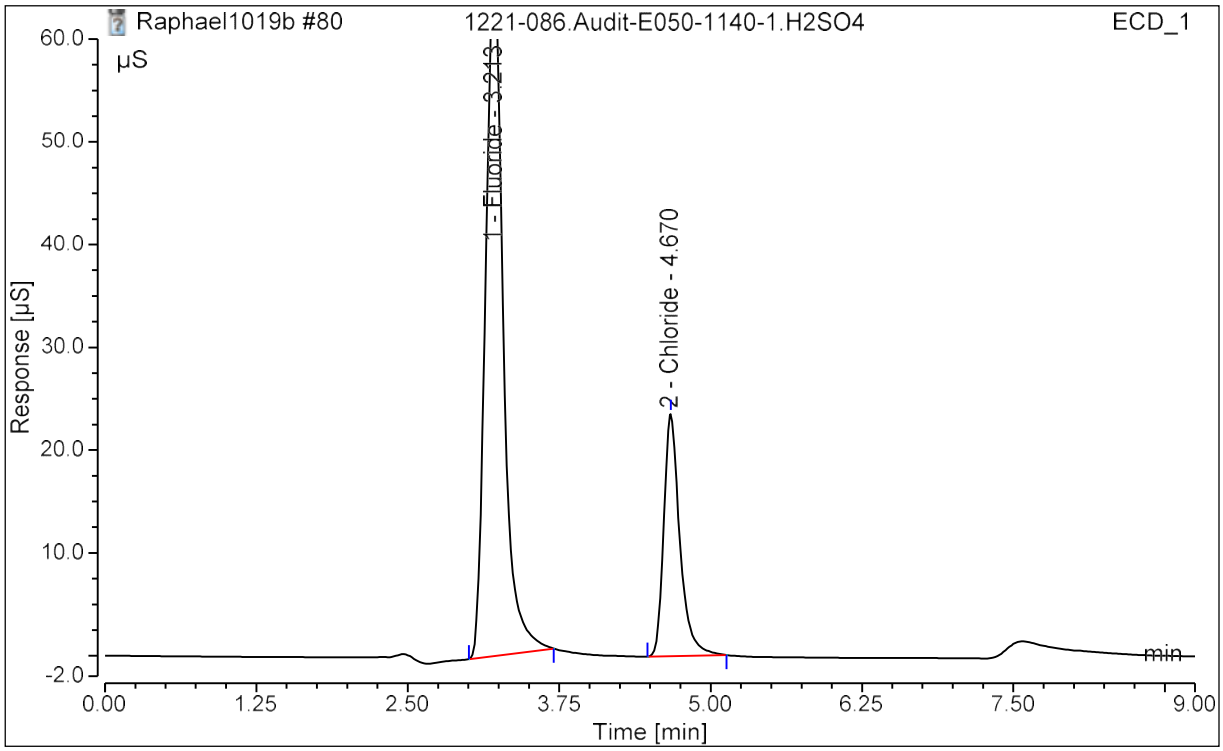


Analyst Comment: F over curve

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.21	Fluoride	11.136	66.387	39.58985	FALSE	FALSE
2	4.67	Chloride	3.560	23.202	20.20646	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**1221-086.Audit-E050-1140-1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 08:13**	Run Time:	**14.50**

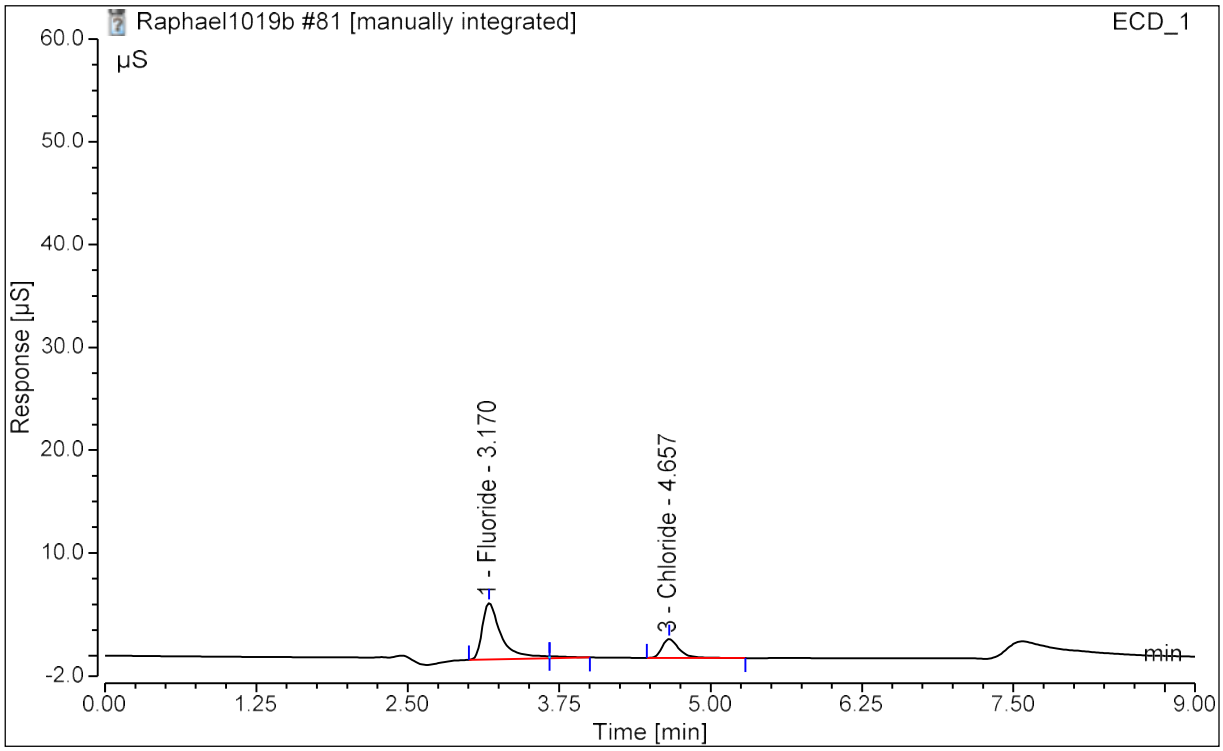


Analyst Comment: F over curve

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.21	Fluoride	11.271	67.316	39.97751	FALSE	FALSE
2	4.67	Chloride	3.620	23.601	20.50868	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**1221-086.Audit-E050-1140-1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**10.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 08:29**	Run Time:	**14.50**

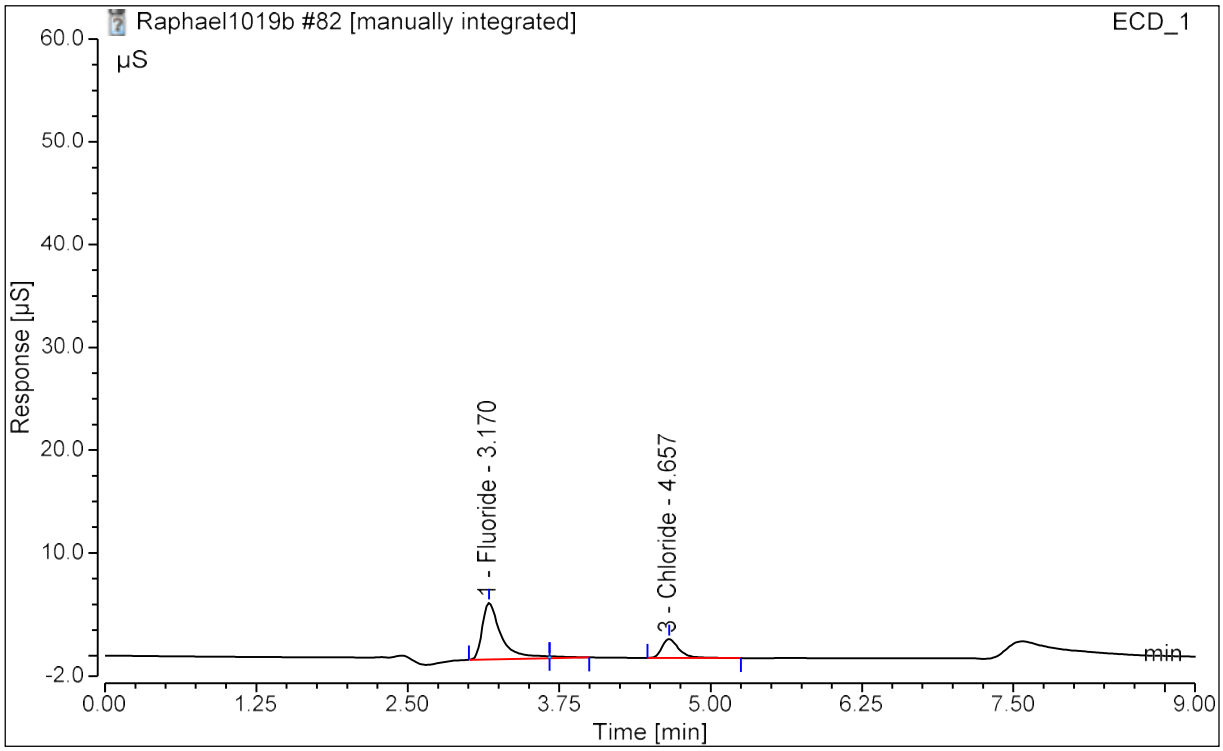


Analyst Comment: Report F, II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.991	5.482	4.10972	FALSE	TRUE
3	4.66	Chloride	0.300	1.856	1.92418	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**1221-086.Audit-E050-1140-1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**10.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 08:45**	Run Time:	**14.50**

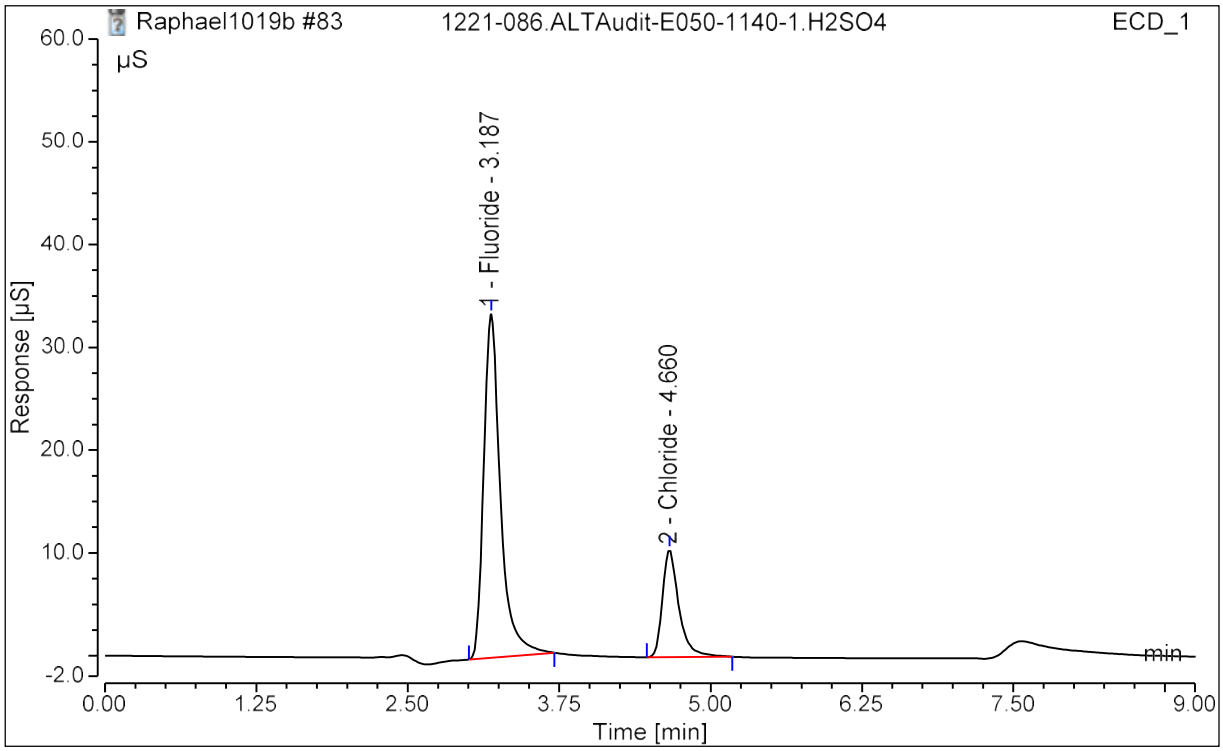


Analyst Comment: Report F, II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.986	5.486	4.09061	FALSE	TRUE
3	4.66	Chloride	0.299	1.856	1.91419	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**1221-086.ALTAudit-E050-1140-1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 09:01**	Run Time:	**14.50**

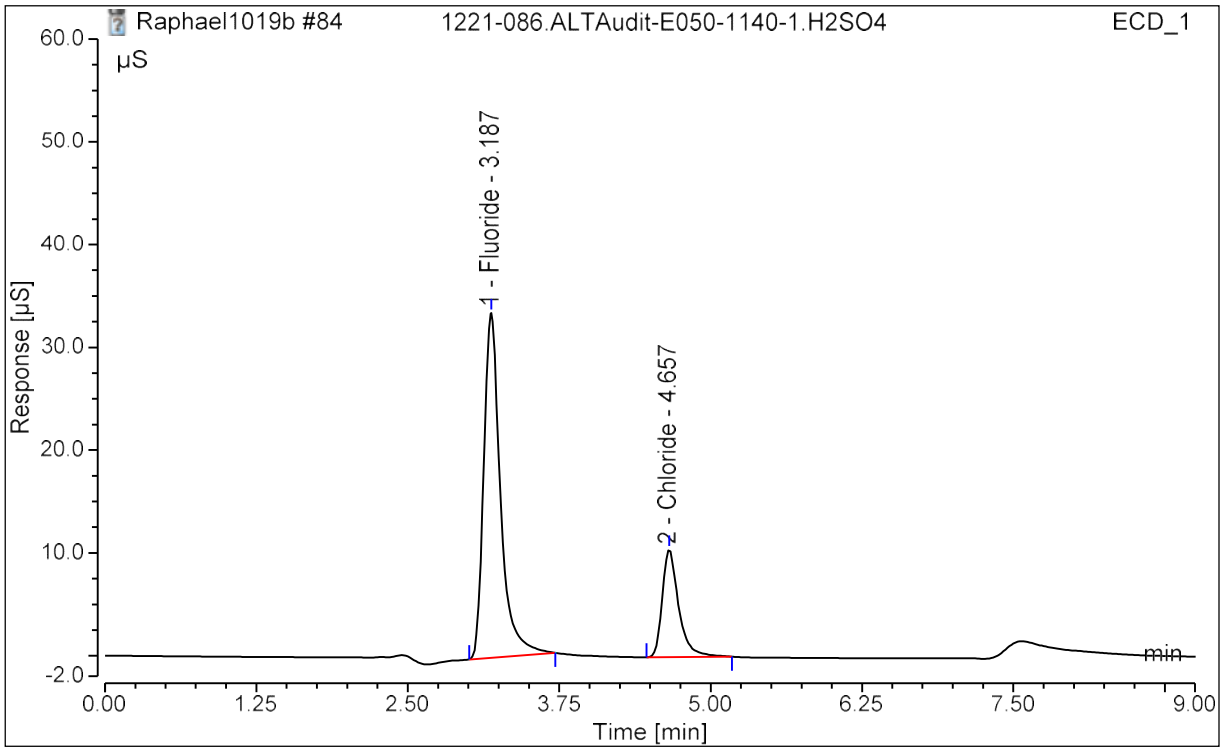


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.19	Fluoride	5.357	33.438	20.91946	FALSE	FALSE
2	4.66	Chloride	1.645	10.432	9.93304	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**1221-086.ALTAudit-E050-1140-1.H2SO4**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 09:17**	Run Time:	**14.50**

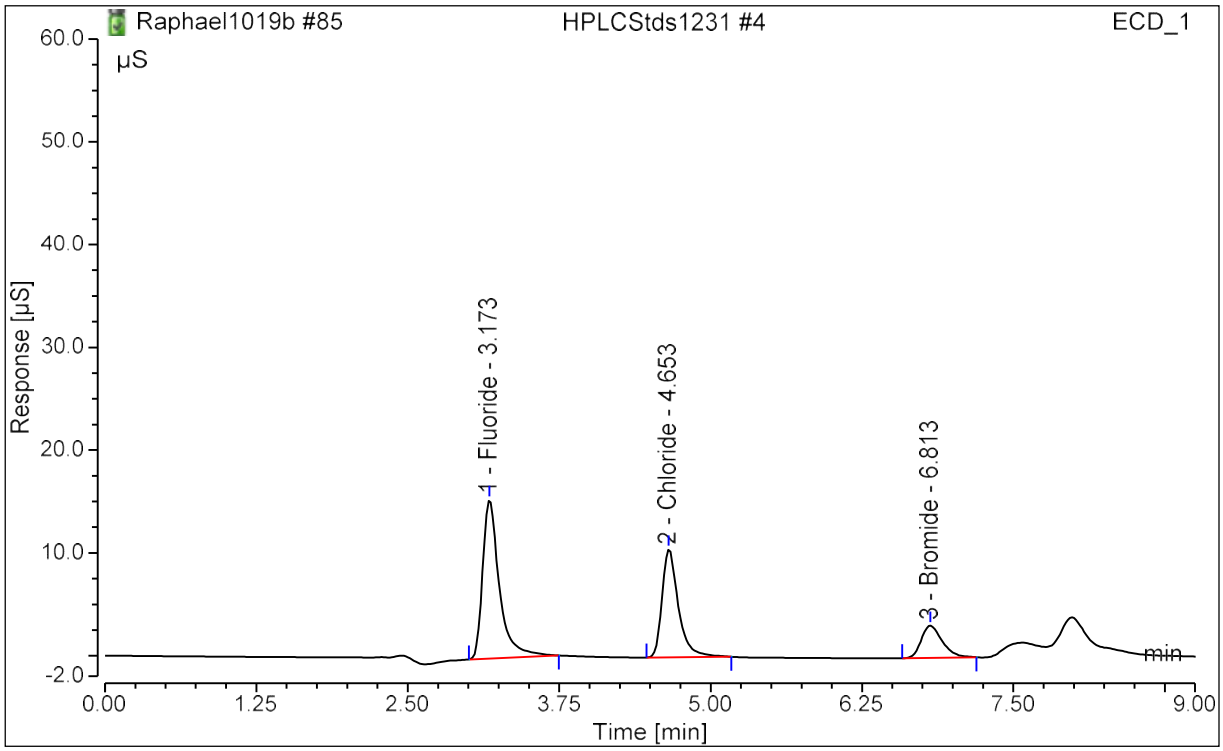


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.19	Fluoride	5.373	33.555	20.97598	FALSE	FALSE
2	4.66	Chloride	1.649	10.465	9.95311	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 09:33**	Run Time:	**14.50**

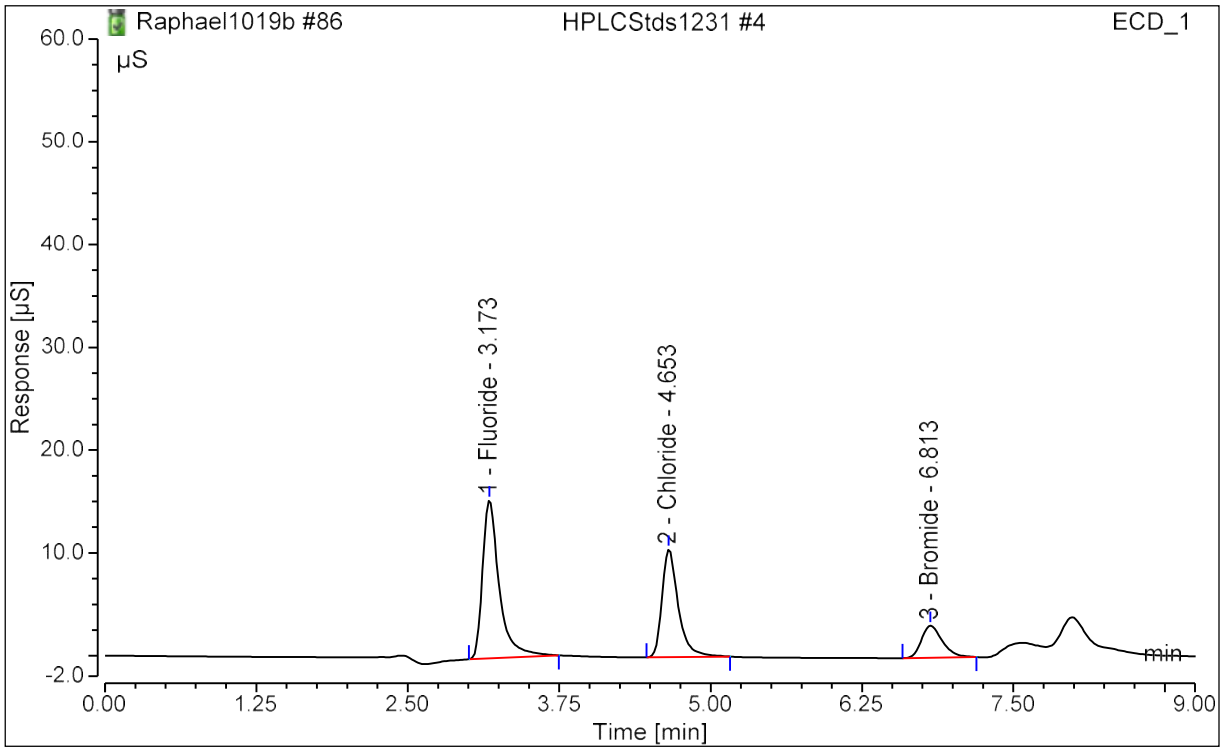


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	2.473	15.431	10.07760	FALSE	FALSE
2	4.65	Chloride	1.651	10.519	9.96202	FALSE	FALSE
3	6.81	Bromide	0.629	3.130	10.20057	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 09:50**	Run Time:	**14.50**

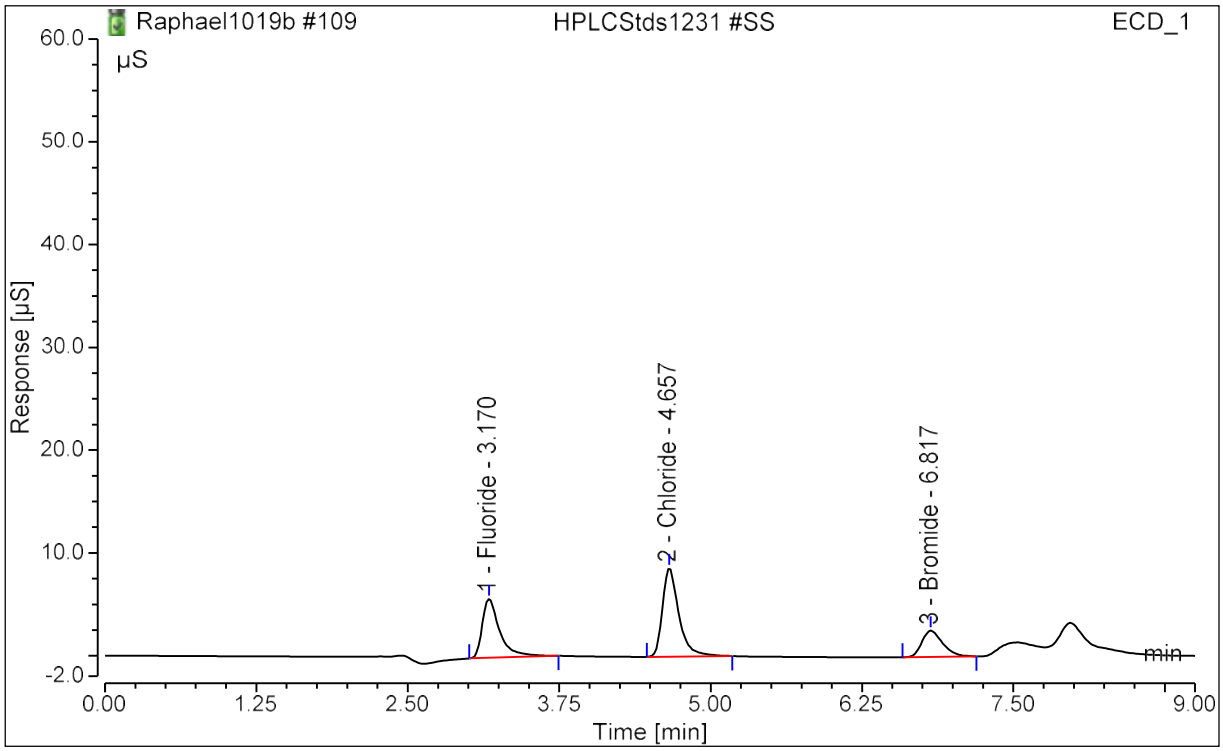


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	2.461	15.384	10.03009	FALSE	FALSE
2	4.65	Chloride	1.642	10.492	9.91329	FALSE	FALSE
3	6.81	Bromide	0.625	3.120	10.13732	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 16:17**	Run Time:	**14.50**

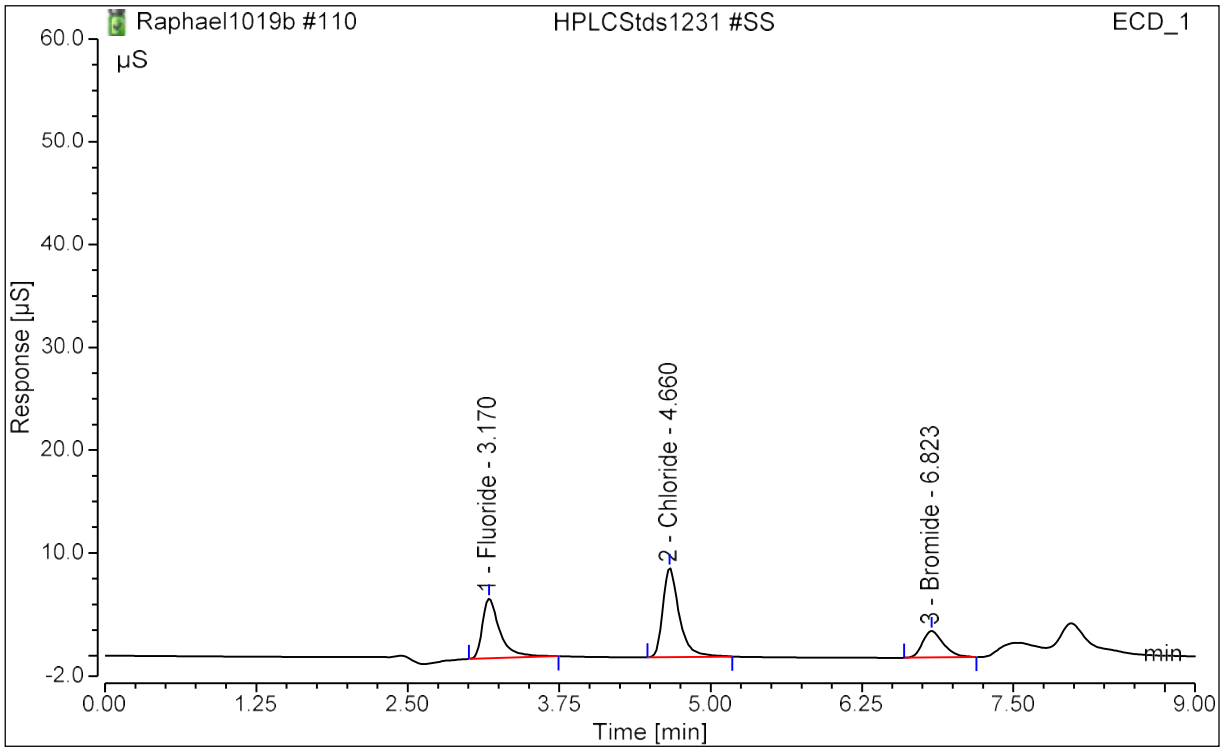


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.964	5.739	3.99814	FALSE	FALSE
2	4.66	Chloride	1.357	8.621	8.27073	FALSE	FALSE
3	6.82	Bromide	0.514	2.562	8.40190	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 16:33**	Run Time:	**14.50**

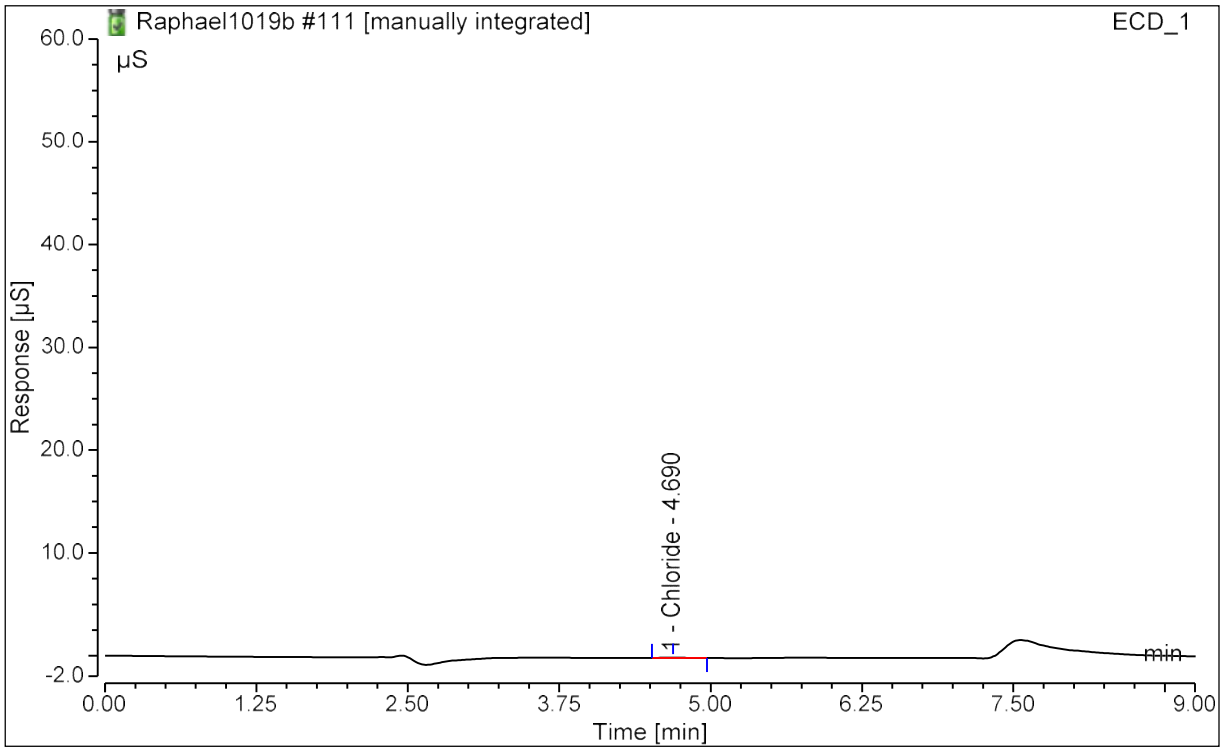


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.978	5.814	4.05589	FALSE	FALSE
2	4.66	Chloride	1.368	8.690	8.33706	FALSE	FALSE
3	6.82	Bromide	0.519	2.578	8.47545	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 16:49**	Run Time:	**14.50**

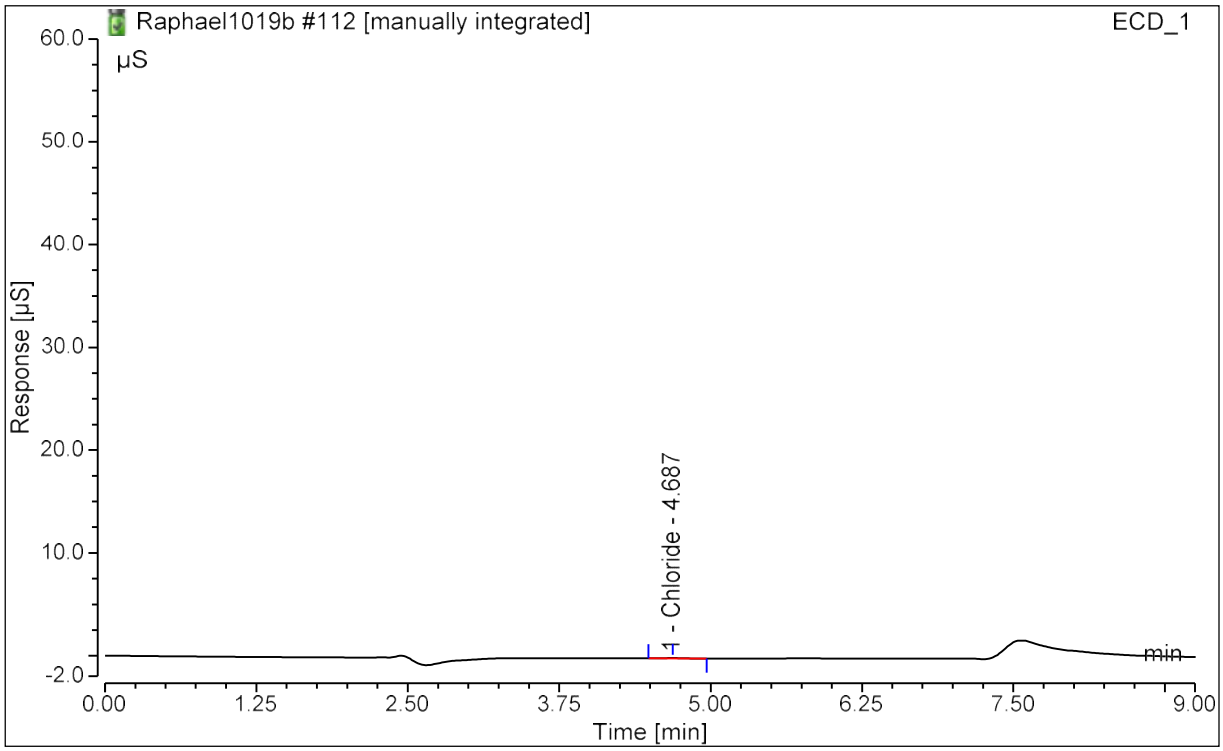


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.69	Chloride	0.007	0.037	0.09233	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**HPLCStds1231 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 17:05**	Run Time:	**14.50**

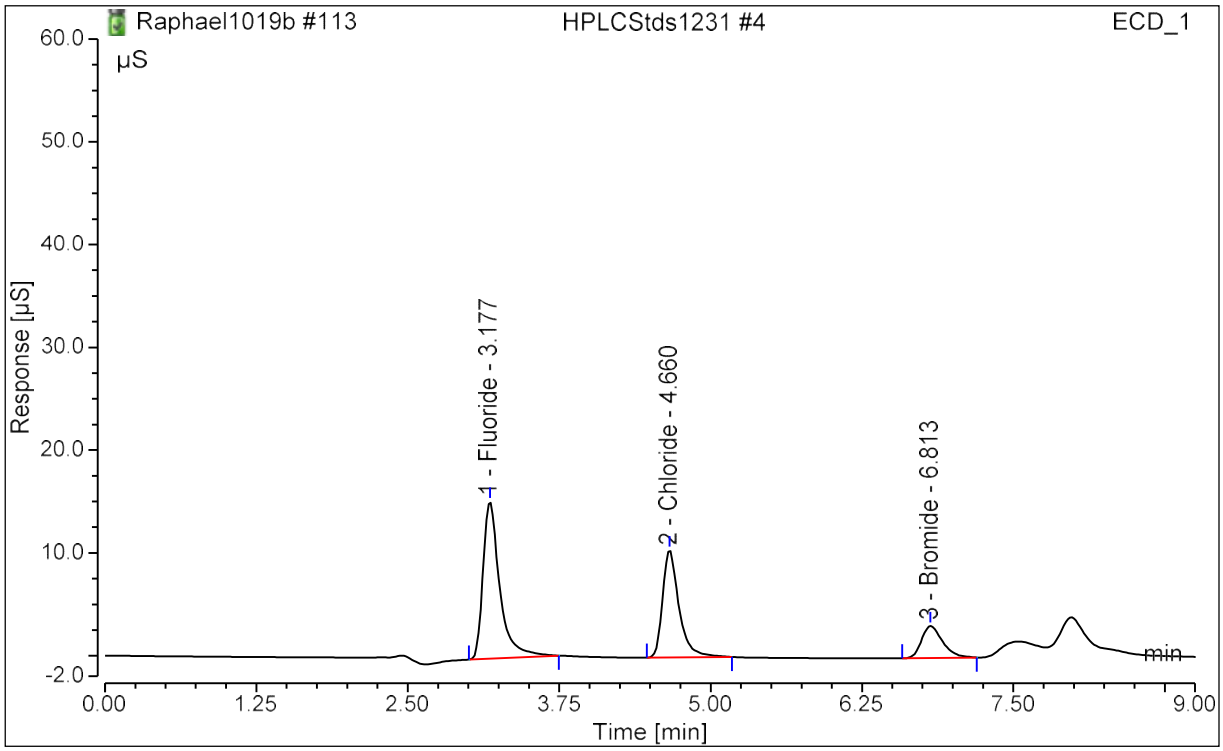


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.69	Chloride	0.007	0.036	0.09119	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 17:21**	Run Time:	**14.50**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	2.448	15.290	9.97912	FALSE	FALSE
2	4.66	Chloride	1.643	10.442	9.91870	FALSE	FALSE
3	6.81	Bromide	0.631	3.121	10.23420	FALSE	FALSE

Calibration Table

No.	Injection Name	Inject Time	Pos.	Level	Ref.Amount µg/mL ECD_1 Chloride	Calibration Point Status ECD_1 Chloride	Amount µg/mL ECD_1 Fluoride	Cal Point Status ECD_1 Fluoride	Amount µg/mL ECD_1 Bromide	Cal Point Status ECD_1 Bromide	Dil.Factor	Volume
1	HPLCStds1231 #6	14/Dec/2021 14:04	GA6	06	30.5560	Ok	30.5560	Ok	30.5560	Ok	1.0000	25.00
2	HPLCStds1231 #6	14/Dec/2021 14:20	GA6	06	30.5560	Ok	30.5560	Ok	30.5560	Ok	1.0000	25.00
3	HPLCStds1231 #5	14/Dec/2021 14:36	GA5	05	15.1104	Ok	15.1104	Ok	15.1104	Ok	1.0000	25.00
4	HPLCStds1231 #5	14/Dec/2021 14:52	GA5	05	15.1104	Ok	15.1104	Ok	15.1104	Ok	1.0000	25.00
5	HPLCStds1231 #4	14/Dec/2021 15:08	GA4	04	9.9099	Ok	9.9099	Ok	9.9099	Ok	1.0000	25.00
6	HPLCStds1231 #4	14/Dec/2021 15:25	GA4	04	9.9099	Ok	9.9099	Ok	9.9099	Ok	1.0000	25.00
7	HPLCStds1231 #3	14/Dec/2021 15:41	GA3	03	4.9430	Ok	4.9430	Ok	4.9430	Ok	1.0000	25.00
8	HPLCStds1231 #3	14/Dec/2021 15:57	GA3	03	4.9430	Ok	4.9430	Ok	4.9430	Ok	1.0000	25.00
11	Raphael1019 #1	15/Dec/2021 11:37	GA1	01	0.4990	Ok	0.4990	Ok	0.4990	Ok	1.0000	25.00
12	Raphael1019 #1	15/Dec/2021 11:54	GA1	01	0.4990	Ok	0.4990	Ok	0.4990	Ok	1.0000	25.00
87	HPLCStds1231 #2	16/Dec/2021 10:20	GA2	02	1.0097	Ok	1.0097	Ok	1.0097	Ok	1.0000	25.00
88	HPLCStds1231 #2	16/Dec/2021 10:36	GA2	02	1.0097	Ok	1.0097	Ok	1.0097	Ok	1.0000	25.00
133	HPLCStds1231 #6	16/Dec/2021 22:45	GA6	06	30.5560	Ok	30.5560	Ok	30.5560	Ok	1.0000	25.00
134	HPLCStds1231 #6	16/Dec/2021 23:01	GA6	06	30.5560	Ok	30.5560	Ok	30.5560	Ok	1.0000	25.00
135	HPLCStds1231 #5	16/Dec/2021 23:17	GA5	05	15.1104	Ok	15.1104	Ok	15.1104	Ok	1.0000	25.00
136	HPLCStds1231 #5	16/Dec/2021 23:34	GA5	05	15.1104	Ok	15.1104	Ok	15.1104	Ok	1.0000	25.00
137	HPLCStds1231 #4	16/Dec/2021 23:50	GA4	04	9.9099	Ok	9.9099	Ok	9.9099	Ok	1.0000	25.00
138	HPLCStds1231 #4	17/Dec/2021 00:06	GA4	04	9.9099	Ok	9.9099	Ok	9.9099	Ok	1.0000	25.00
139	HPLCStds1231 #3	17/Dec/2021 00:22	GA3	03	4.9430	Ok	4.9430	Ok	4.9430	Ok	1.0000	25.00
140	HPLCStds1231 #3	17/Dec/2021 00:38	GA3	03	4.9430	Ok	4.9430	Ok	4.9430	Ok	1.0000	25.00
141	HPLCStds1231 #2	17/Dec/2021 00:55	GA2	02	1.0097	Ok	1.0097	Ok	1.0097	Ok	1.0000	25.00
143	Raphael1019 #1	17/Dec/2021 01:27	GA1	01	0.4990	Ok	0.4990	Ok	0.4990	Ok	1.0000	25.00
144	Raphael1019 #1	17/Dec/2021 01:43	GA1	01	0.4990	Ok	0.4990	Ok	0.4990	Ok	1.0000	25.00

Detection Parameters

Ret. Time min	Param. Name	Param. Value	Inj. Type	Channel
Always	Baseline Noise Auto Range	Off	Any	All Channels
Always	Baseline Noise Start Time	0.520 [min]	Any	All Channels
Always	Baseline Noise End Time	1.976 [min]	Any	All Channels
Always	Cobra Smoothing Width	Auto	Any	All Channels
Always	Consider Void Peak	Off	Any	All Channels
0.000	Maximum Rider Ratio	10 [%]	Any	All Channels
0.000	Fronting Sensitivity Factor	0.250 [%]	Any	All Channels
0.000	Detect Shoulder Peaks	Off	Any	All Channels
0.000	Baseline Point	Fixed	Any	All Channels
0.000	Tailing Sensitivity Factor	0.750 [%]	Any	All Channels
0.000	Minimum Area	0.0010 [Signal*min]	Any	All Channels
0.000	Inhibit Integration	On	Any	All Channels
3.000	Inhibit Integration	Off	Any	All Channels
3.750	Inhibit Integration	On	Any	All Channels
4.400	Inhibit Integration	Off	Any	All Channels
5.500	Inhibit Integration	On	Any	All Channels
6.500	Inhibit Integration	Off	Any	All Channels
7.200	Inhibit Integration	On	Any	All Channels

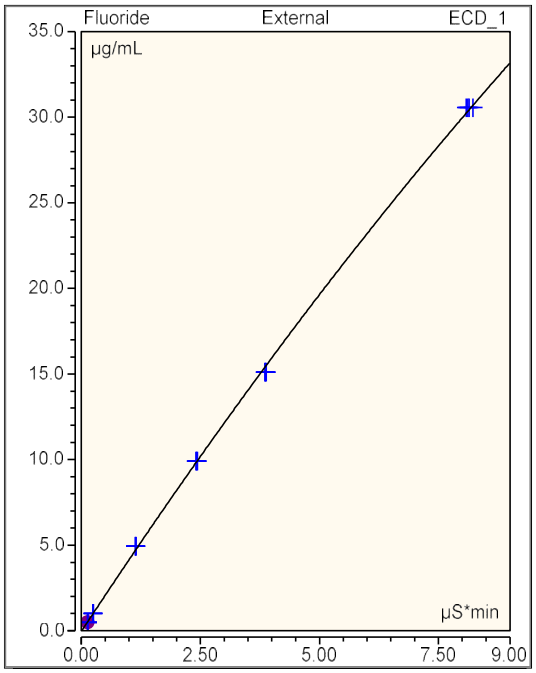
Calibration Batch Report

Sequence:	**Raphael1019b**	*Injection Volume:*	**25.00**
Instrument Method:	**AS22 ASAP**	*Operator:*	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 11:37**	*Run Time:*	**14.5**

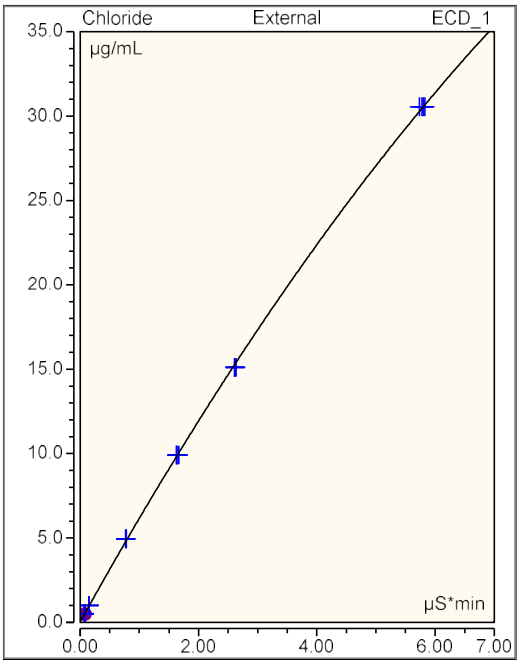
Calibration Summary

Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
Fluoride	Area	Quad, WithOffset, 1/A	23.000	-0.030	4.238	-0.061	99.959
Chloride	Area	Quad, WithOffset, 1/A	23.000	0.048	6.304	-0.180	99.980
Bromide	Area	Quad, WithOffset, 1/A	23.000	0.008	16.792	-0.922	99.982
		AVERAGE:		0.0087	9.1111	-0.3878	99.9737

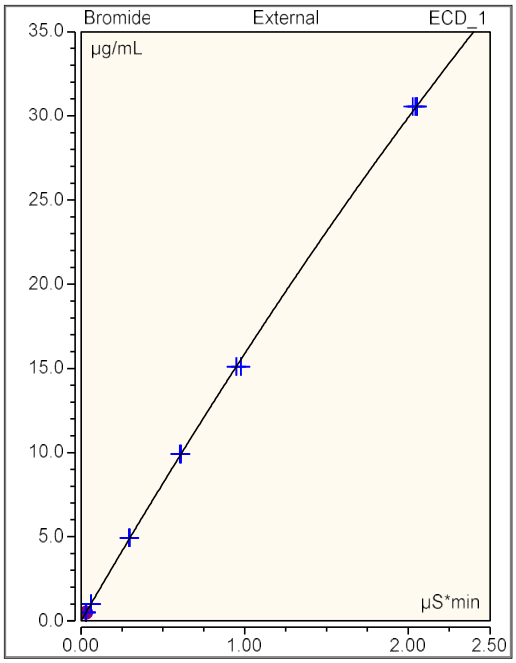
Injection Name	Ret.Time min ECD_1	Area µS*min ECD_1	Height µS ECD_1	Amount µg/mL ECD_1
	Fluoride	Fluoride	Fluoride	Fluoride
HPLCStds1231 #6	3.197	8.145	50.417	30.435
HPLCStds1231 #6	3.197	8.228	50.902	30.704
HPLCStds1231 #5	3.180	3.886	23.759	15.516
HPLCStds1231 #5	3.180	3.862	23.769	15.427
HPLCStds1231 #4	3.173	2.438	14.649	9.940
HPLCStds1231 #4	3.173	2.431	14.664	9.910
HPLCStds1231 #3	3.170	1.137	6.522	4.707
HPLCStds1231 #3	3.170	1.144	6.574	4.736
Raphael1019 #1	3.177	0.127	0.605	0.508
Raphael1019 #1	3.177	0.132	0.614	0.527
HPLCStds1231 #2	3.170	0.243	1.219	0.997
HPLCStds1231 #2	3.173	0.248	1.231	1.017
HPLCStds1231 #6	3.203	8.087	49.475	30.248
HPLCStds1231 #6	3.200	8.115	50.378	30.337
HPLCStds1231 #5	3.183	3.873	23.705	15.466
HPLCStds1231 #5	3.183	3.857	23.837	15.406
HPLCStds1231 #4	3.180	2.414	14.668	9.845
HPLCStds1231 #4	3.180	2.411	14.765	9.834
HPLCStds1231 #3	3.173	1.138	6.633	4.713
HPLCStds1231 #3	3.173	1.144	6.687	4.739
HPLCStds1231 #2	3.177	0.235	1.172	0.962
Raphael1019 #1	3.180	0.131	0.612	0.524
Raphael1019 #1	3.183	0.130	0.613	0.520



Injection Name	Ret.Time min ECD_1	Area µS*min ECD_1	Height µS ECD_1	Amount µg/mL ECD_1
	Chloride	Chloride	Chloride	Chloride
HPLCStds1231 #6	4.663	5.777	39.125	30.453
HPLCStds1231 #6	4.663	5.828	39.457	30.669
HPLCStds1231 #5	4.660	2.633	17.056	15.396
HPLCStds1231 #5	4.657	2.609	17.007	15.268
HPLCStds1231 #4	4.653	1.662	10.521	10.030
HPLCStds1231 #4	4.657	1.636	10.453	9.877
HPLCStds1231 #3	4.647	0.771	4.851	4.804
HPLCStds1231 #3	4.653	0.778	4.868	4.845
Raphael1019 #1	4.653	0.076	0.484	0.526
Raphael1019 #1	4.650	0.075	0.478	0.519
HPLCStds1231 #2	4.653	0.150	0.944	0.990
HPLCStds1231 #2	4.653	0.149	0.945	0.986
HPLCStds1231 #6	4.673	5.731	39.235	30.260
HPLCStds1231 #6	4.677	5.799	39.514	30.549
HPLCStds1231 #5	4.663	2.622	17.198	15.339
HPLCStds1231 #5	4.660	2.615	17.185	15.301
HPLCStds1231 #4	4.660	1.629	10.523	9.838
HPLCStds1231 #4	4.660	1.630	10.522	9.843
HPLCStds1231 #3	4.663	0.767	4.855	4.776
HPLCStds1231 #3	4.660	0.771	4.871	4.800
HPLCStds1231 #2	4.657	0.146	0.934	0.963
Raphael1019 #1	4.657	0.074	0.476	0.516
Raphael1019 #1	4.663	0.074	0.477	0.514

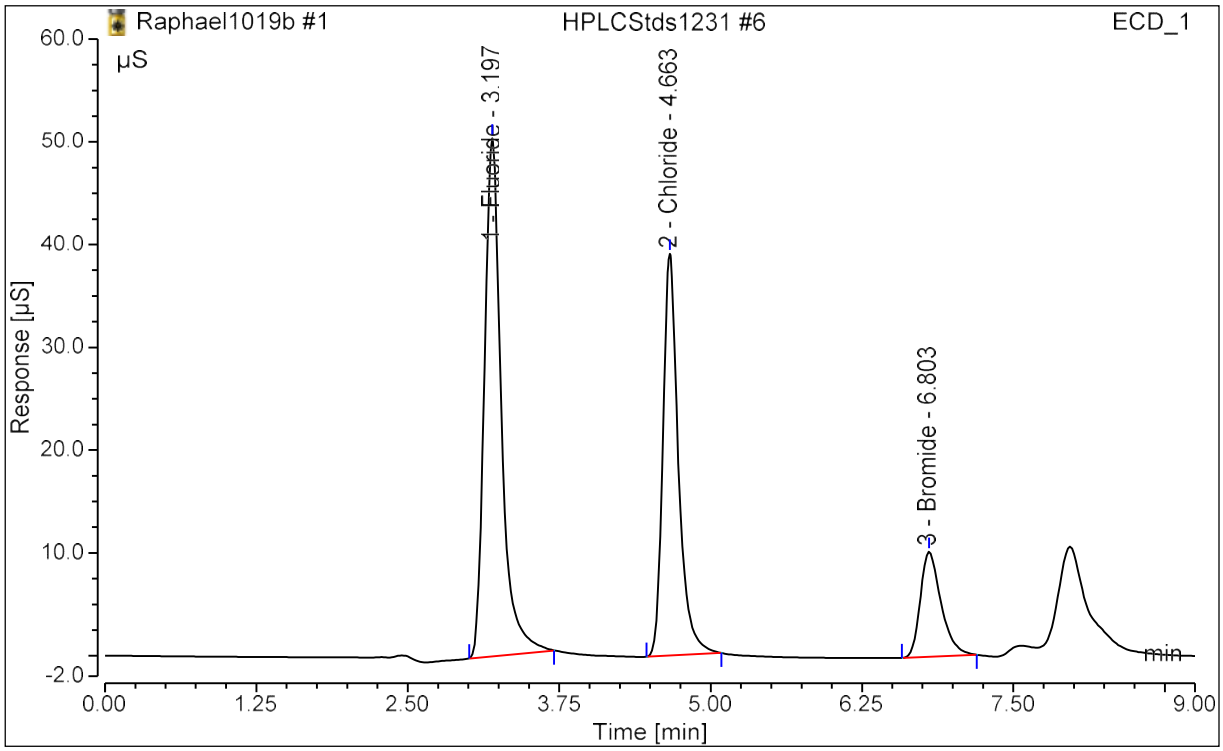


Injection Name	Ret.Time min ECD_1	Area µS*min ECD_1	Height µS ECD_1	Amount µg/mL ECD_1
	Bromide	Bromide	Bromide	Bromide
HPLCStds1231 #6	6.803	2.028	10.227	30.273
HPLCStds1231 #6	6.803	2.042	10.346	30.454
HPLCStds1231 #5	6.830	0.948	4.789	15.099
HPLCStds1231 #5	6.813	0.949	4.798	15.109
HPLCStds1231 #4	6.817	0.605	3.082	9.830
HPLCStds1231 #4	6.833	0.602	3.053	9.778
HPLCStds1231 #3	6.813	0.291	1.487	4.813
HPLCStds1231 #3	6.820	0.293	1.495	4.844
Raphael1019 #1	6.830	0.030	0.151	0.506
Raphael1019 #1	6.820	0.030	0.151	0.506
HPLCStds1231 #2	6.820	0.059	0.299	1.001
HPLCStds1231 #2	6.817	0.062	0.308	1.051
HPLCStds1231 #6	6.807	2.054	10.470	30.606
HPLCStds1231 #6	6.820	2.056	10.468	30.635
HPLCStds1231 #5	6.817	0.975	4.931	15.506
HPLCStds1231 #5	6.810	0.976	4.936	15.515
HPLCStds1231 #4	6.817	0.609	3.131	9.892
HPLCStds1231 #4	6.813	0.608	3.127	9.877
HPLCStds1231 #3	6.837	0.295	1.507	4.877
HPLCStds1231 #3	6.823	0.297	1.515	4.906
HPLCStds1231 #2	6.820	0.058	0.300	0.980
Raphael1019 #1	6.823	0.029	0.150	0.495
Raphael1019 #1	6.837	0.030	0.154	0.512



Peak Analysis Report

Sample Name:	**HPLCStds1231 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 14:04**	Run Time:	**14.50**

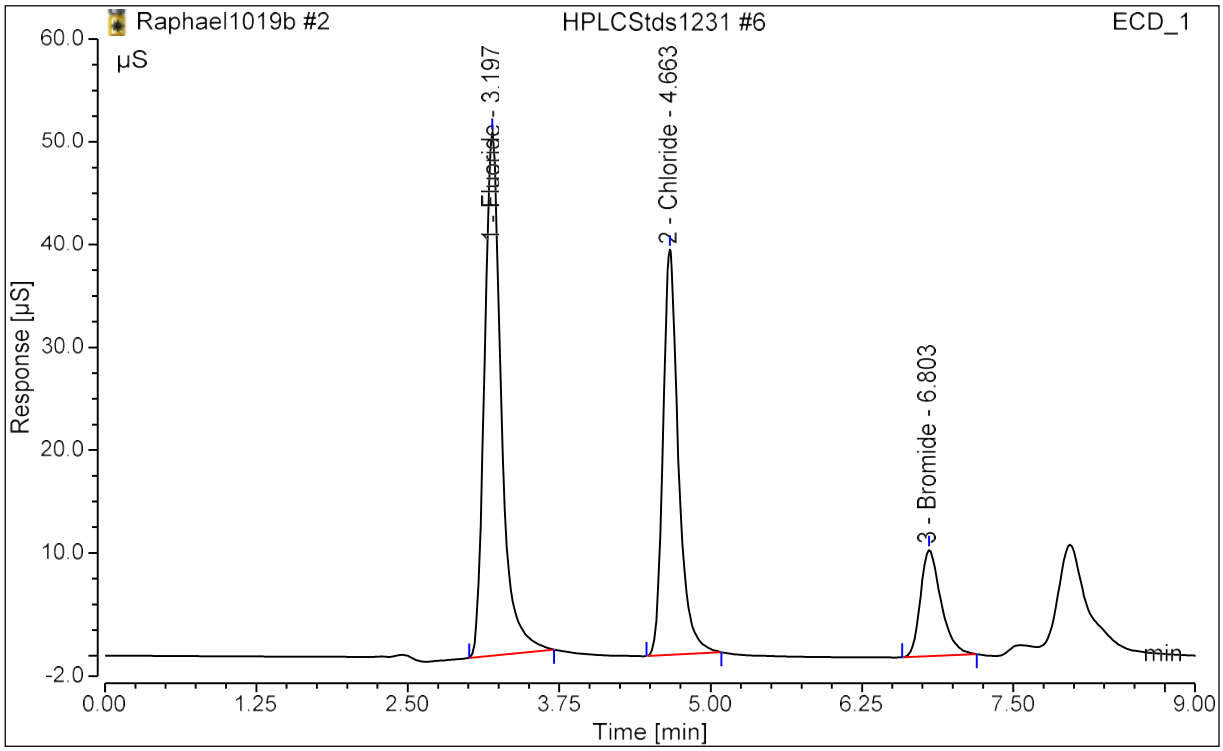


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.20	Fluoride	8.145	50.417	30.43465	FALSE	FALSE
2	4.66	Chloride	5.777	39.125	30.45314	FALSE	FALSE
3	6.80	Bromide	2.028	10.227	30.27287	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 14:20**	Run Time:	**14.50**

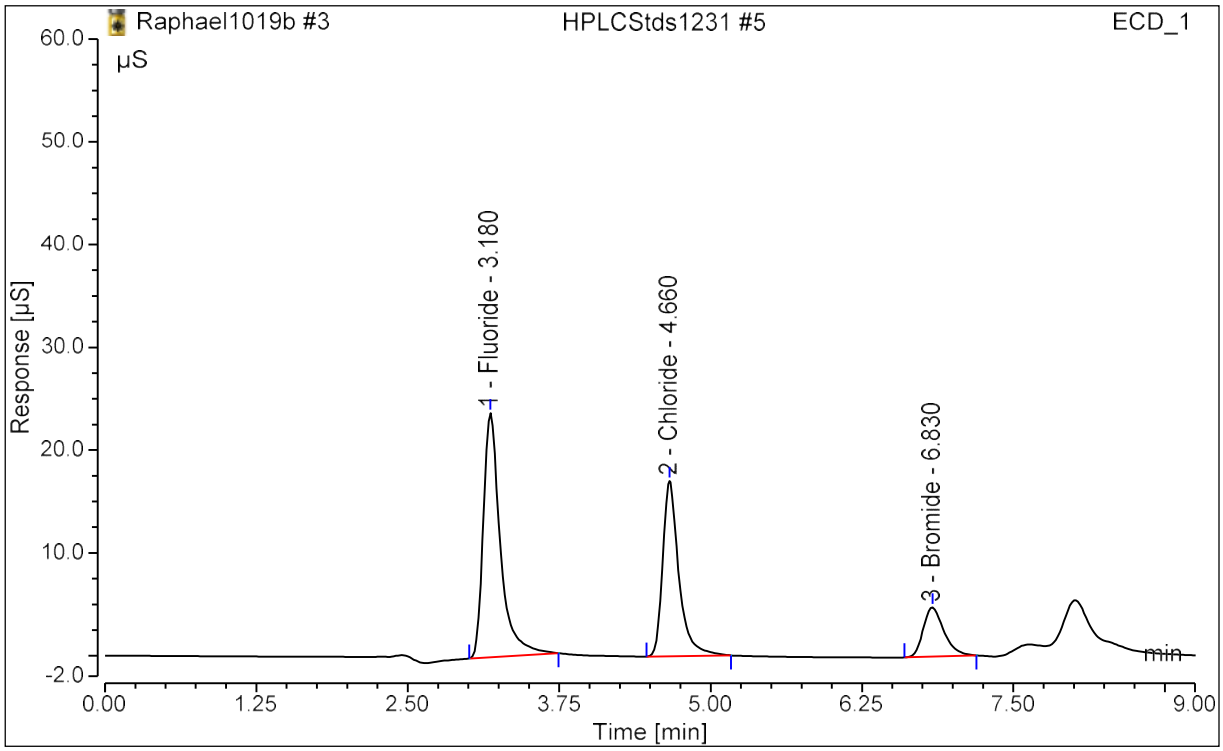


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.20	Fluoride	8.228	50.902	30.70362	FALSE	FALSE
2	4.66	Chloride	5.828	39.457	30.66886	FALSE	FALSE
3	6.80	Bromide	2.042	10.346	30.45412	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 14:36**	Run Time:	**14.50**

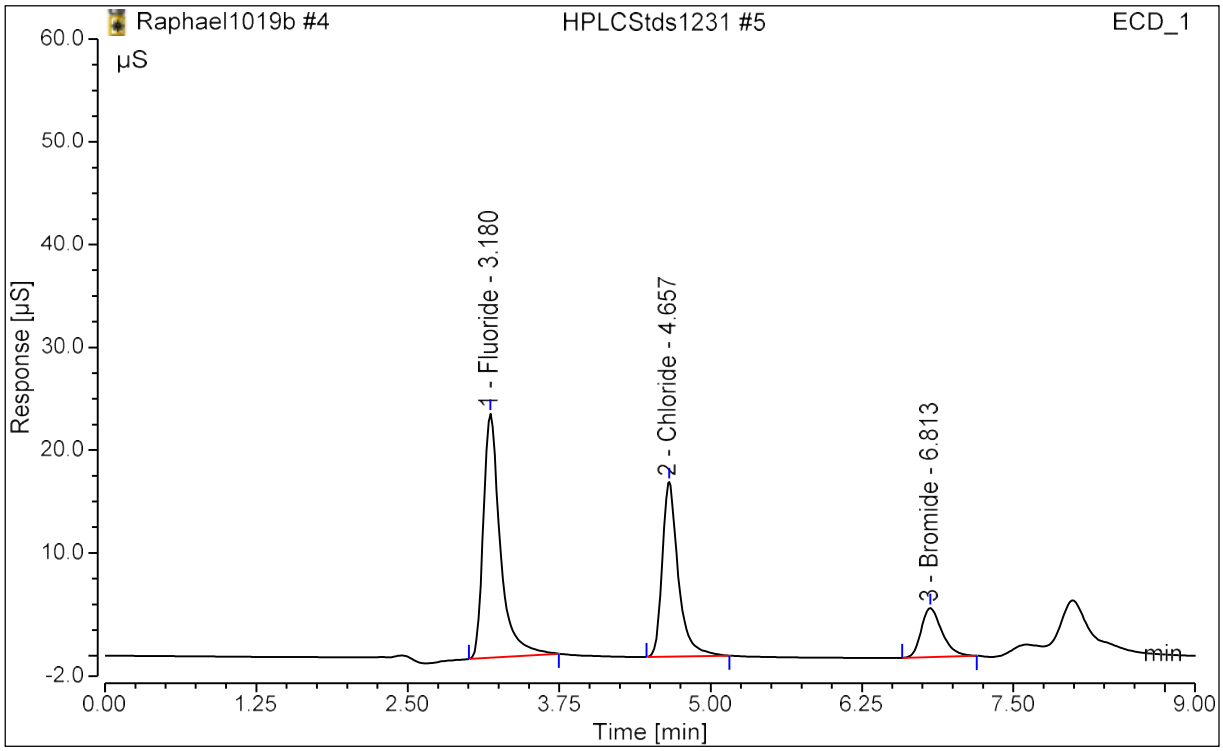


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	3.886	23.759	15.51550	FALSE	FALSE
2	4.66	Chloride	2.633	17.056	15.39565	FALSE	FALSE
3	6.83	Bromide	0.948	4.789	15.09917	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 14:52**	Run Time:	**14.50**

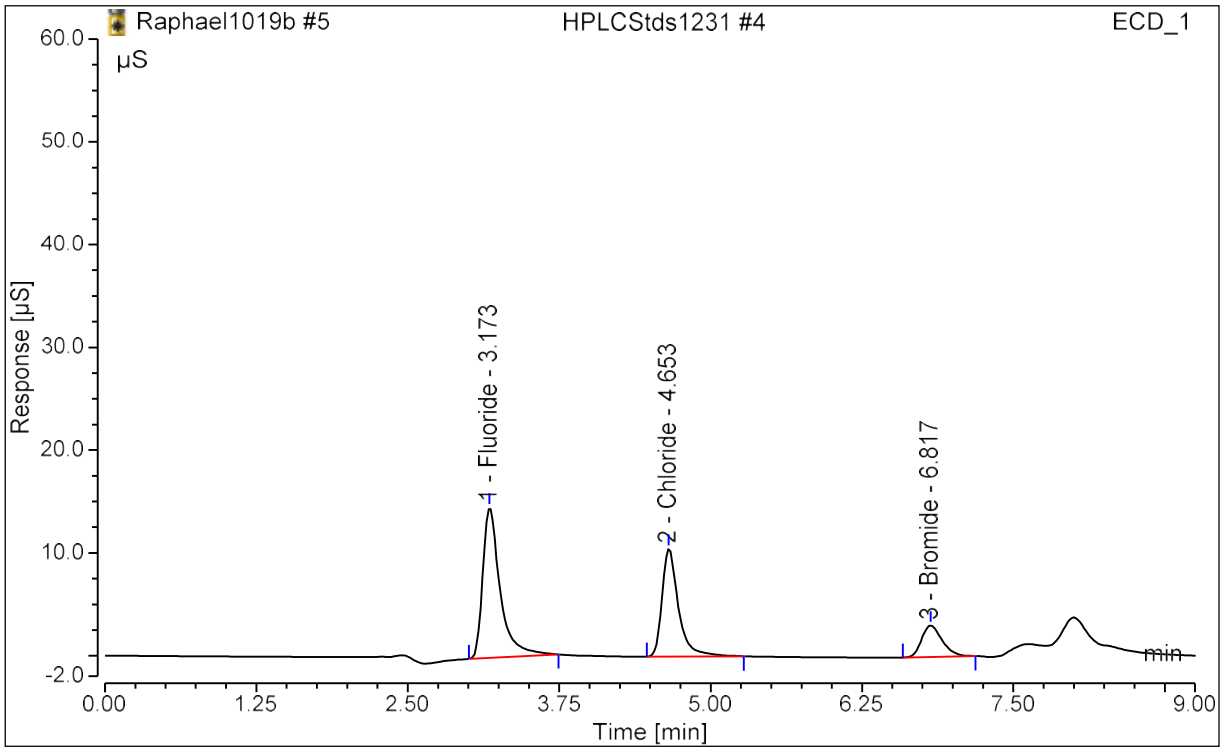


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	3.862	23.769	15.42728	FALSE	FALSE
2	4.66	Chloride	2.609	17.007	15.26817	FALSE	FALSE
3	6.81	Bromide	0.949	4.798	15.10948	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 15:08**	Run Time:	**14.50**

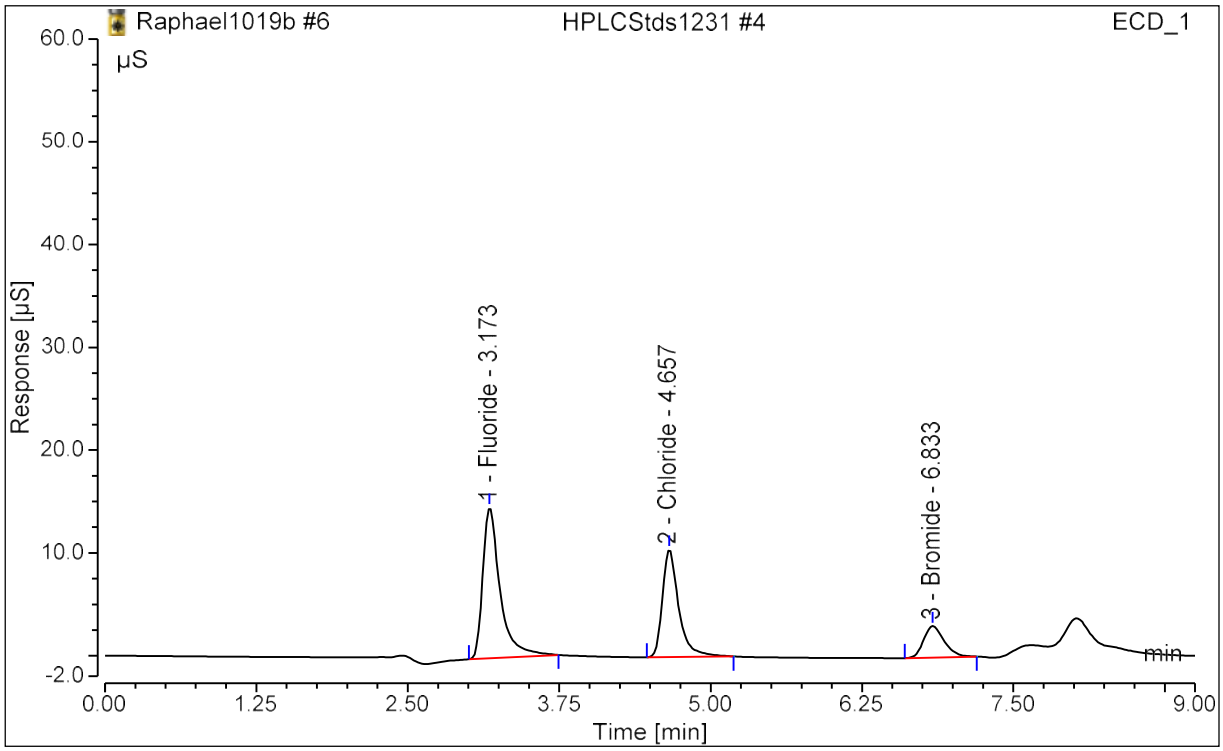


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	2.438	14.649	9.94004	FALSE	FALSE
2	4.65	Chloride	1.662	10.521	10.03041	FALSE	FALSE
3	6.82	Bromide	0.605	3.082	9.83026	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 15:25**	Run Time:	**14.50**

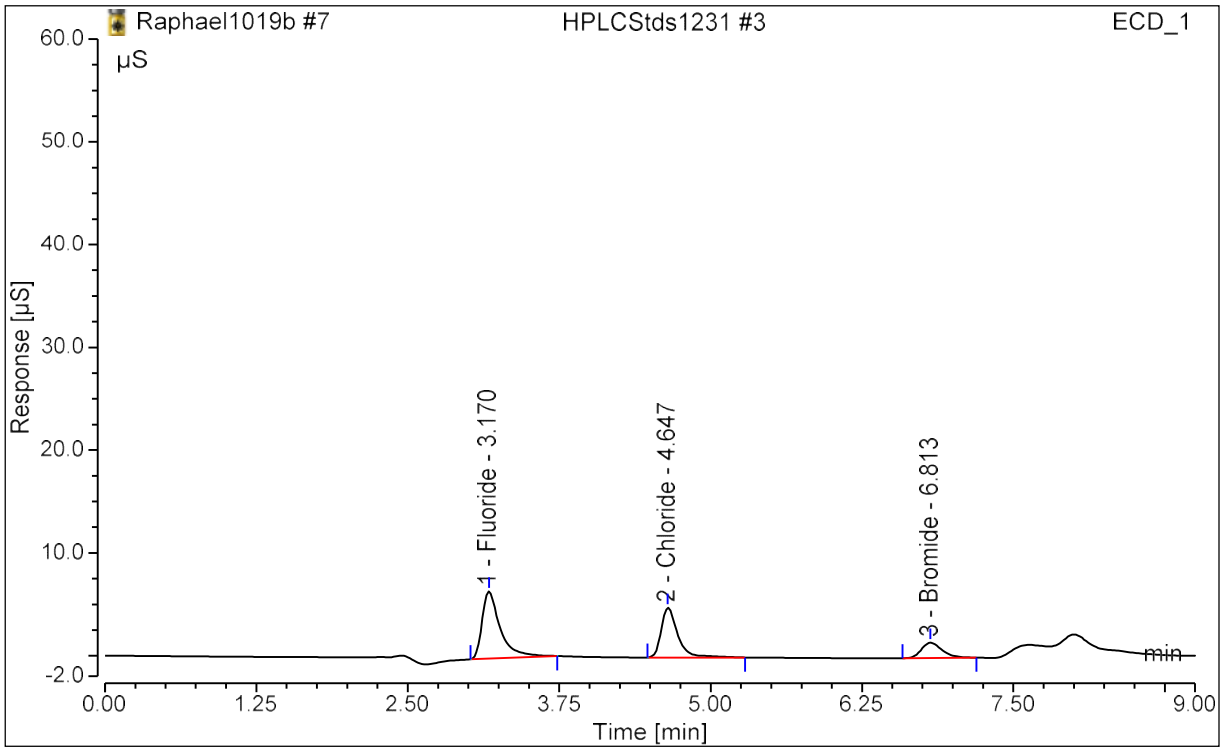


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	2.431	14.664	9.91042	FALSE	FALSE
2	4.66	Chloride	1.636	10.453	9.87695	FALSE	FALSE
3	6.83	Bromide	0.602	3.053	9.77794	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 15:41**	Run Time:	**14.50**

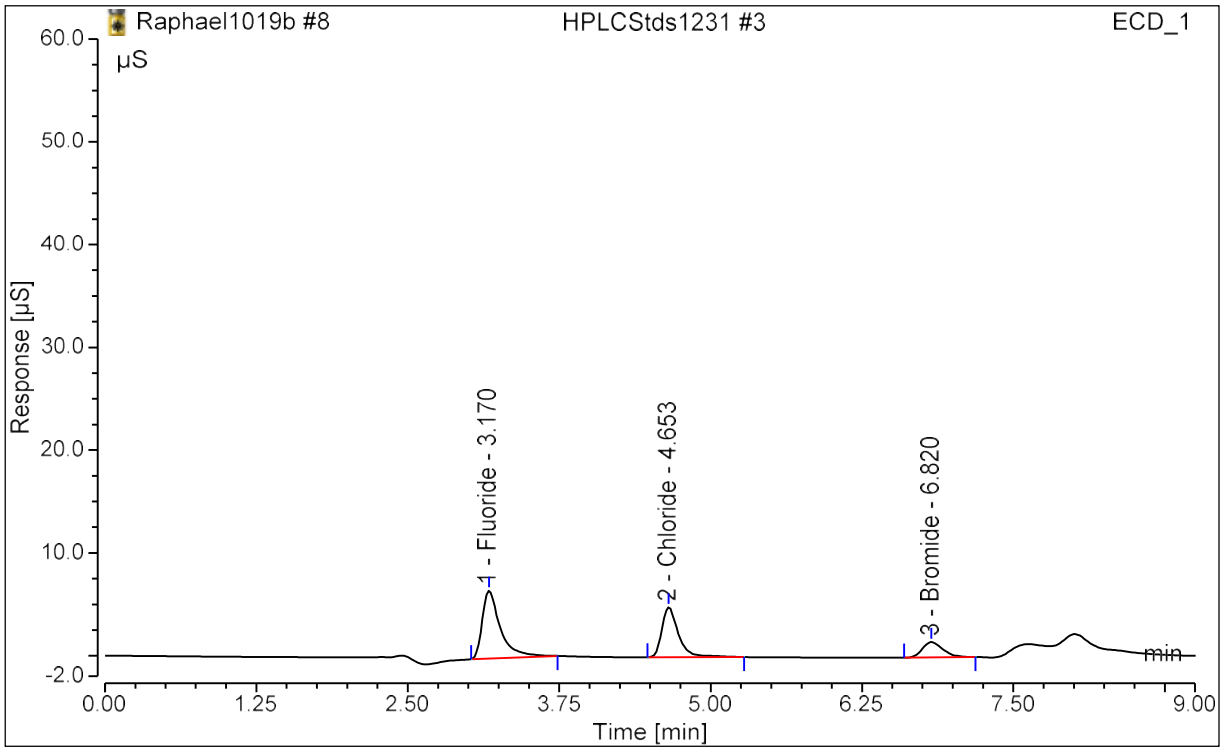


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	1.137	6.522	4.70718	FALSE	FALSE
2	4.65	Chloride	0.771	4.851	4.80440	FALSE	FALSE
3	6.81	Bromide	0.291	1.487	4.81317	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**14-Dec-2021 / 15:57**	Run Time:	**14.50**

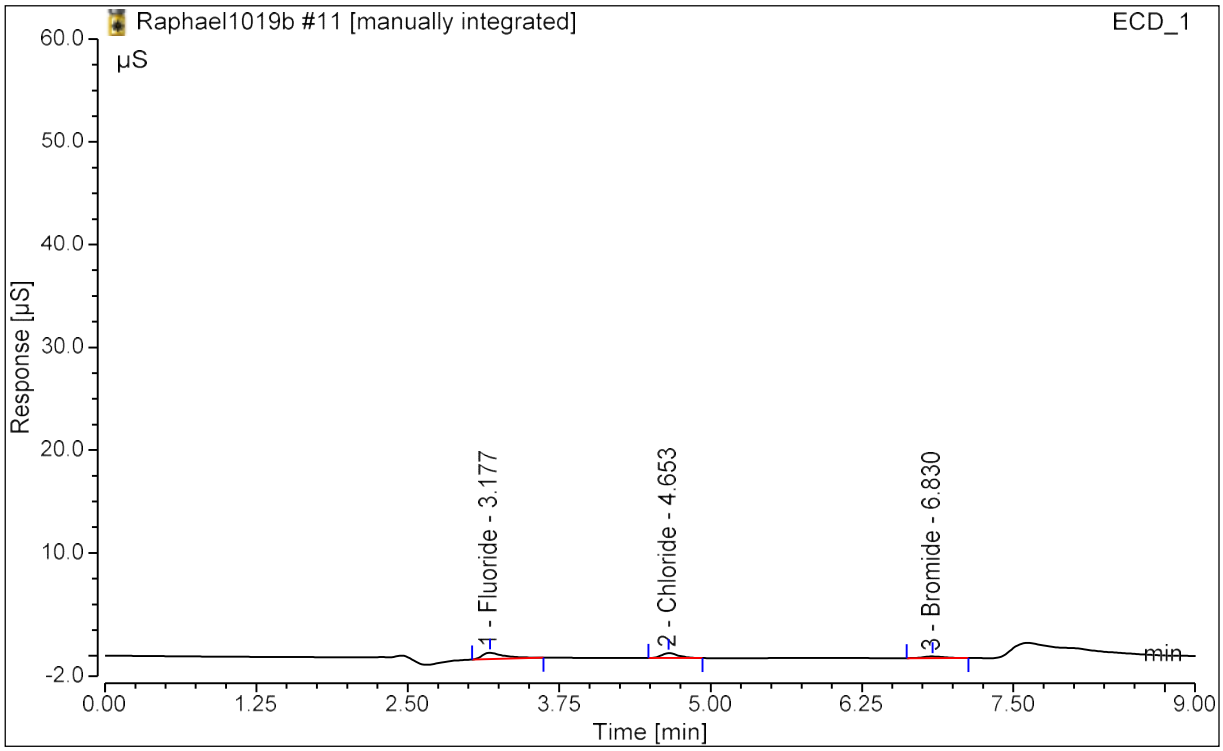


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	1.144	6.574	4.73608	FALSE	FALSE
2	4.65	Chloride	0.778	4.868	4.84474	FALSE	FALSE
3	6.82	Bromide	0.293	1.495	4.84370	FALSE	FALSE

Peak Analysis Report

Sample Name:	**Raphael1019 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 11:37**	Run Time:	**14.50**

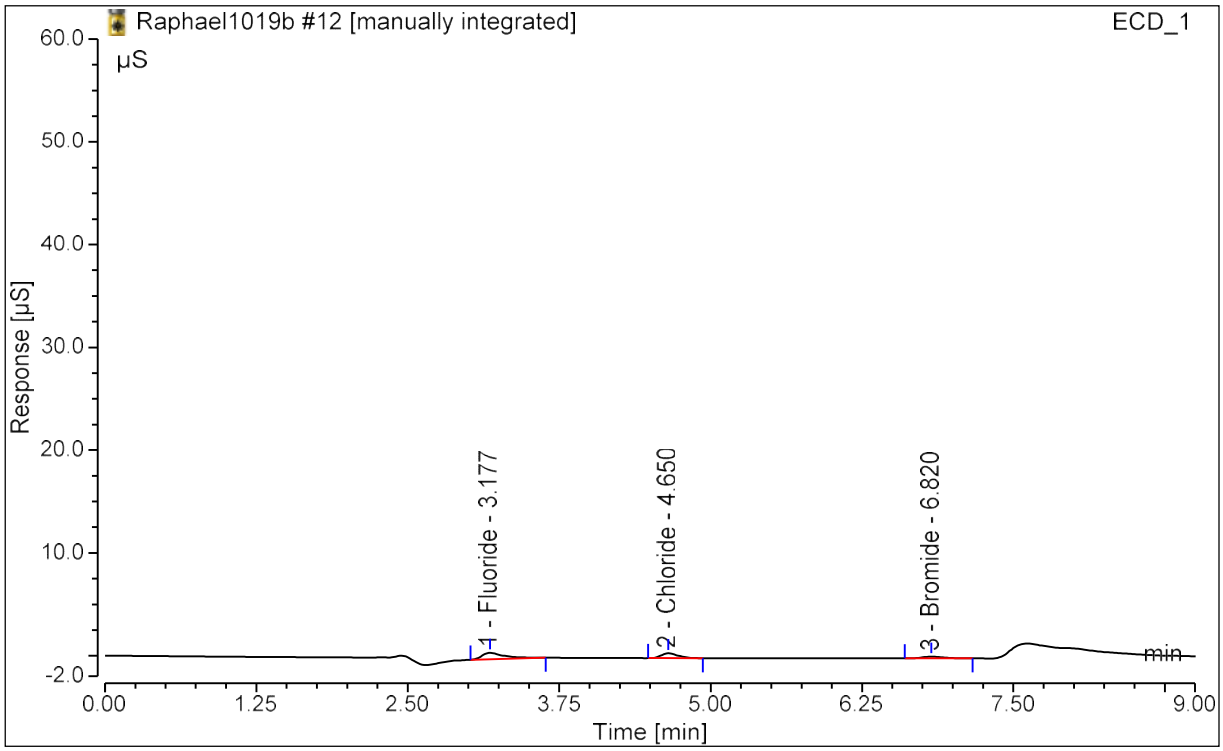


Analyst Comment: II PRM 12/16/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	0.127	0.605	0.50788	FALSE	TRUE
2	4.65	Chloride	0.076	0.484	0.52553	FALSE	TRUE
3	6.83	Bromide	0.030	0.151	0.50580	FALSE	FALSE

Peak Analysis Report

Sample Name:	**Raphael1019 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 11:54**	Run Time:	**14.50**

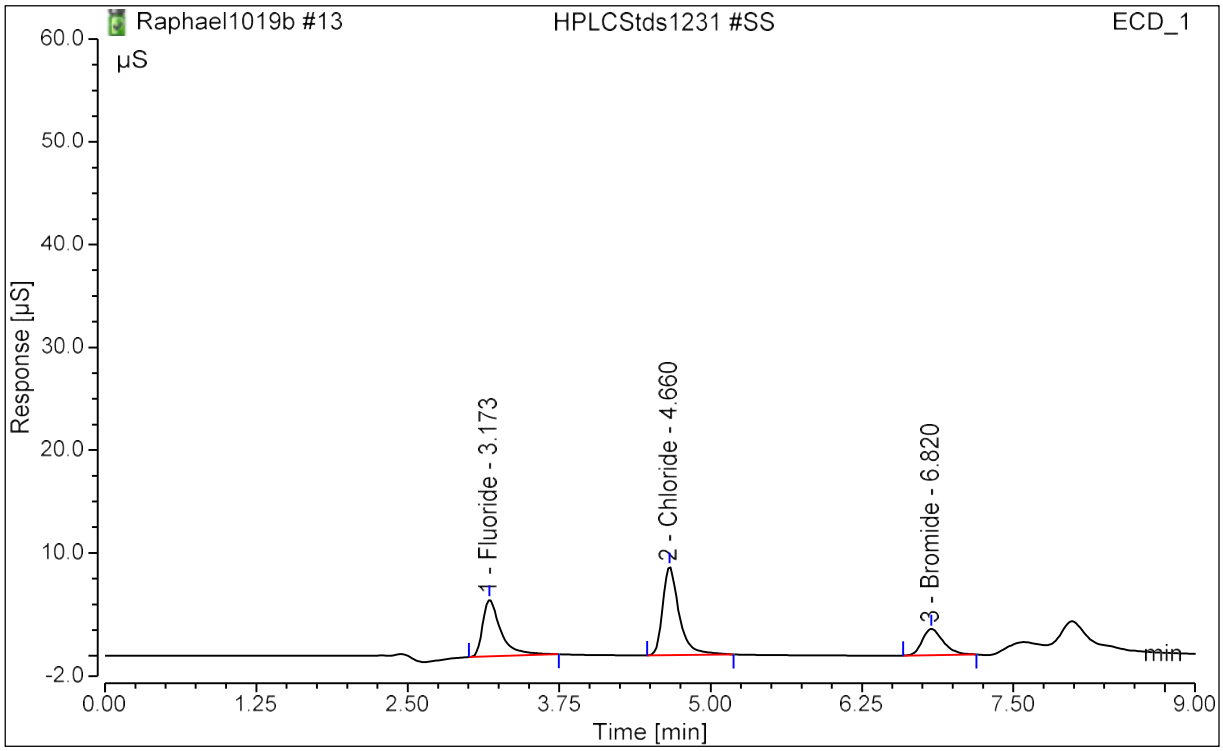


Analyst Comment: II PRM 12/16/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	0.132	0.614	0.52716	FALSE	TRUE
2	4.65	Chloride	0.075	0.478	0.51907	FALSE	TRUE
3	6.82	Bromide	0.030	0.151	0.50648	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 14:09**	Run Time:	**14.50**

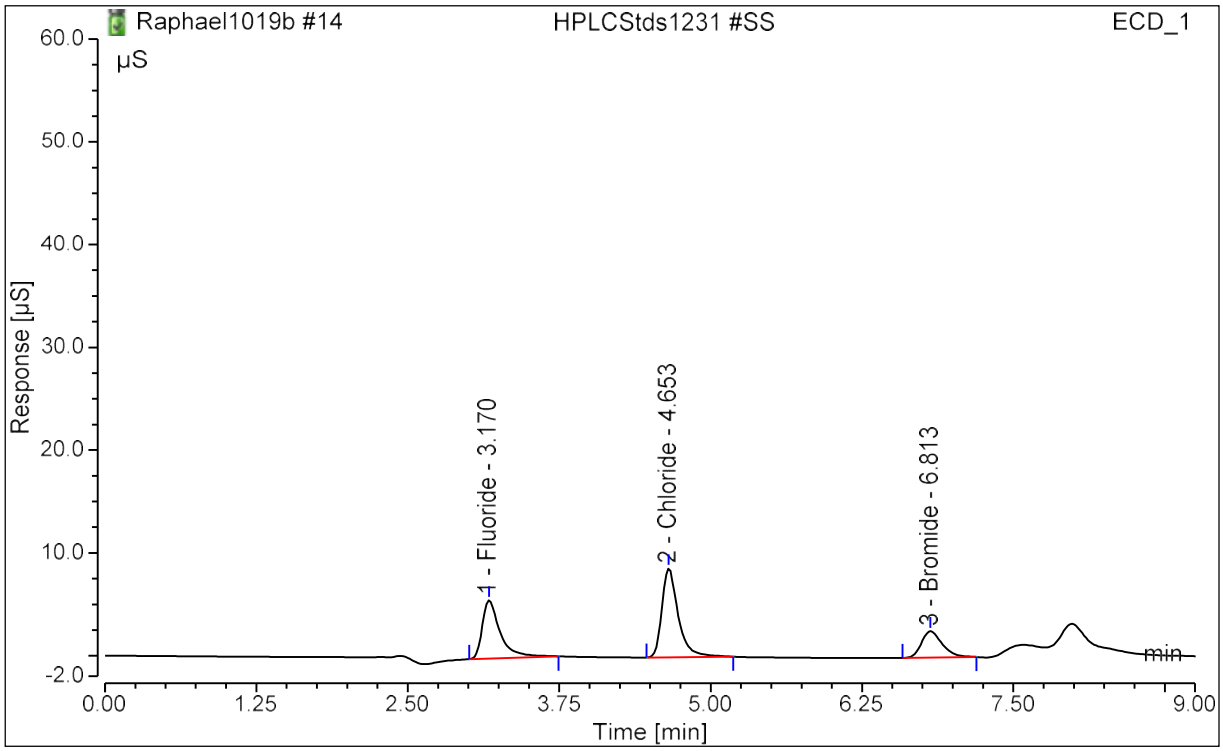


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.963	5.521	3.99265	FALSE	FALSE
2	4.66	Chloride	1.349	8.580	8.22169	FALSE	FALSE
3	6.82	Bromide	0.507	2.544	8.27785	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 14:25**	Run Time:	**14.50**

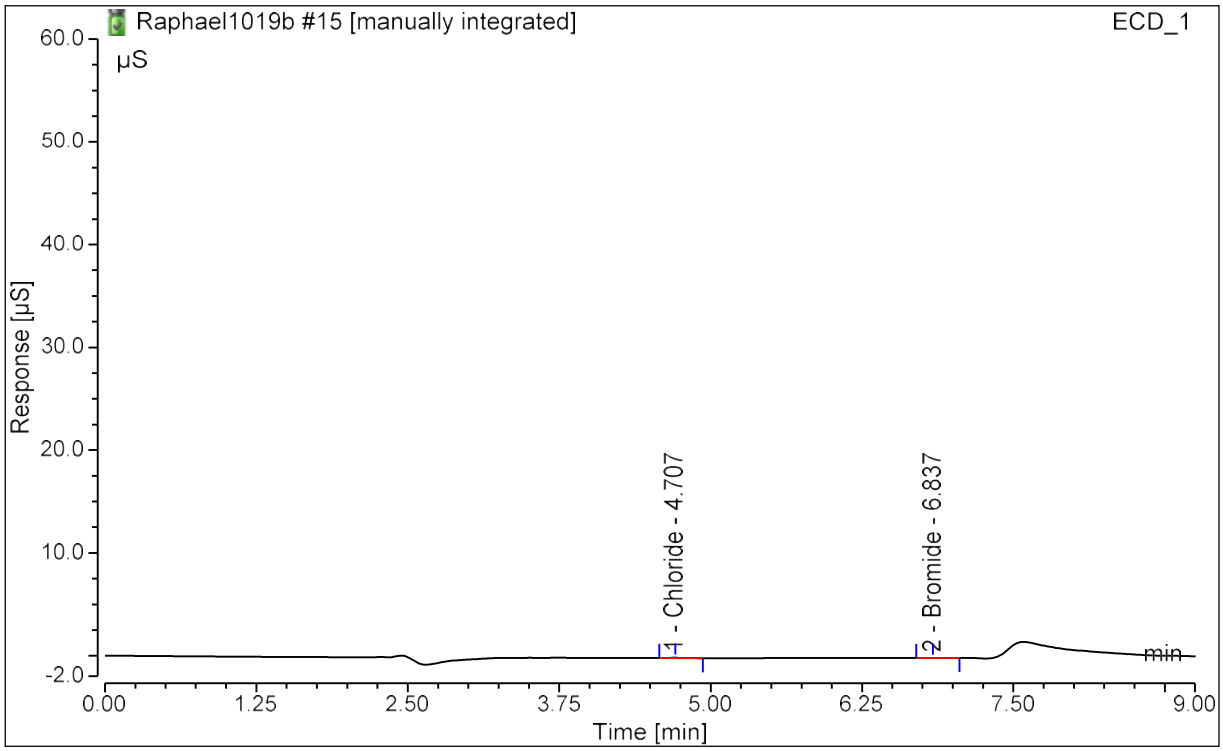


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.967	5.635	4.01200	FALSE	FALSE
2	4.65	Chloride	1.362	8.661	8.30105	FALSE	FALSE
3	6.81	Bromide	0.511	2.561	8.34082	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 14:41**	Run Time:	**14.50**

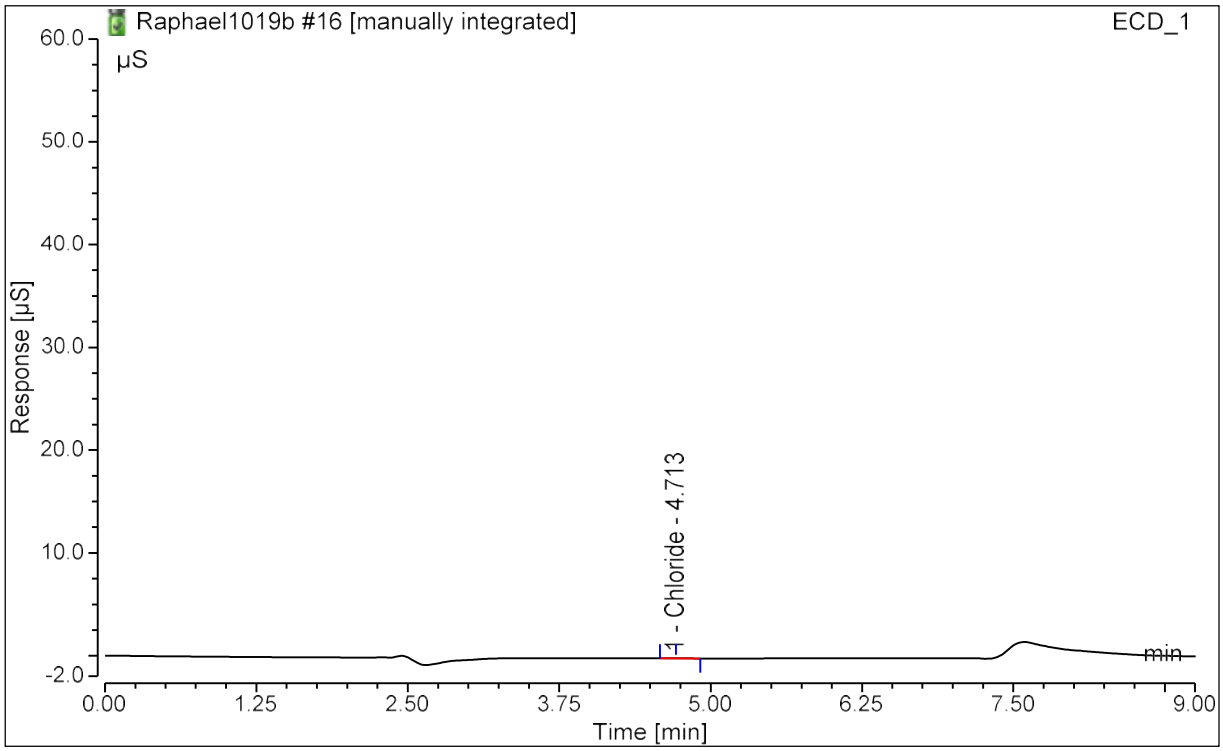


Analyst Comment: NI PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.71	Chloride	0.003	0.020	0.06722	FALSE	TRUE
2	6.84	Bromide	0.000	0.002	0.01405	FALSE	TRUE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**15-Dec-2021 / 14:57**	Run Time:	**14.50**

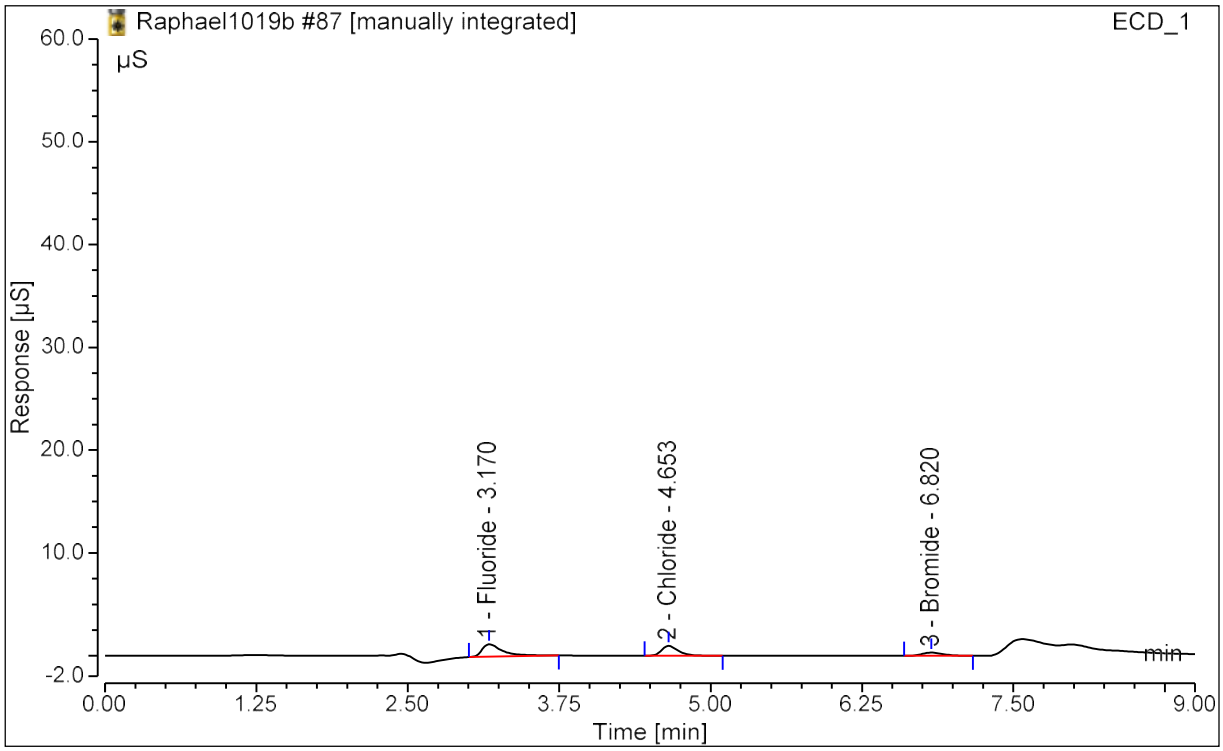


Analyst Comment: NI PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
1	4.71	Chloride	0.003	0.020	0.06703	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

Peak Analysis Report

Sample Name:	**HPLCStds1231 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 10:20**	Run Time:	**14.50**

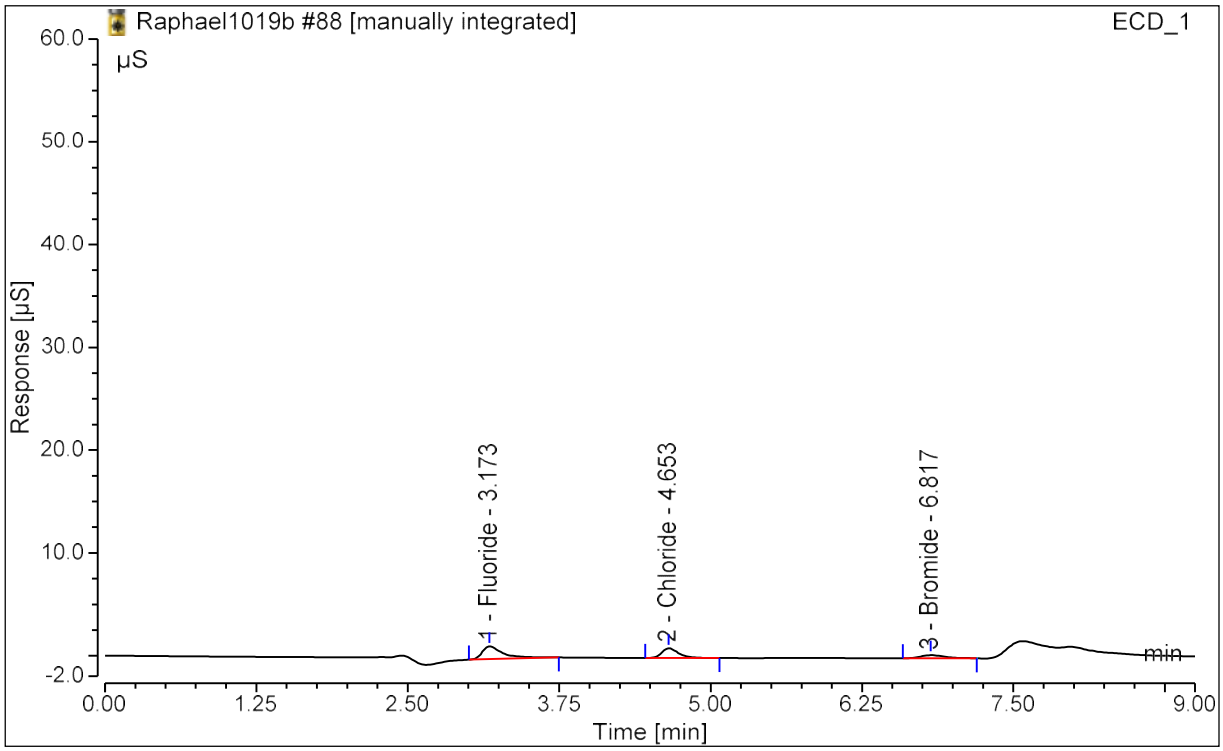


Analyst Comment: II PRM 12/16/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.243	1.219	0.99750	FALSE	FALSE
2	4.65	Chloride	0.150	0.944	0.99001	FALSE	TRUE
3	6.82	Bromide	0.059	0.299	1.00055	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 10:36**	Run Time:	**14.50**

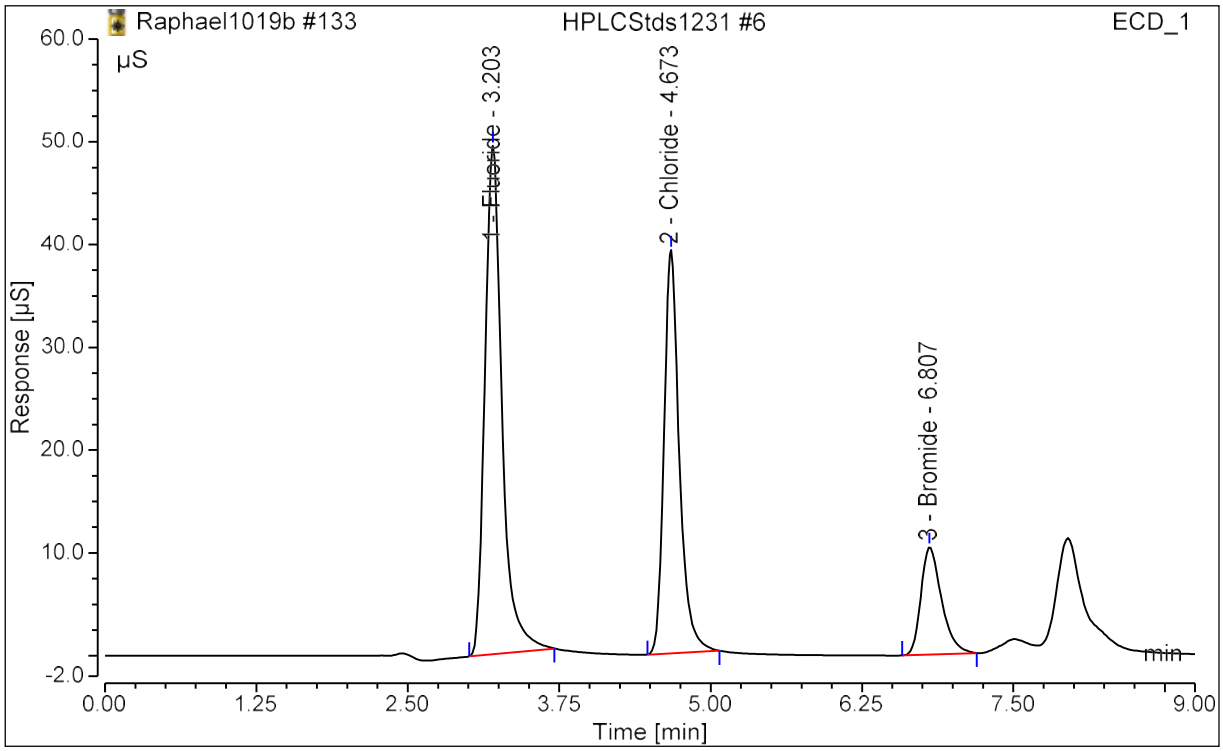


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	0.248	1.231	1.01677	FALSE	FALSE
2	4.65	Chloride	0.149	0.945	0.98561	FALSE	TRUE
3	6.82	Bromide	0.062	0.308	1.05142	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 22:45**	Run Time:	**14.50**

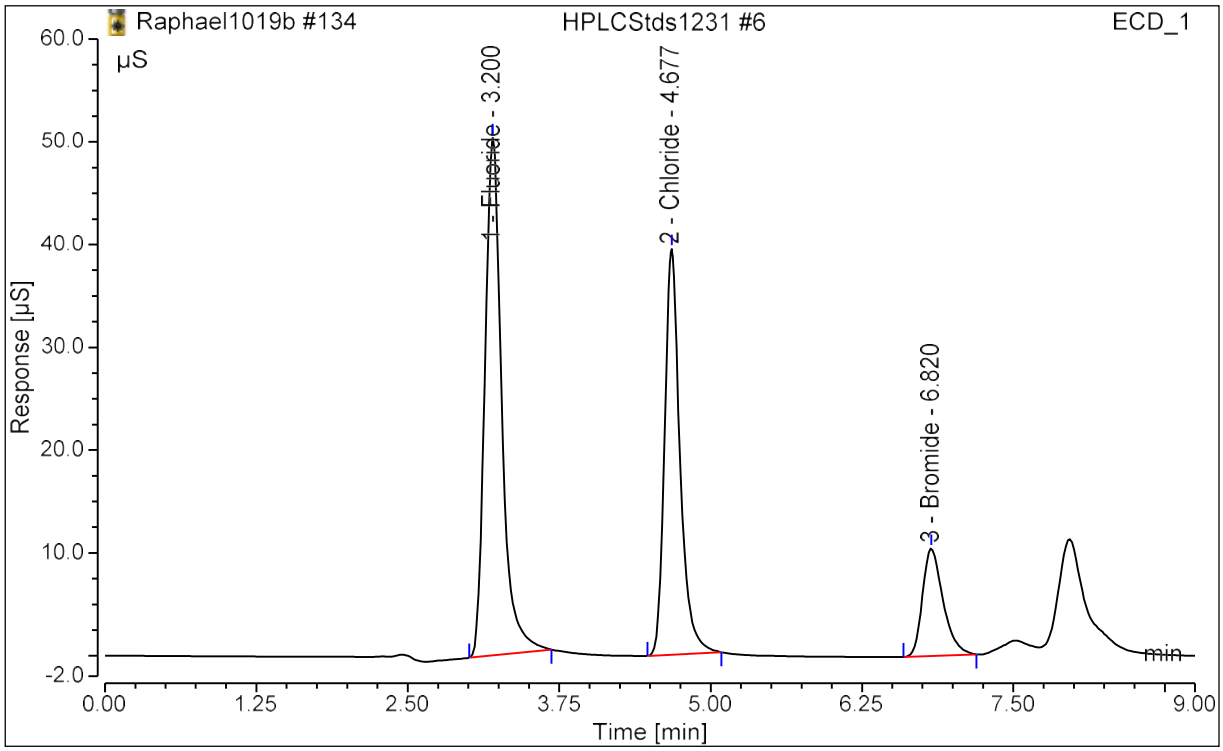


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.20	Fluoride	8.087	49.475	30.24841	FALSE	FALSE
2	4.67	Chloride	5.731	39.235	30.26028	FALSE	FALSE
3	6.81	Bromide	2.054	10.470	30.60553	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 23:01**	Run Time:	**14.50**

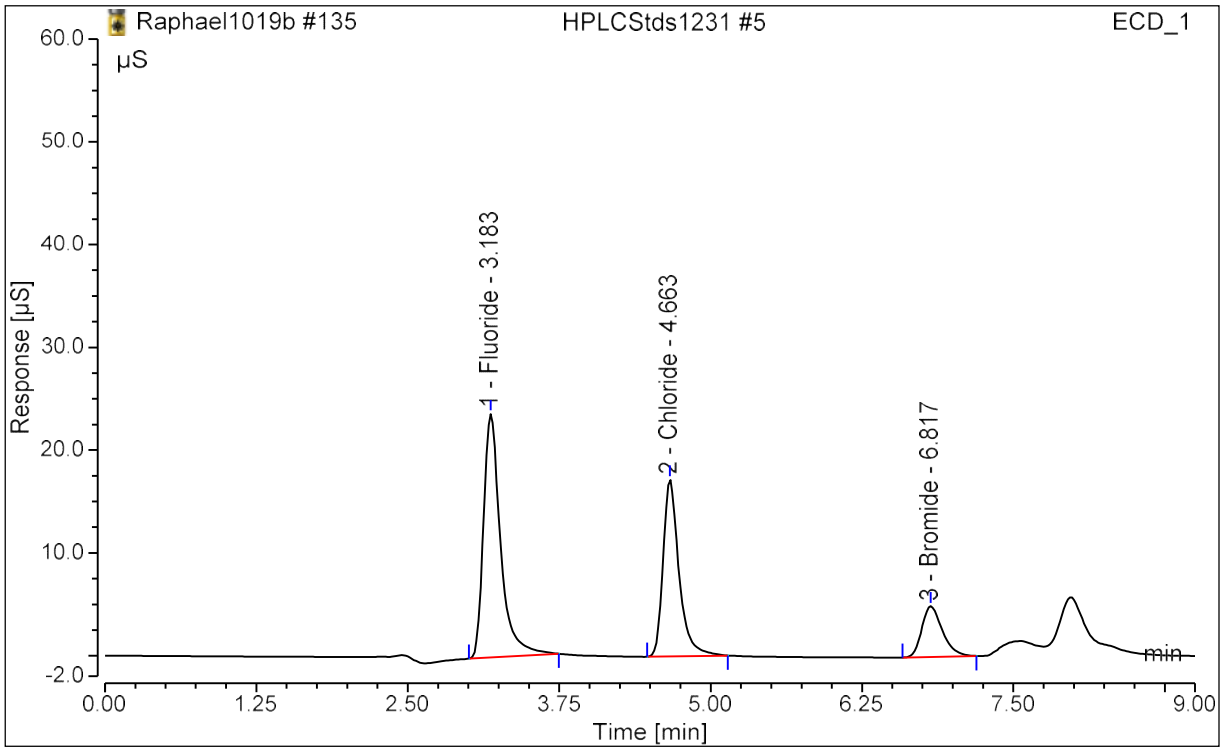


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.20	Fluoride	8.115	50.378	30.33724	FALSE	FALSE
2	4.68	Chloride	5.799	39.514	30.54867	FALSE	FALSE
3	6.82	Bromide	2.056	10.468	30.63466	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 23:17**	Run Time:	**14.50**

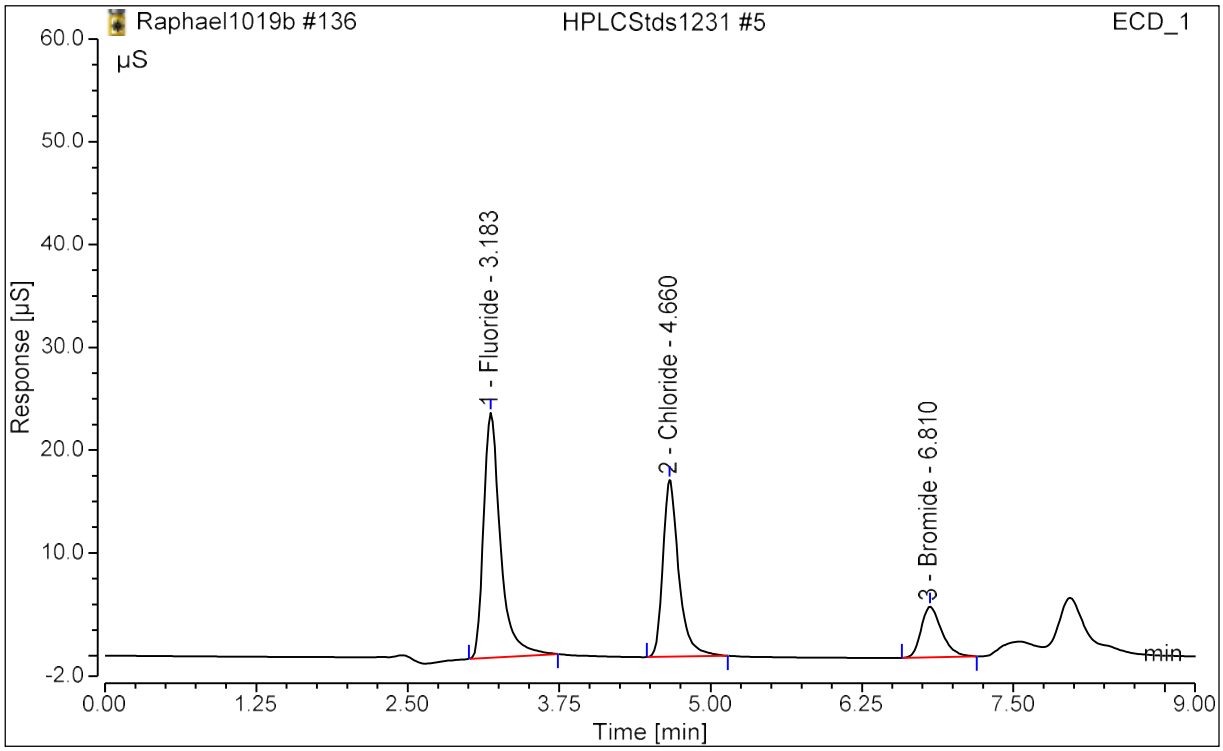


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	3.873	23.705	15.46584	FALSE	FALSE
2	4.66	Chloride	2.622	17.198	15.33876	FALSE	FALSE
3	6.82	Bromide	0.975	4.931	15.50558	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 23:34**	Run Time:	**14.50**

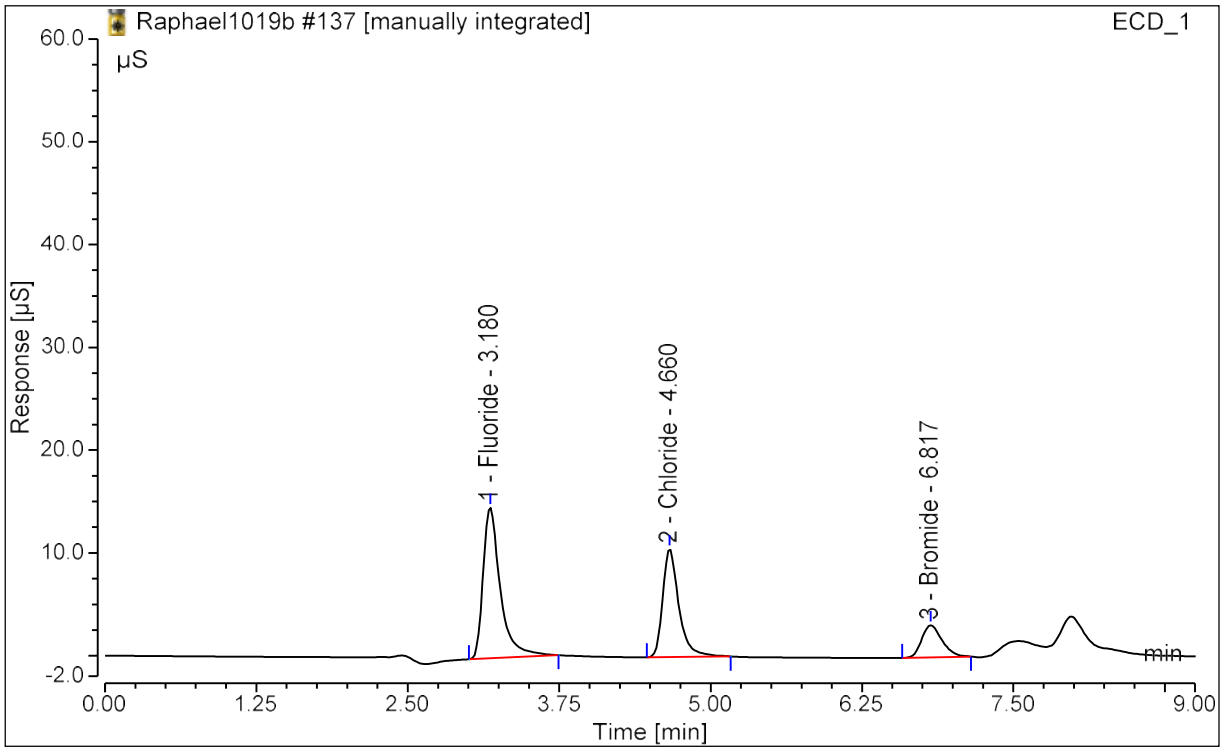


Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	3.857	23.837	15.40608	FALSE	FALSE
2	4.66	Chloride	2.615	17.185	15.30124	FALSE	FALSE
3	6.81	Bromide	0.976	4.936	15.51492	FALSE	FALSE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**16-Dec-2021 / 23:50**	Run Time:	**14.50**

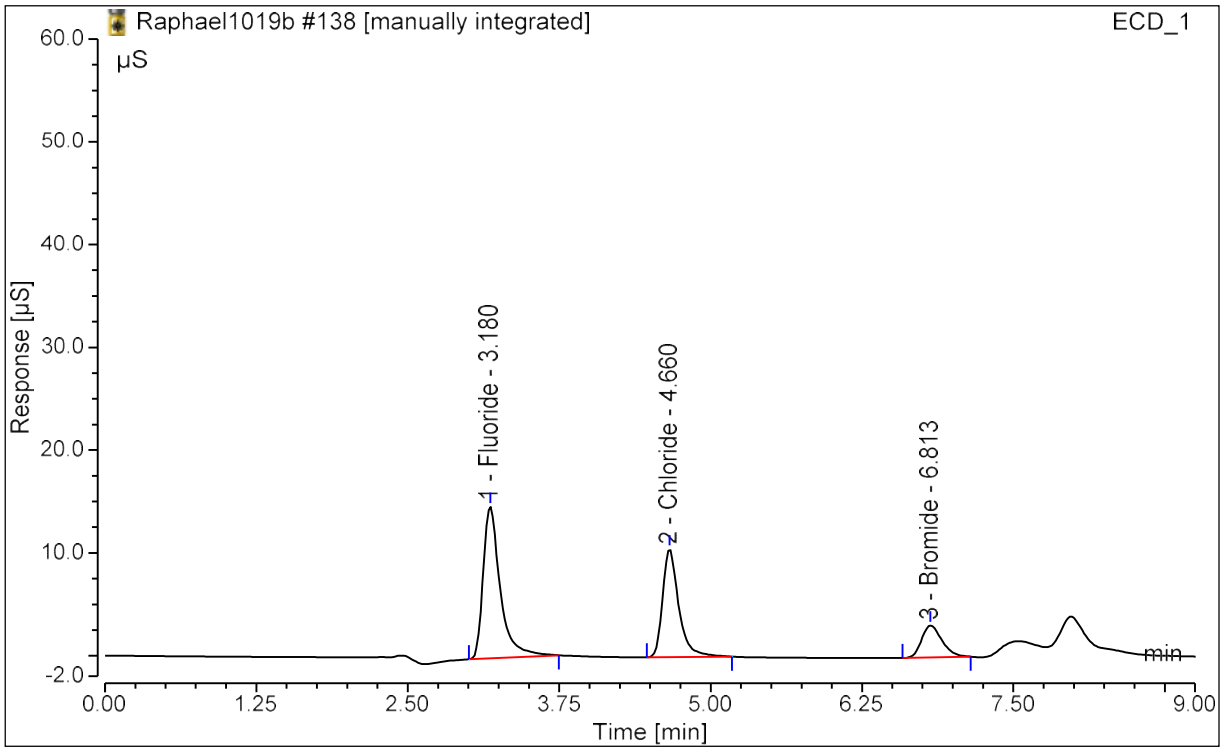


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	2.414	14.668	9.84460	FALSE	FALSE
2	4.66	Chloride	1.629	10.523	9.83784	FALSE	FALSE
3	6.82	Bromide	0.609	3.131	9.89209	FALSE	TRUE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**17-Dec-2021 / 00:06**	Run Time:	**14.50**

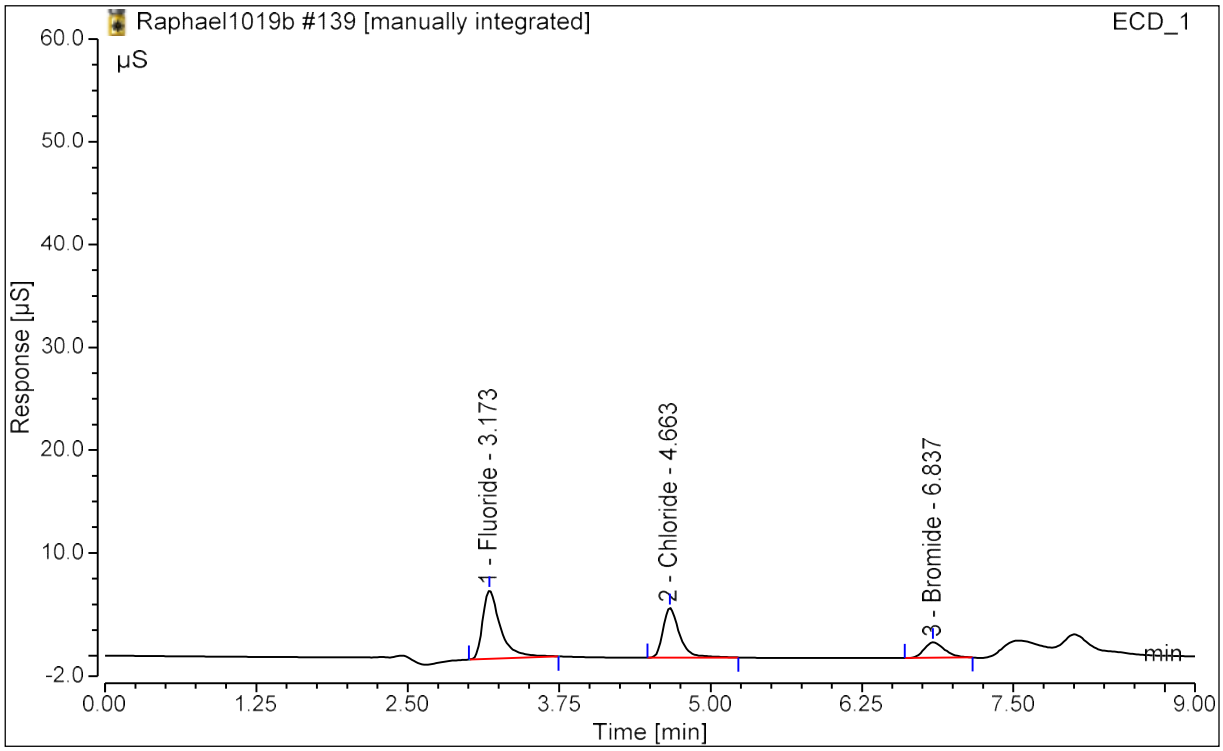


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	2.411	14.765	9.83362	FALSE	FALSE
2	4.66	Chloride	1.630	10.522	9.84332	FALSE	FALSE
3	6.81	Bromide	0.608	3.127	9.87722	FALSE	TRUE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**17-Dec-2021 / 00:22**	Run Time:	**14.50**

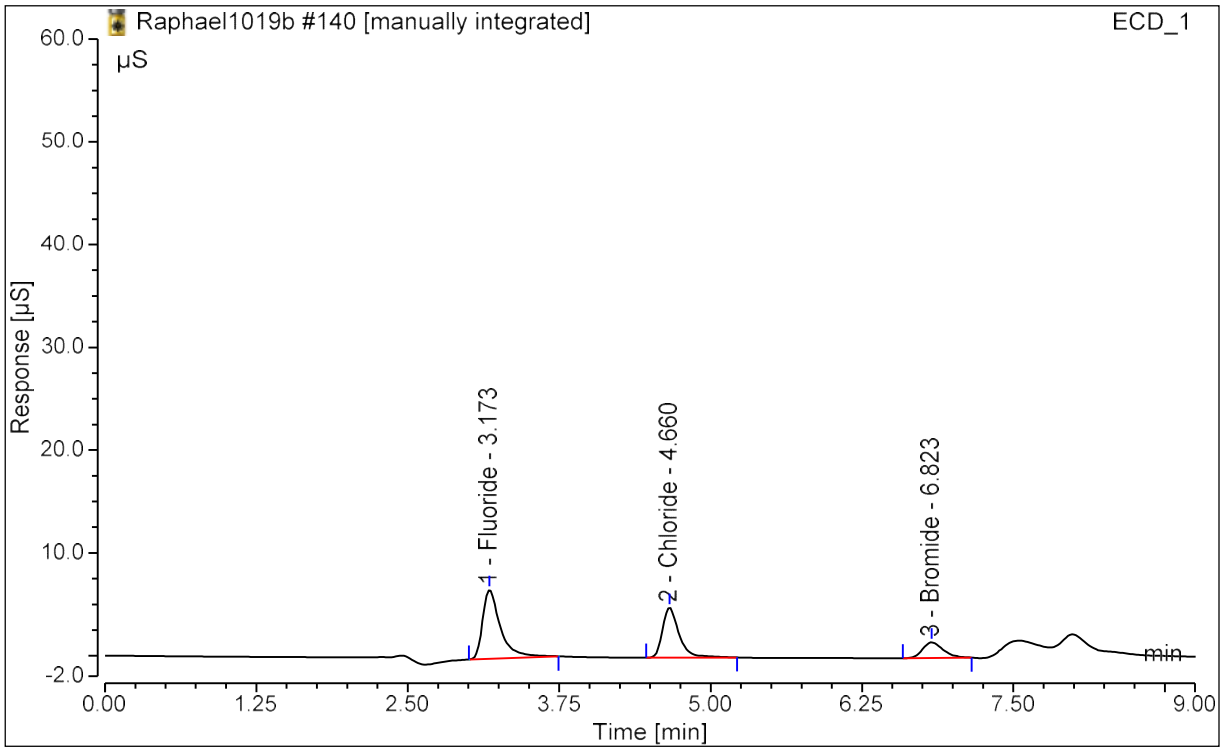


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	1.138	6.633	4.71349	FALSE	FALSE
2	4.66	Chloride	0.767	4.855	4.77551	FALSE	TRUE
3	6.84	Bromide	0.295	1.507	4.87728	FALSE	TRUE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**17-Dec-2021 / 00:38**	Run Time:	**14.50**

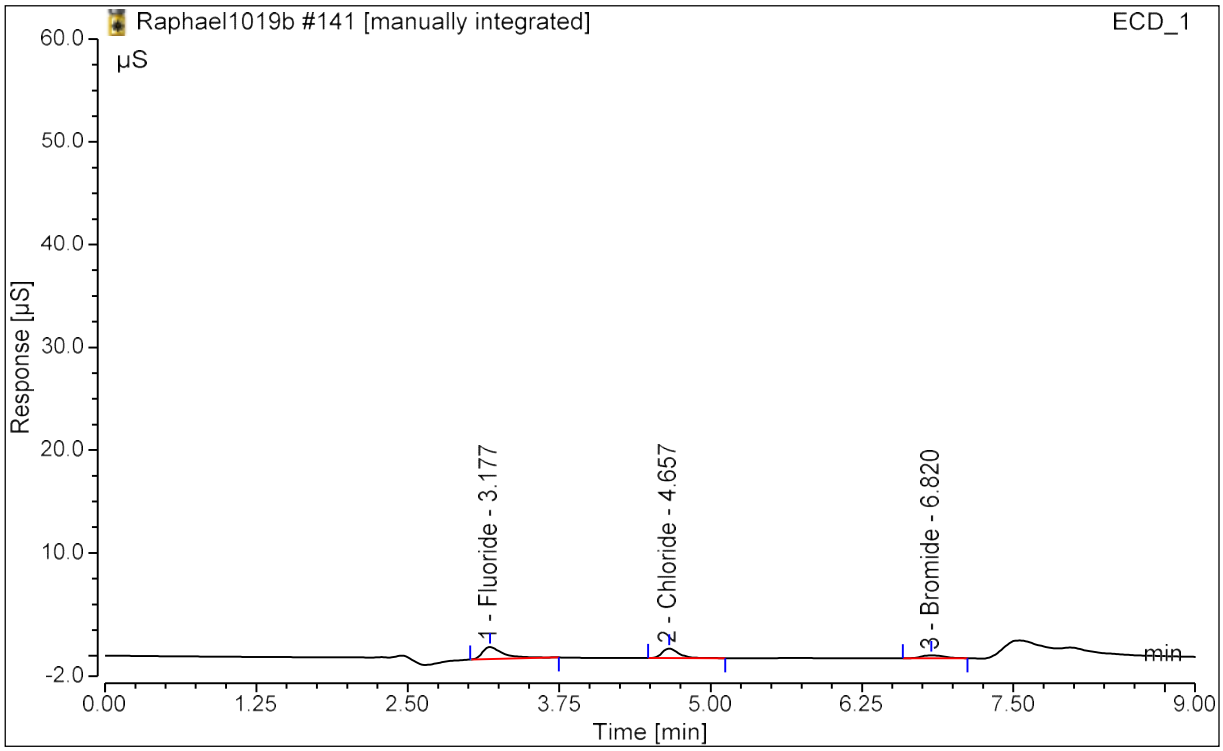


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.17	Fluoride	1.144	6.687	4.73924	FALSE	FALSE
2	4.66	Chloride	0.771	4.871	4.79972	FALSE	FALSE
3	6.82	Bromide	0.297	1.515	4.90617	FALSE	TRUE

Peak Analysis Report

Sample Name:	**HPLCStds1231 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**17-Dec-2021 / 00:55**	Run Time:	**14.50**

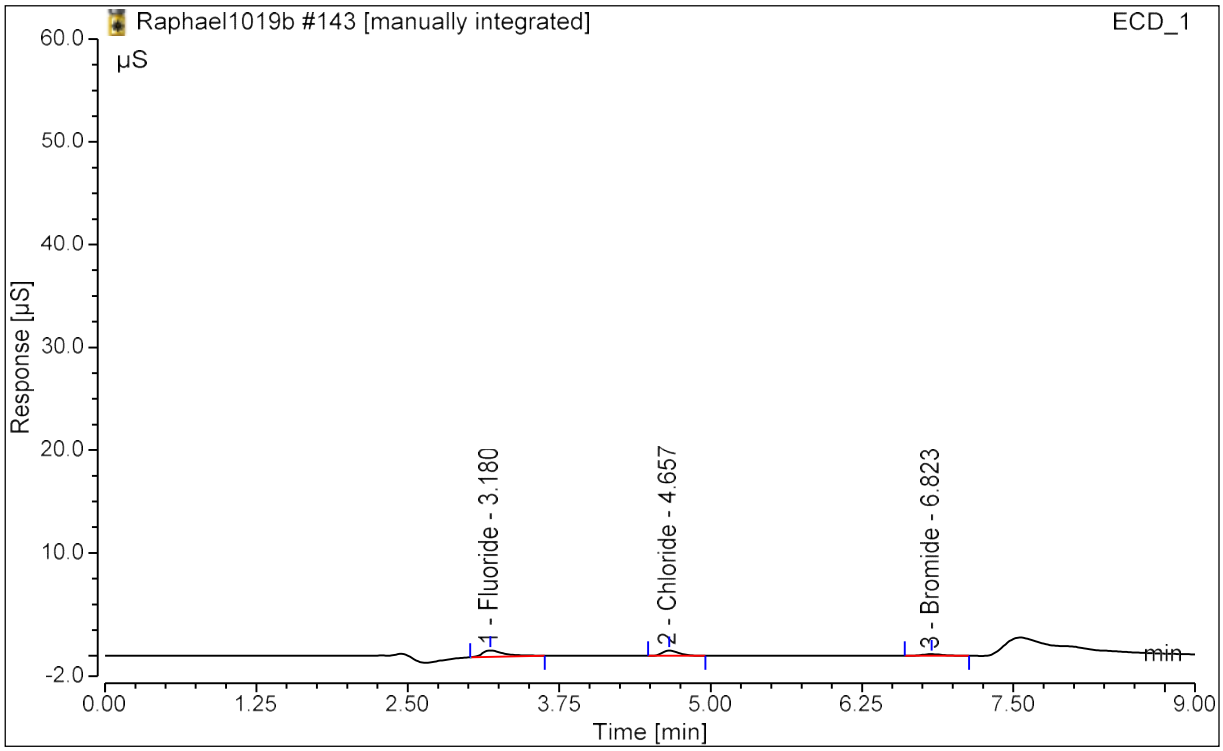


Analyst Comment: Report single inj, II PRM 12/20/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	0.235	1.172	0.96169	FALSE	FALSE
2	4.66	Chloride	0.146	0.934	0.96304	FALSE	FALSE
3	6.82	Bromide	0.058	0.300	0.97994	FALSE	TRUE

Peak Analysis Report

Sample Name:	**Raphael1019 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**17-Dec-2021 / 01:27**	Run Time:	**14.50**

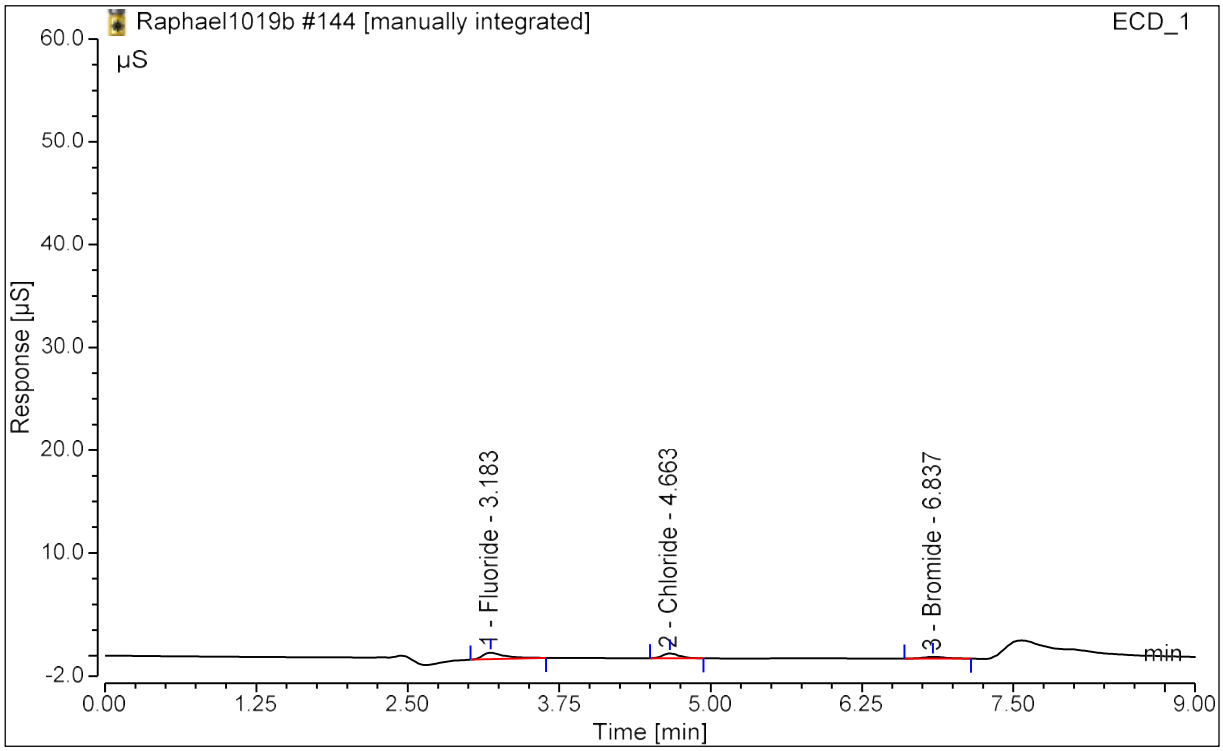


Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	0.131	0.612	0.52394	FALSE	TRUE
2	4.66	Chloride	0.074	0.476	0.51621	FALSE	TRUE
3	6.82	Bromide	0.029	0.150	0.49533	FALSE	TRUE

Peak Analysis Report

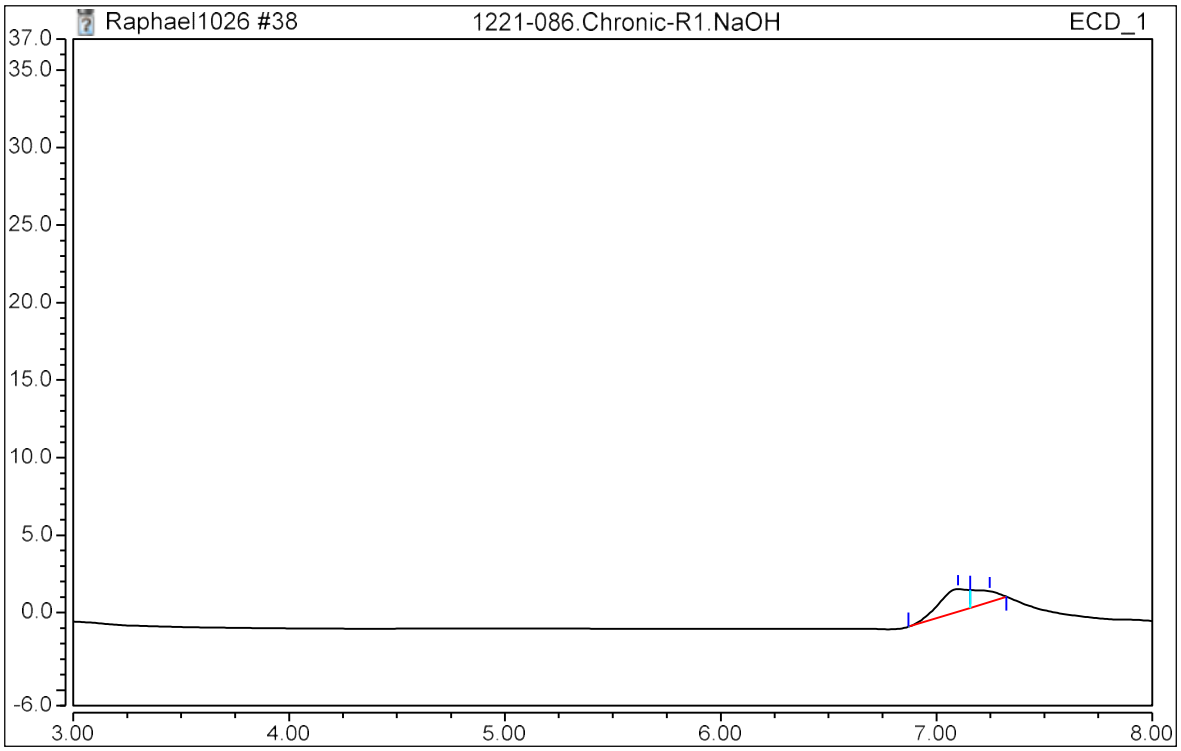
Sample Name:	**Raphael1019 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP**	Operator:	**PMann**
Inj. Date / Time:	**17-Dec-2021 / 01:43**	Run Time:	**14.50**



Analyst Comment: II PRM 12/17/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	3.18	Fluoride	0.130	0.613	0.52012	FALSE	TRUE
2	4.66	Chloride	0.074	0.477	0.51405	FALSE	TRUE
3	6.84	Bromide	0.030	0.154	0.51188	FALSE	TRUE

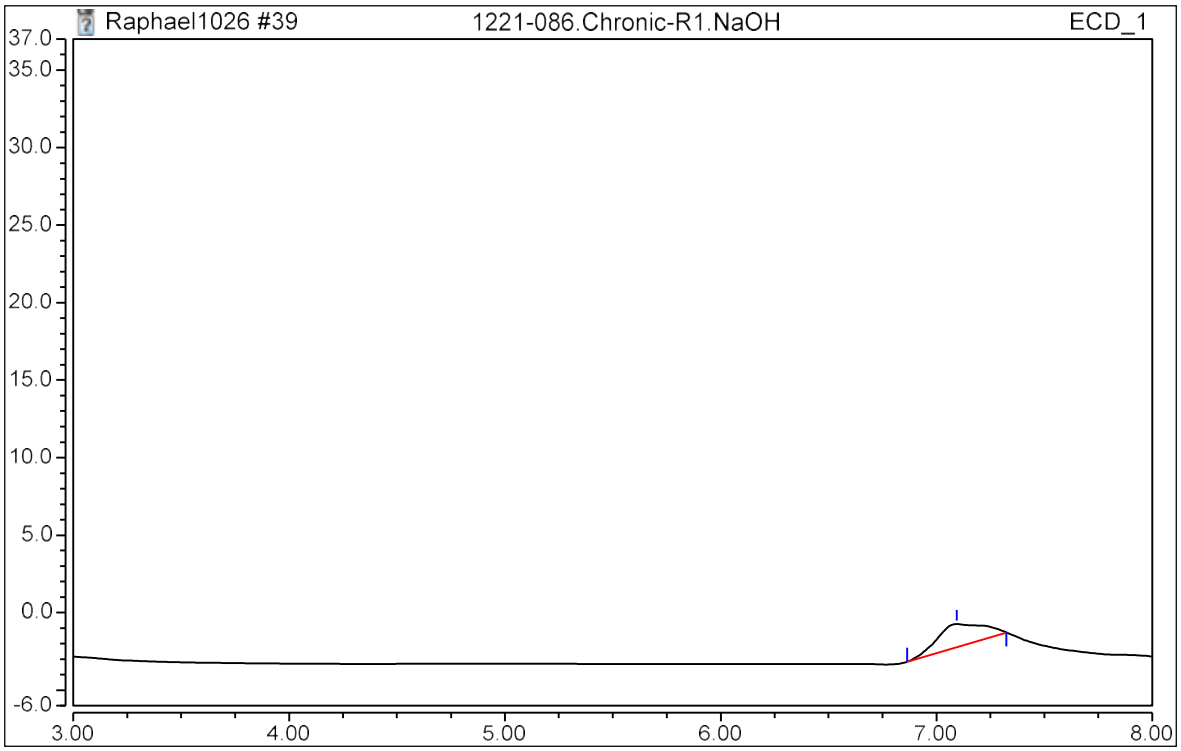
Sample Name:	**1221-086.Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 09:24**	Run Time:	**28.00**



Analyst Comment: Report Br (Cl lumpy)

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

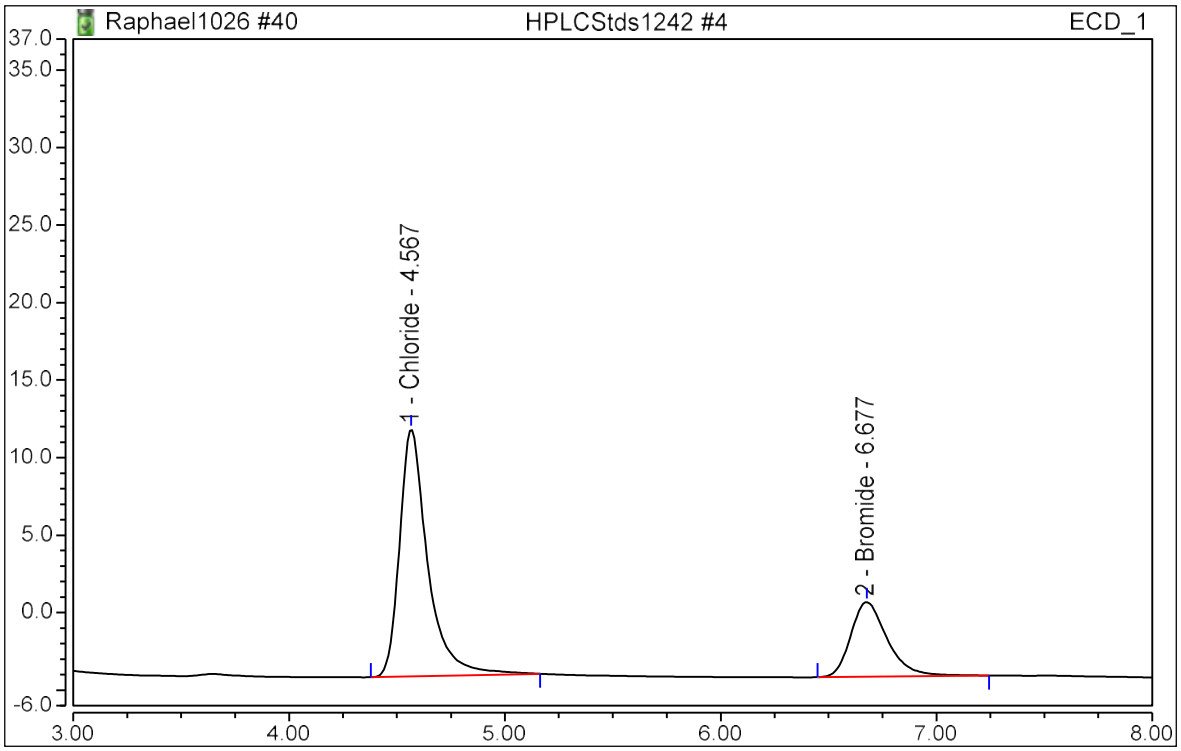
Sample Name:	**1221-086.Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 09:54**	Run Time:	**28.00**



Analyst Comment: Report Br (Cl lumpy)

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

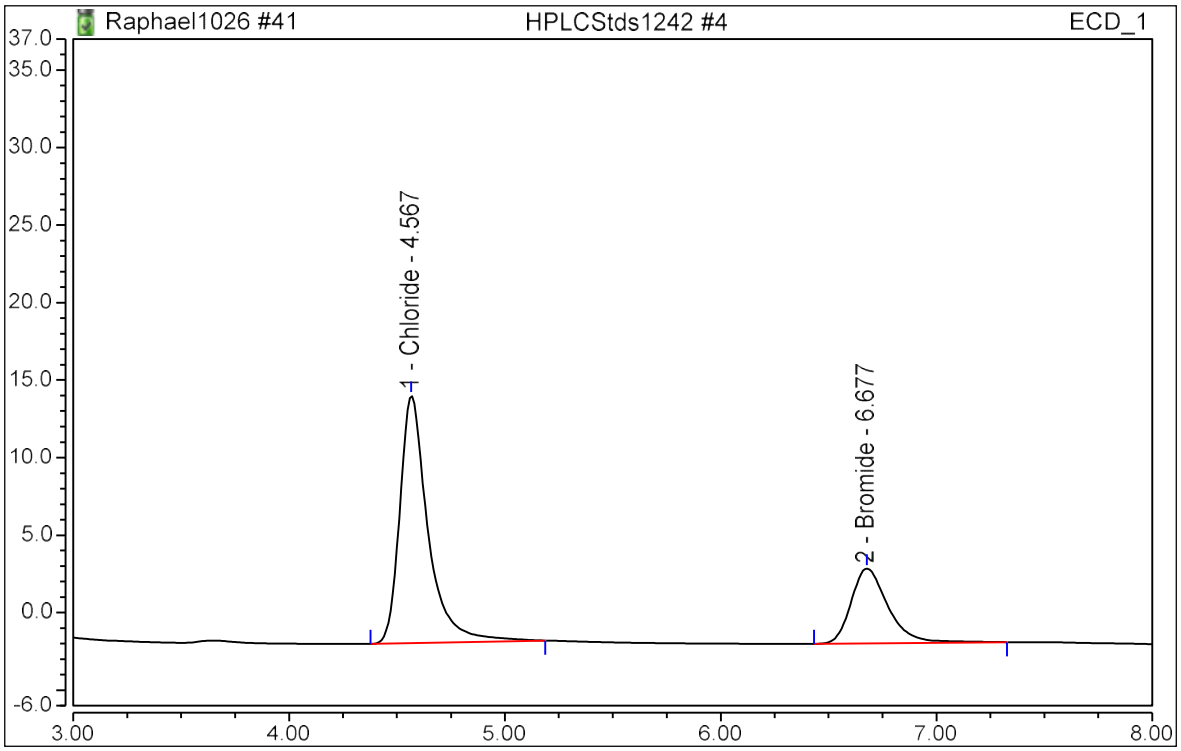
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 10:23**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	2.418	15.956	15.14138	FALSE	FALSE
2	6.68	Bromide	0.947	4.819	14.72499	FALSE	FALSE

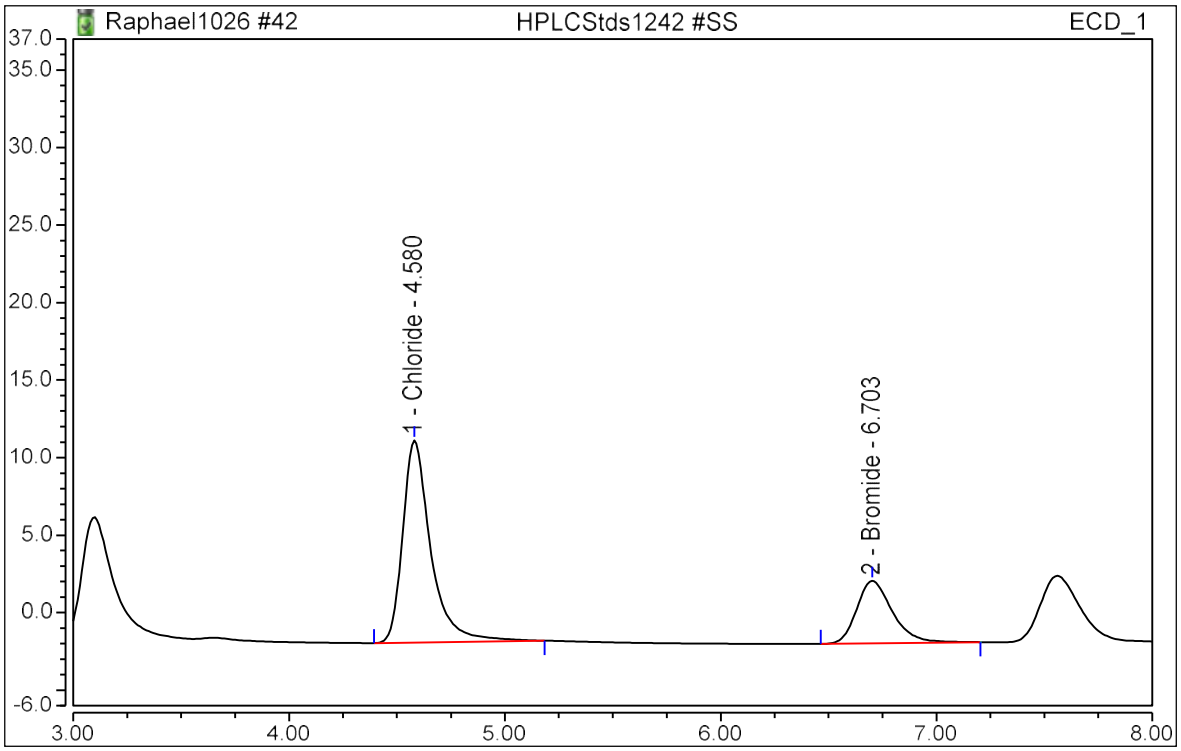
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 10:53**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	2.423	15.960	15.16720	FALSE	FALSE
2	6.68	Bromide	0.959	4.833	14.88528	FALSE	FALSE

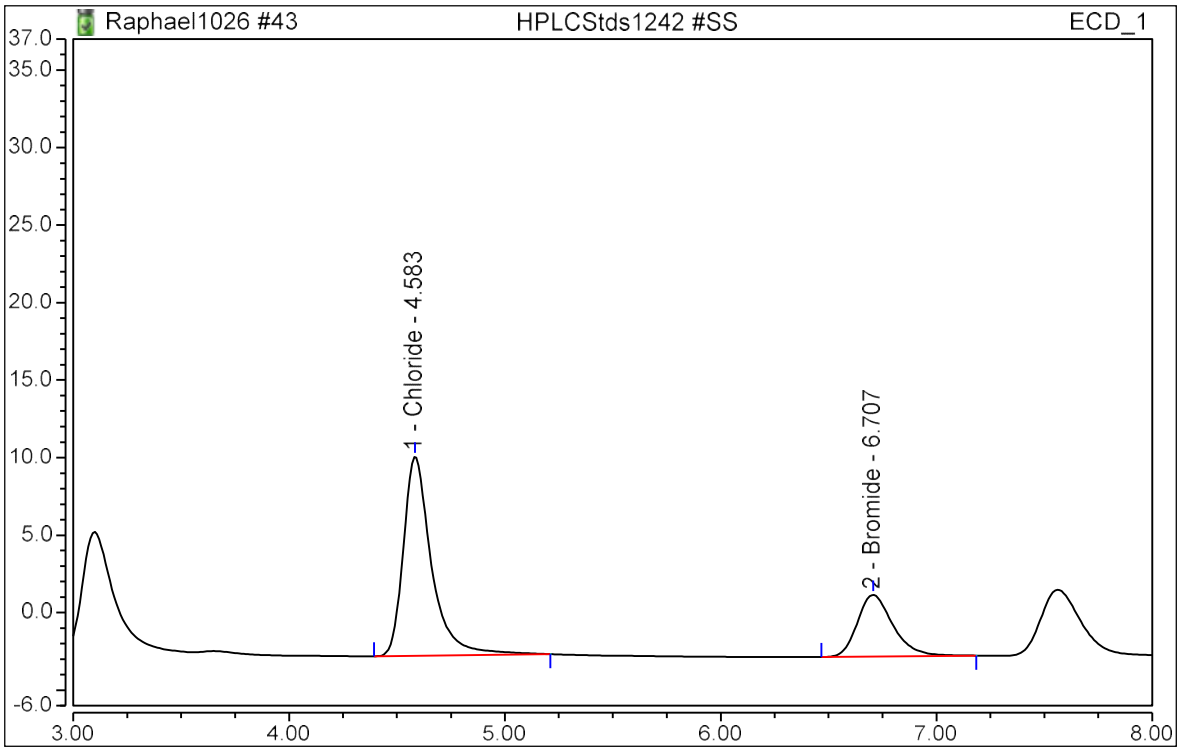
Sample Name:	**HPLCStds1242 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 11:23**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	1.968	13.042	12.53496	FALSE	FALSE
2	6.70	Bromide	0.771	4.023	12.22415	FALSE	FALSE

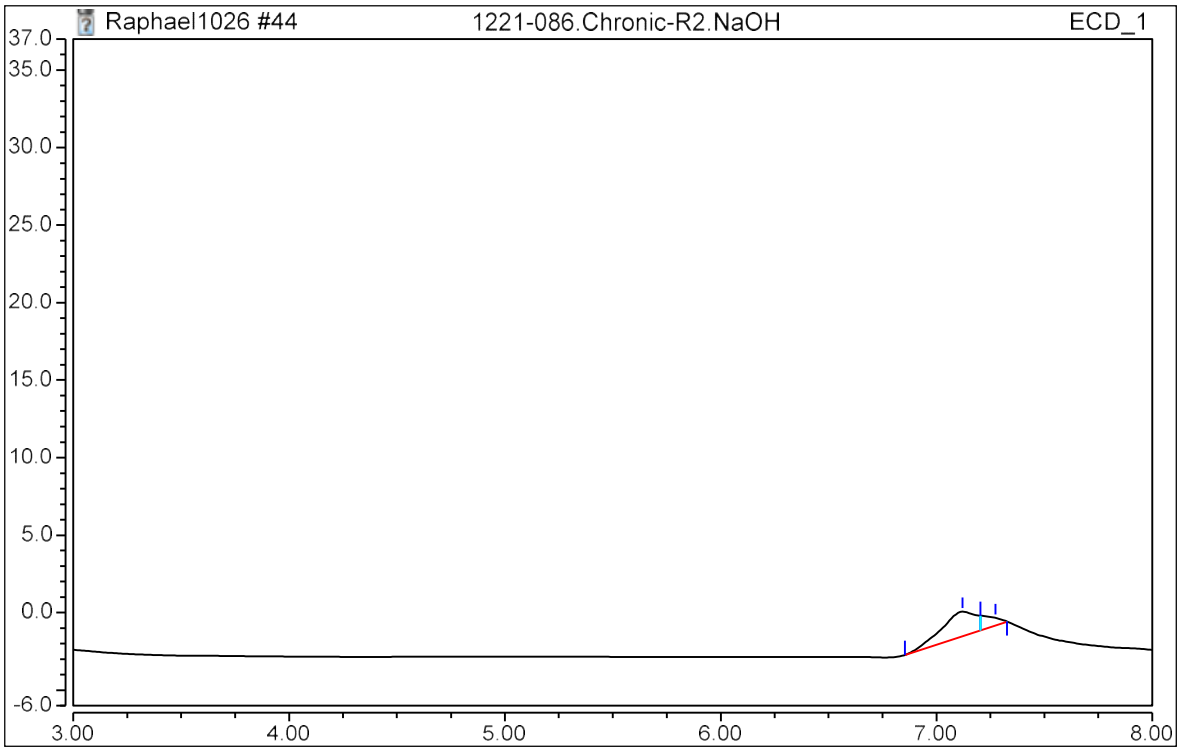
Sample Name:	**HPLCStds1242 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 11:52**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	1.948	12.875	12.42156	FALSE	FALSE
2	6.71	Bromide	0.761	3.984	12.07154	FALSE	FALSE

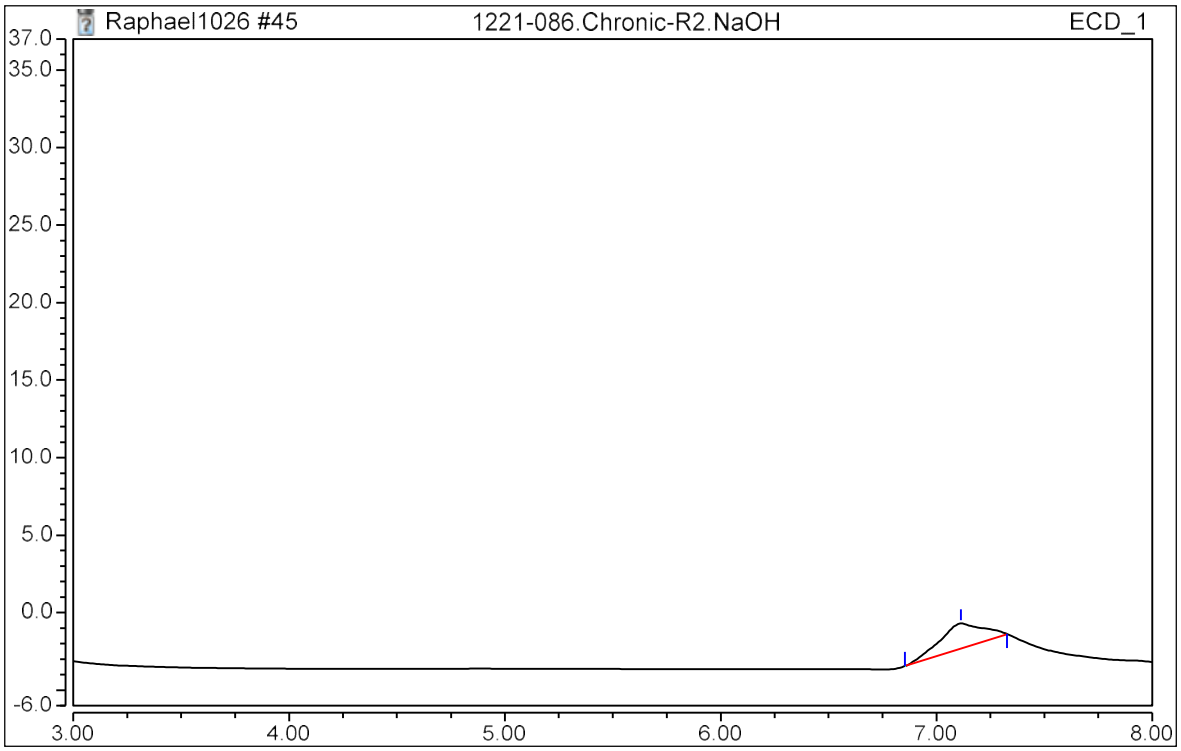
Sample Name:	**1221-086.Chronic-R2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 12:22**	Run Time:	**28.00**



Analyst Comment: Report Br (Cl lumpy)

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

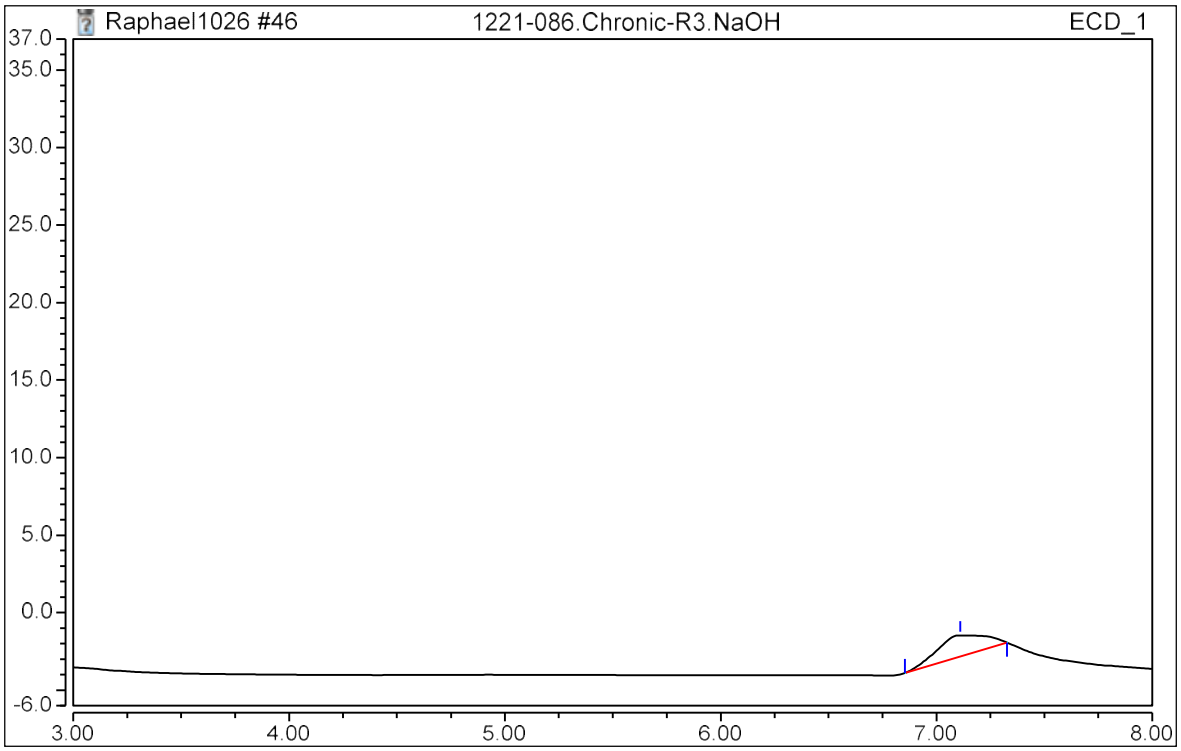
Sample Name:	**1221-086.Chronic-R2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 12:52**	Run Time:	**28.00**



Analyst Comment: Report Br (Cl lumpy)

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

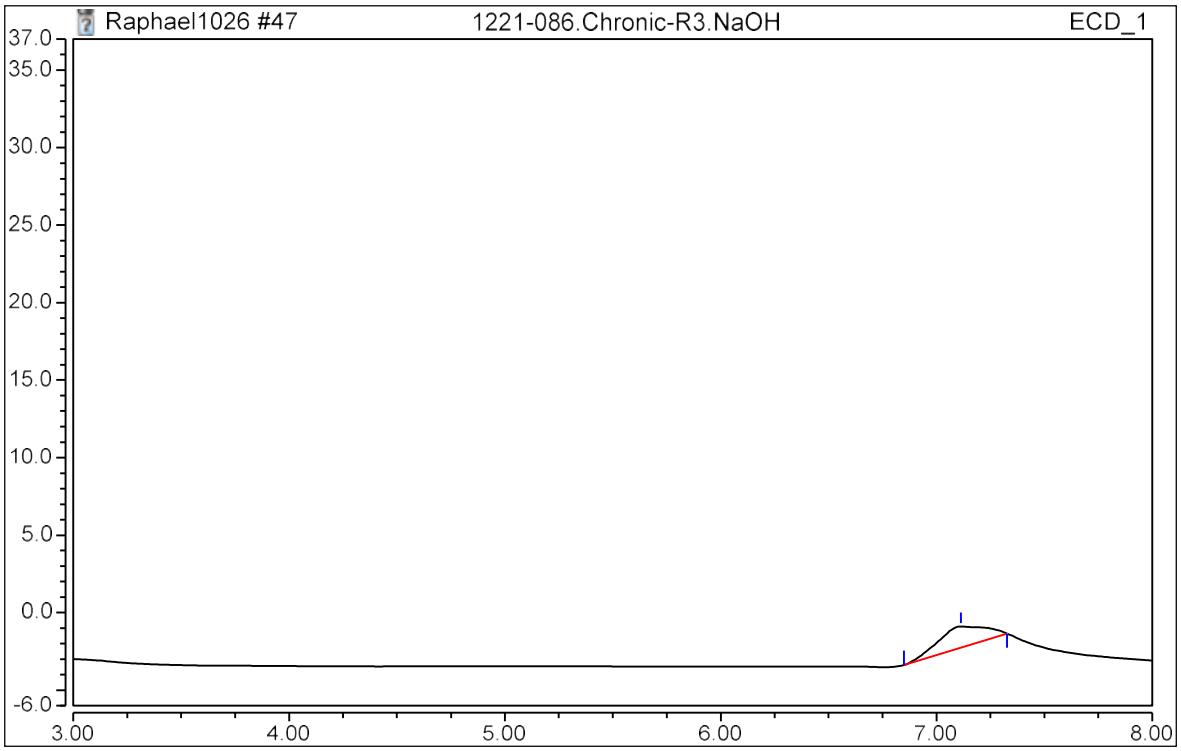
Sample Name:	**1221-086.Chronic-R3.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 13:21**	Run Time:	**28.00**



Analyst Comment: Report Br (Cl lumpy)

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

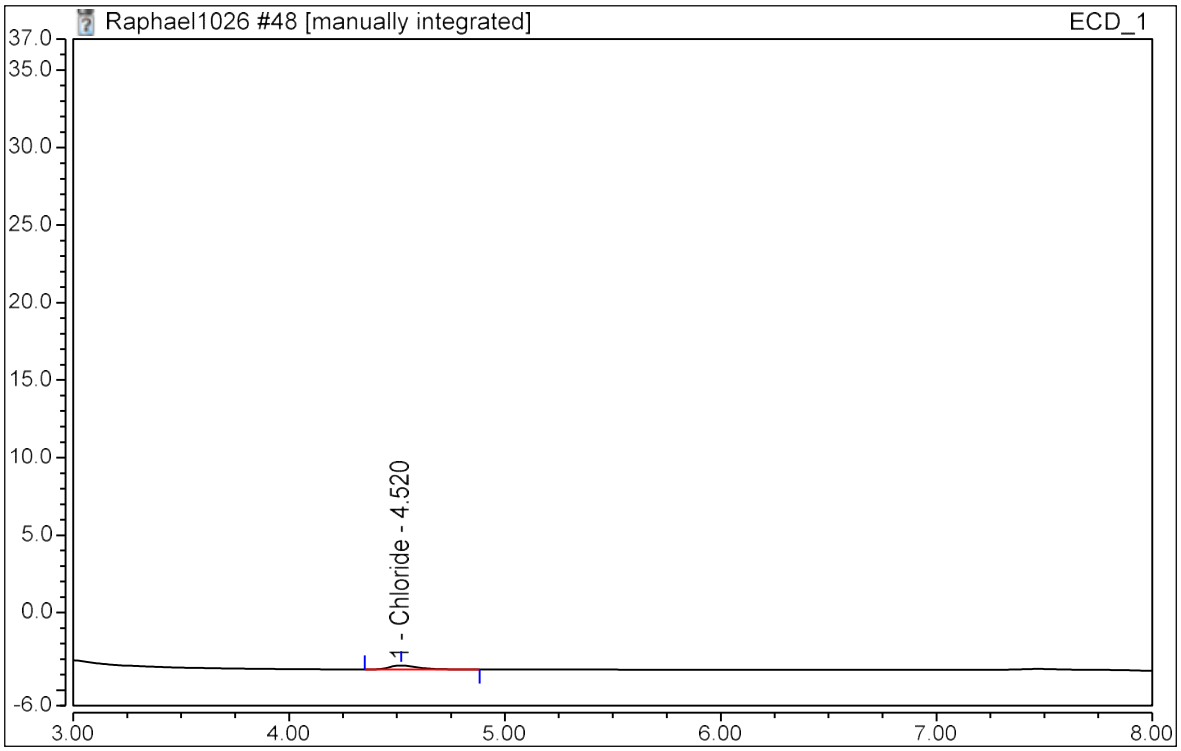
Sample Name:	**1221-086.Chronic-R3.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 13:51**	Run Time:	**28.00**



Analyst Comment: Report Br (Cl lumpy)

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

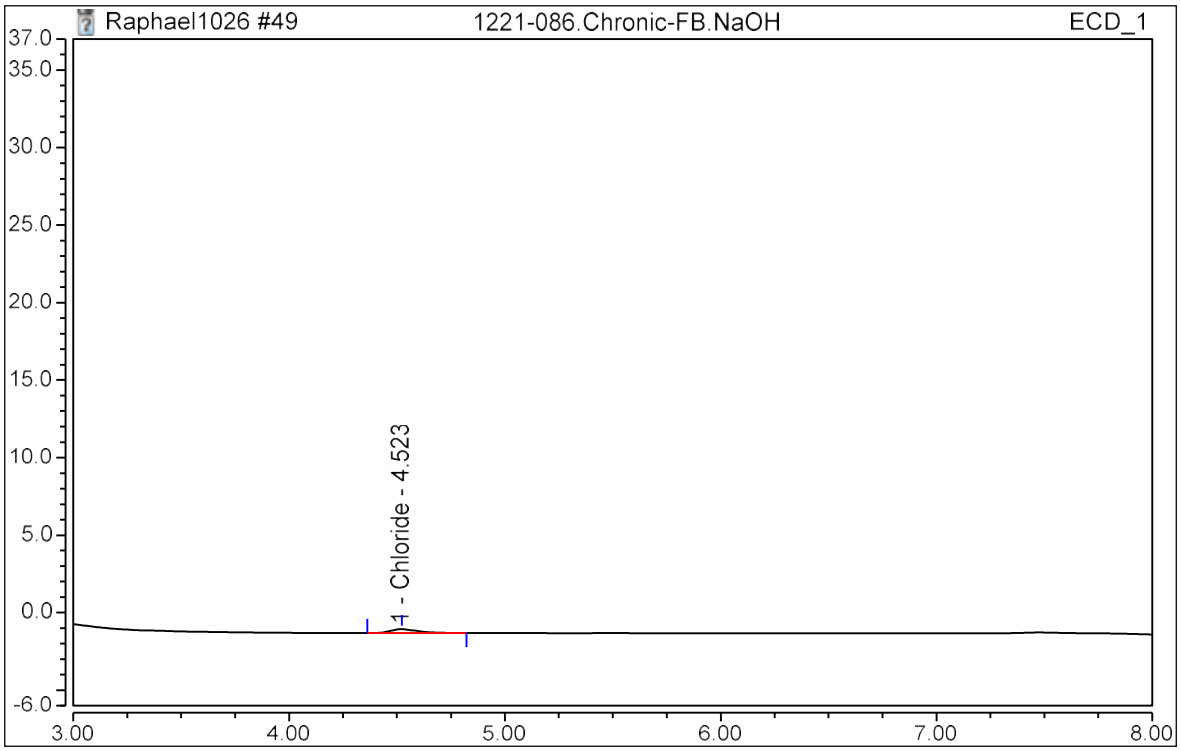
Sample Name:	**1221-086.Chronic-FB.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 14:21**	Run Time:	**28.00**



Analyst Comment: Report Br (Cl lumpy)

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.52	Chloride	0.038	0.260	0.35398	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

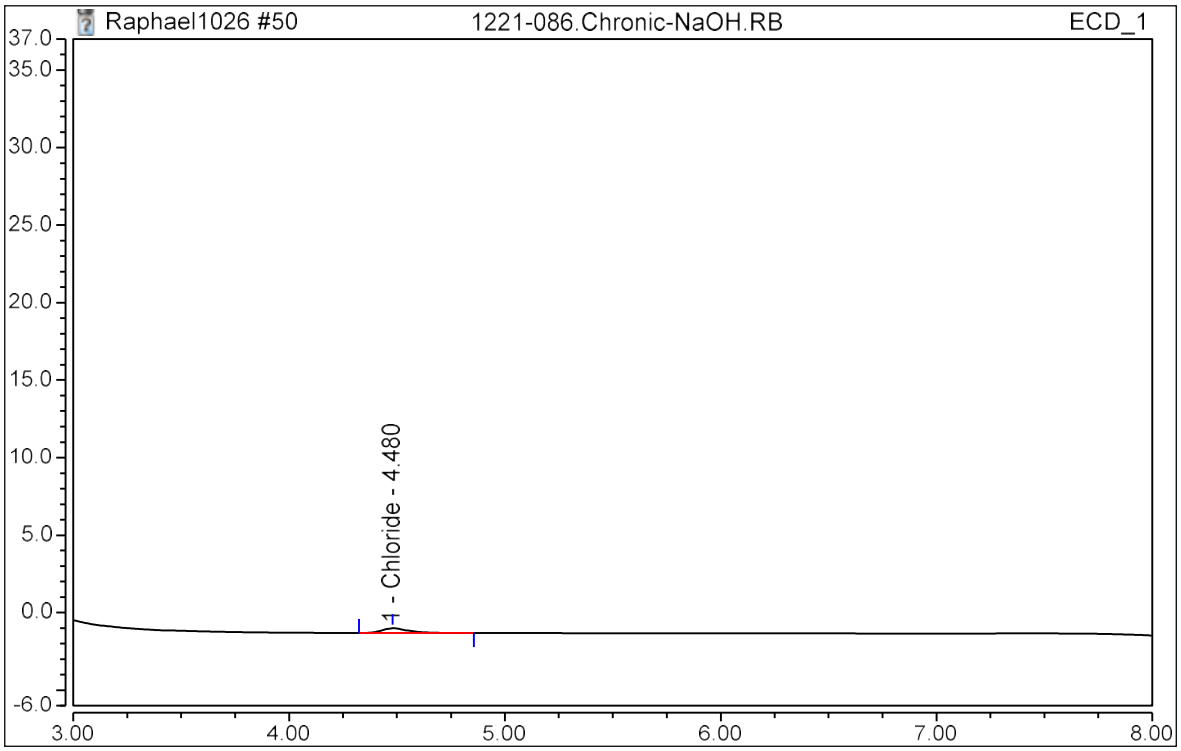
Sample Name:	**1221-086.Chronic-FB.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 14:50**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.52	Chloride	0.037	0.256	0.34491	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

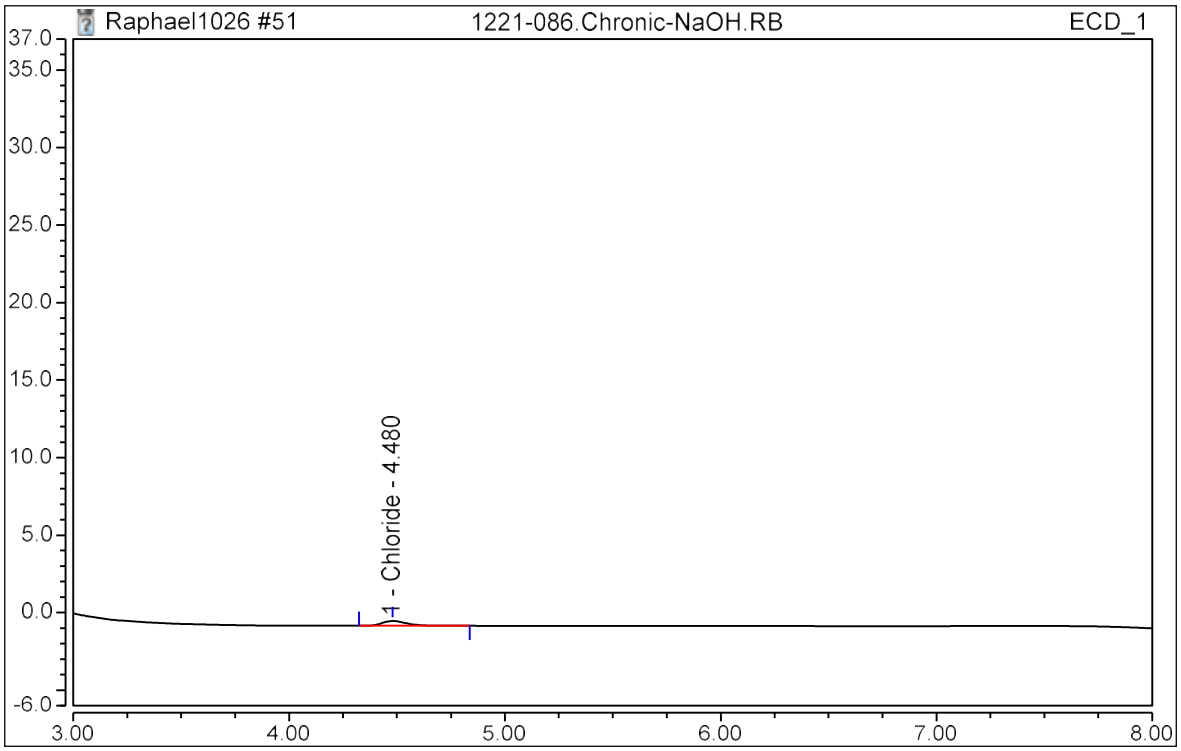
Sample Name:	**1221-086.Chronic-NaOH.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 15:20**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.48	Chloride	0.044	0.310	0.39265	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

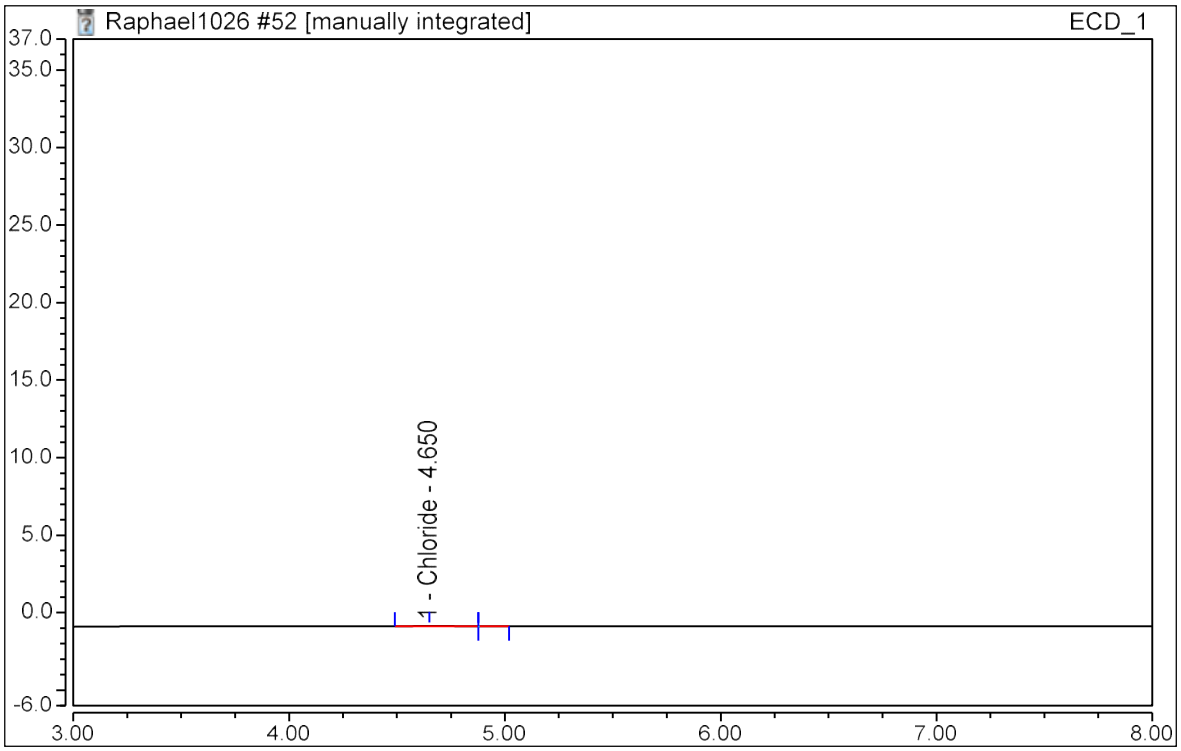
Sample Name:	**1221-086.Chronic-NaOH.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 15:50**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.48	Chloride	0.044	0.313	0.39425	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

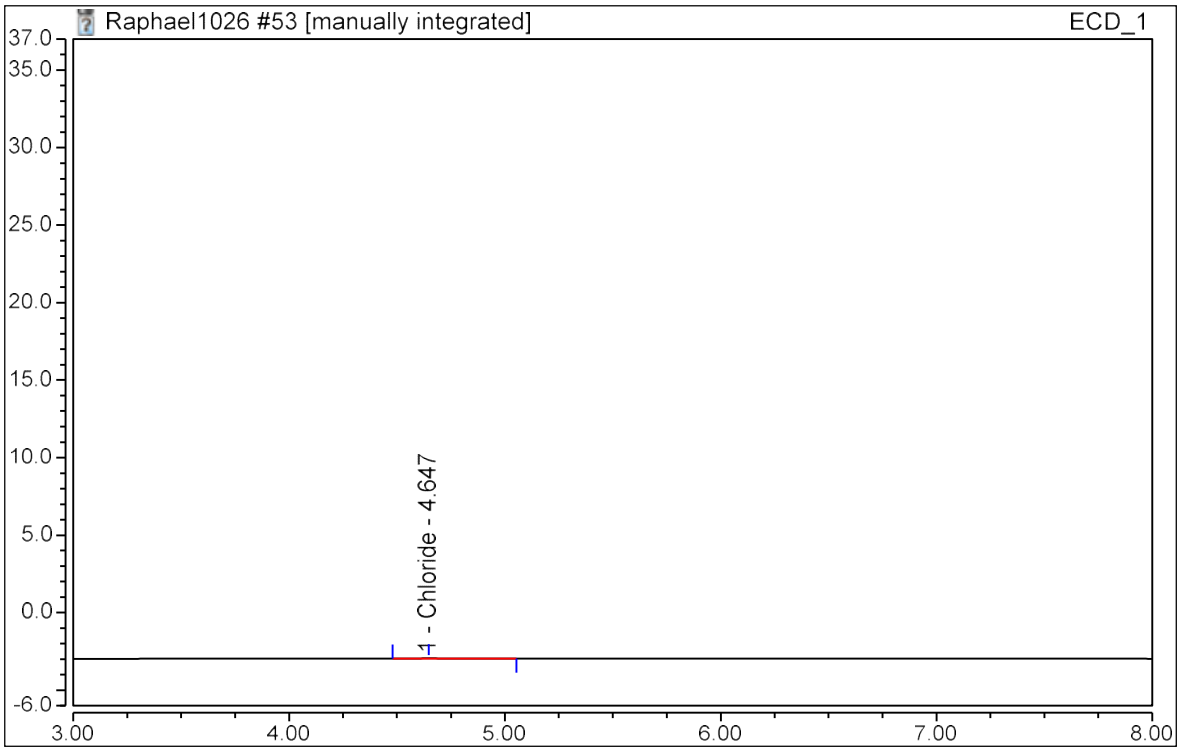
Sample Name:	**1221-086.Chronic-DI.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 16:19**	Run Time:	**28.00**



Analyst Comment: NI PRM 1/4/22

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.65	Chloride	0.004	0.024	0.12162	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

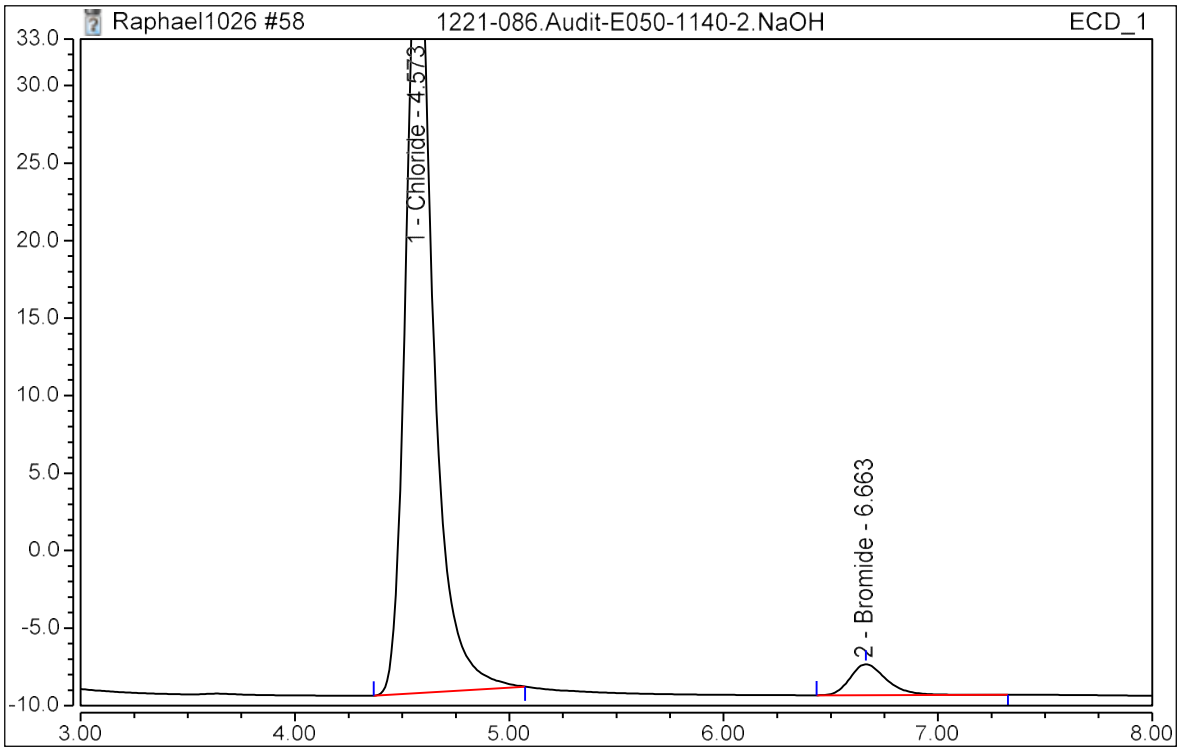
Sample Name:	**1221-086.Chronic-DI.RB**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 16:49**	Run Time:	**28.00**



Analyst Comment: NI PRM 1/4/22

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.65	Chloride	0.003	0.023	0.11935	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

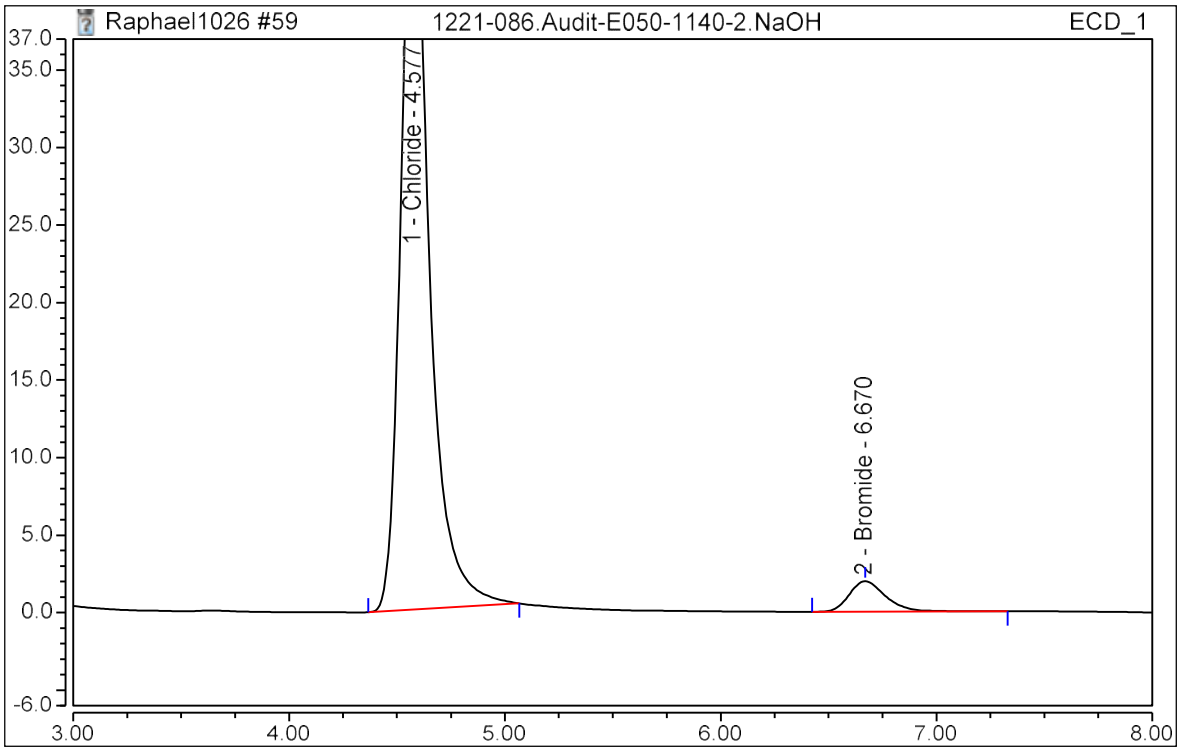
Sample Name:	**1221-086.Audit-E050-1140-2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 19:17**	Run Time:	**28.00**



Analyst Comment: Cl over, report Br

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	7.589	51.563	38.59480	FALSE	FALSE
2	6.66	Bromide	0.391	1.992	6.43664	FALSE	FALSE

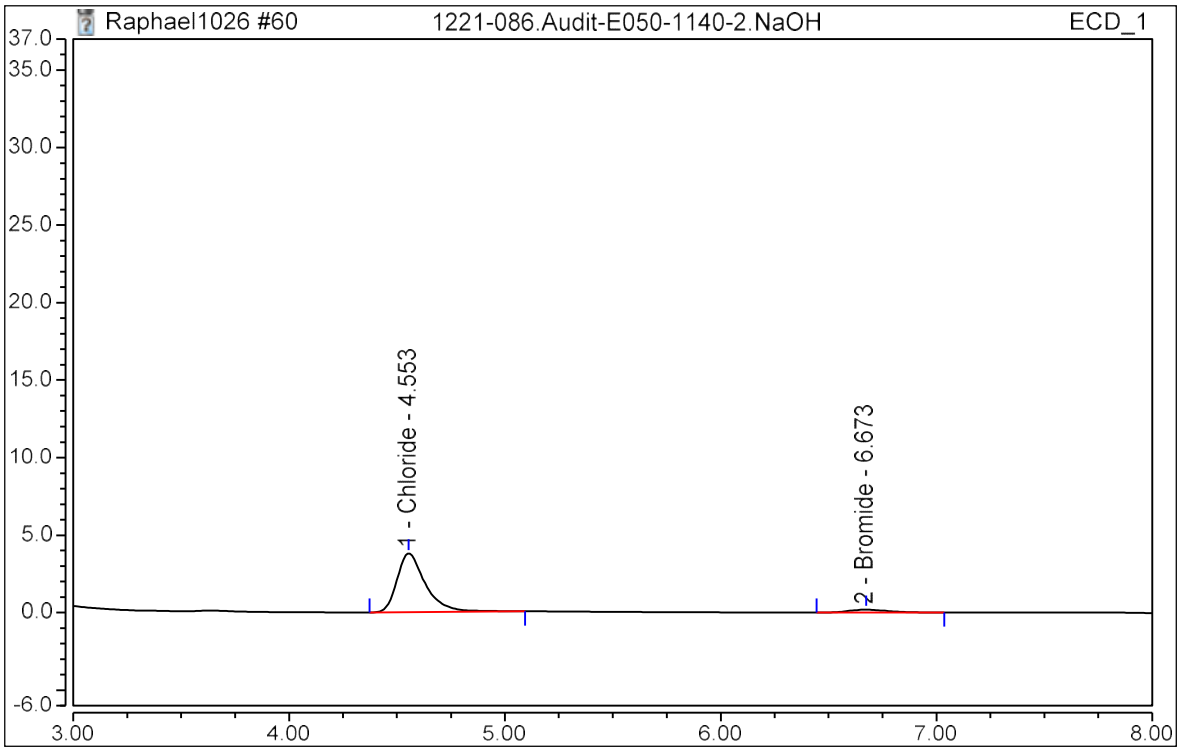
Sample Name:	**1221-086.Audit-E050-1140-2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 19:47**	Run Time:	**28.00**



Analyst Comment: Cl over, report Br

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	7.516	50.989	38.34507	FALSE	FALSE
2	6.67	Bromide	0.388	1.973	6.40050	FALSE	FALSE

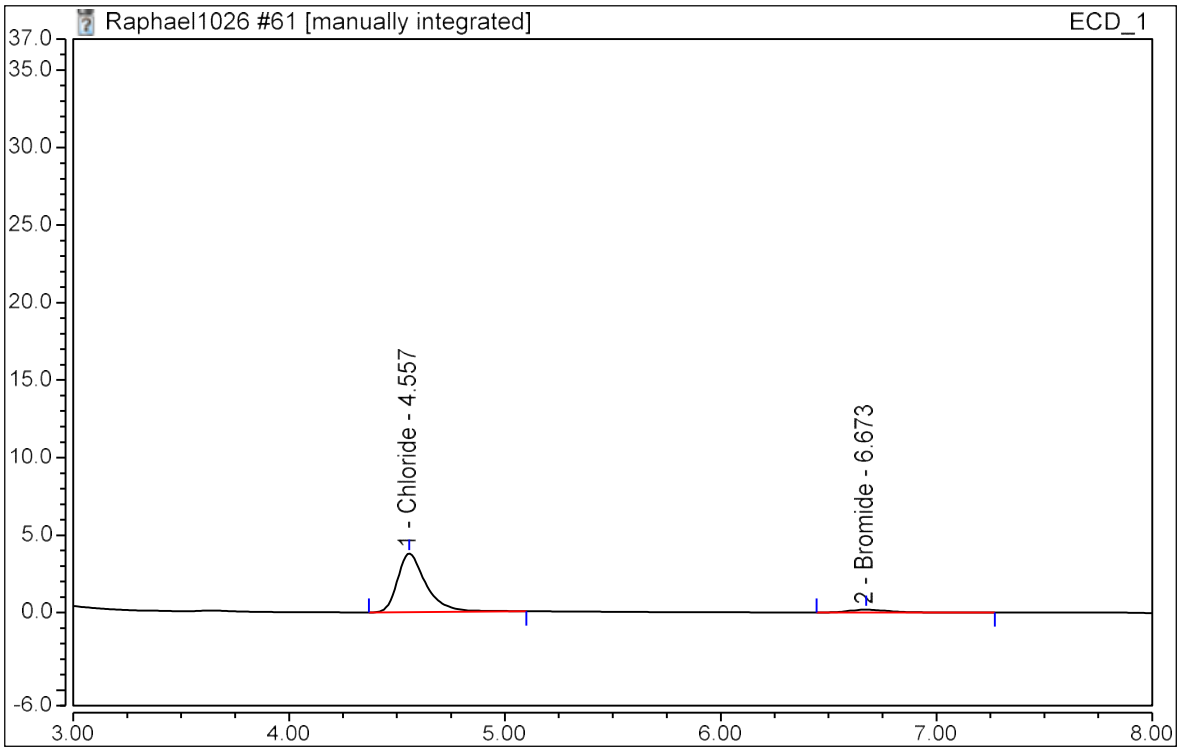
Sample Name:	**1221-086.Audit-E050-1140-2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**10.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 20:17**	Run Time:	**28.00**



Analyst Comment: Report Cl

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.579	3.796	3.93694	FALSE	FALSE
2	6.67	Bromide	0.037	0.194	0.61427	FALSE	FALSE

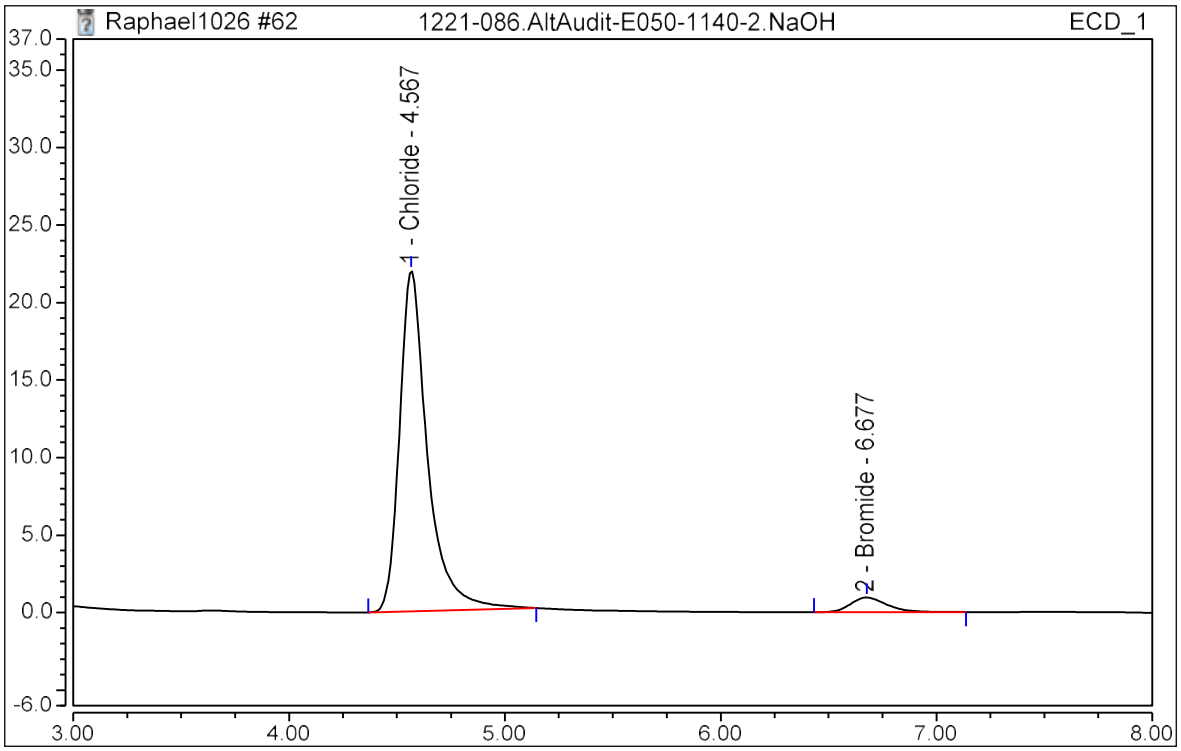
Sample Name:	**1221-086.Audit-E050-1140-2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**10.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 20:47**	Run Time:	**28.00**



Analyst Comment: Report Cl, II PRM 1/4/22

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	0.579	3.782	3.93381	FALSE	TRUE
2	6.67	Bromide	0.038	0.193	0.62466	FALSE	FALSE

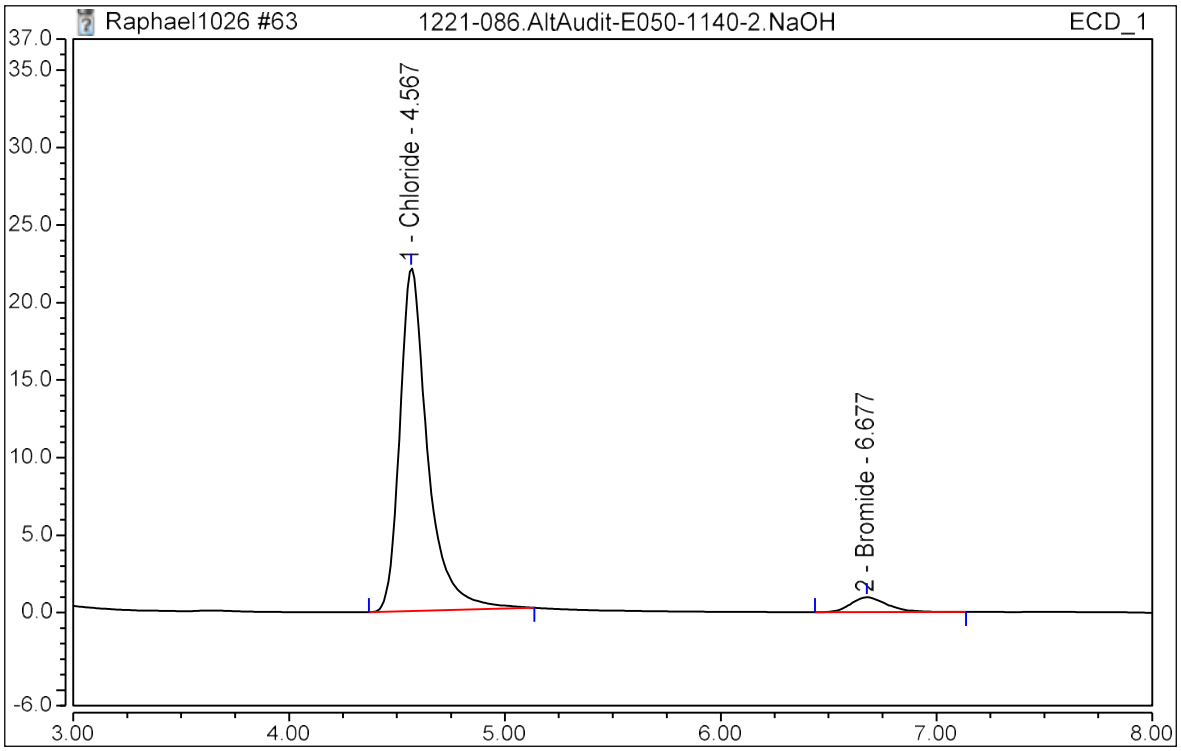
Sample Name:	**1221-086.AltAudit-E050-1140-2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 21:16**	Run Time:	**28.00**



Analyst Comment: Report both

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	3.306	21.982	20.01018	FALSE	FALSE
2	6.68	Bromide	0.185	0.949	3.10046	FALSE	FALSE

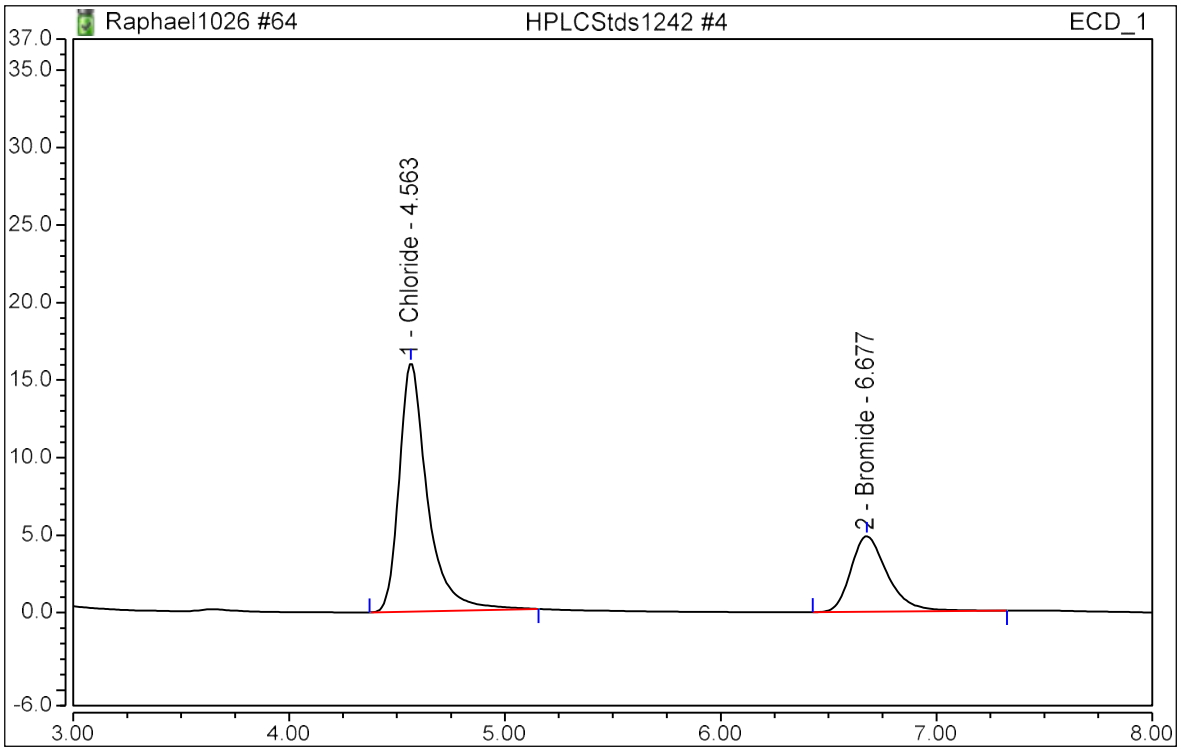
Sample Name:	**1221-086.AltAudit-E050-1140-2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 21:46**	Run Time:	**28.00**



Analyst Comment: Report both

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	3.324	22.143	20.10732	FALSE	FALSE
2	6.68	Bromide	0.186	0.957	3.12453	FALSE	FALSE

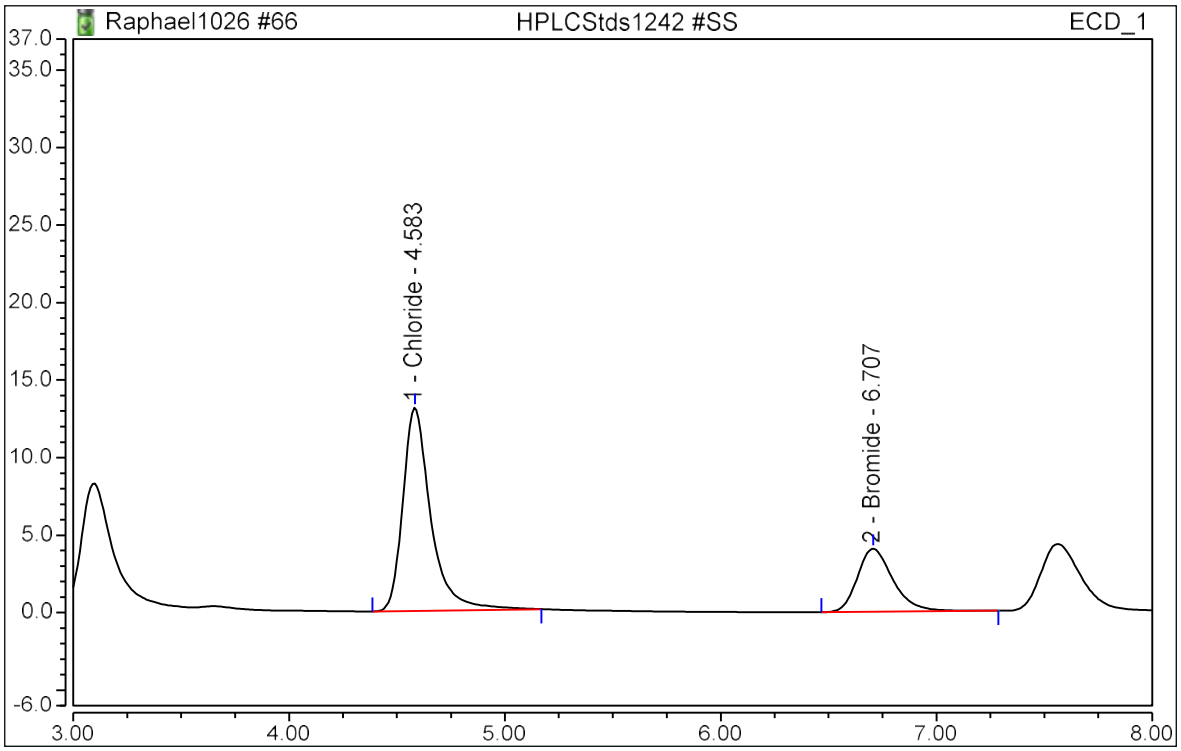
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 22:16**	Run Time:	**28.00**



Analyst Comment: Report sing. inj.

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	2.430	16.039	15.21007	FALSE	FALSE
2	6.68	Bromide	0.966	4.881	14.99123	FALSE	FALSE

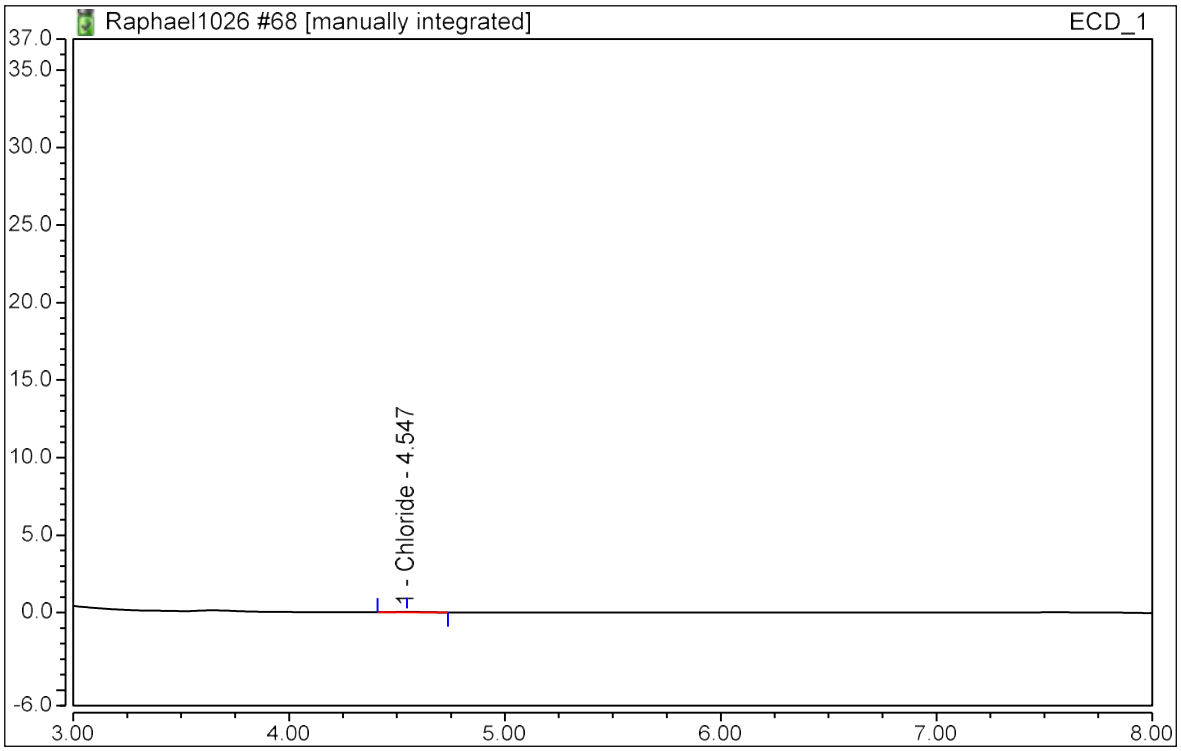
Sample Name:	**HPLCStds1242 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 23:15**	Run Time:	**28.00**



Analyst Comment: Report sing. inj.

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	1.968	13.120	12.53831	FALSE	FALSE
2	6.71	Bromide	0.785	4.086	12.42735	FALSE	FALSE

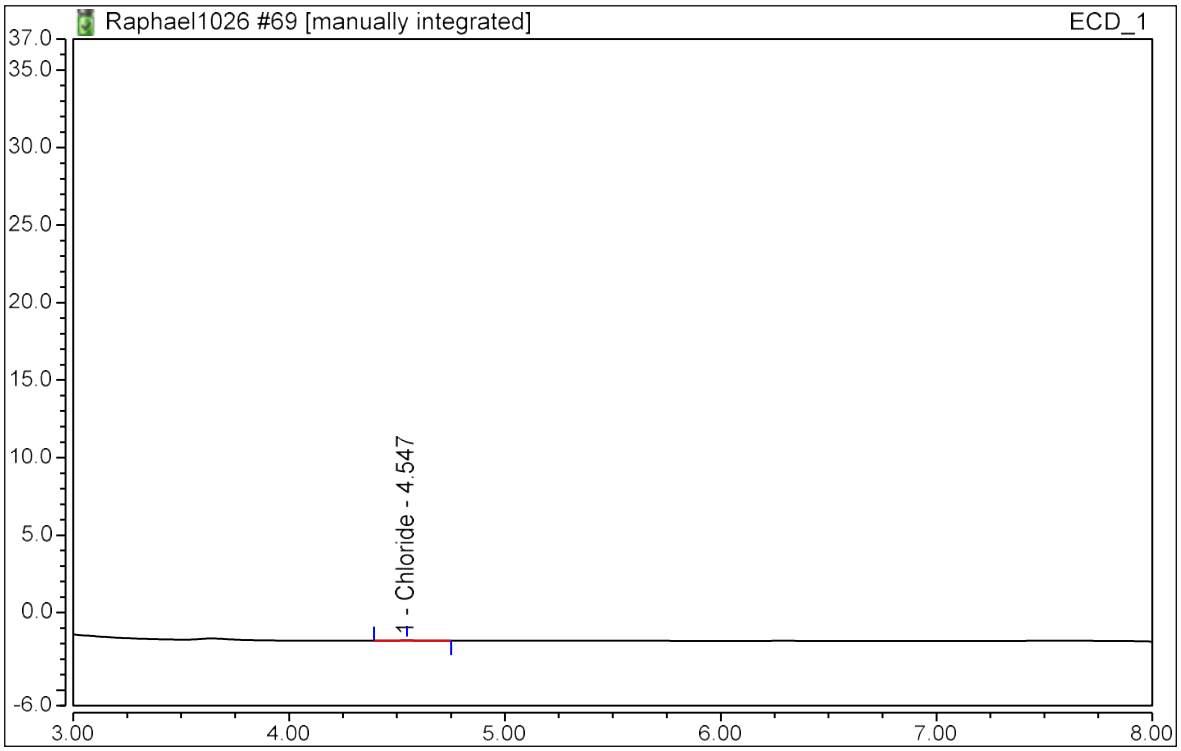
Sample Name:	**HPLCStds1242 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 00:14**	Run Time:	**28.00**



Analyst Comment: WP PRM 1/4/22

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.004	0.037	0.12643	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

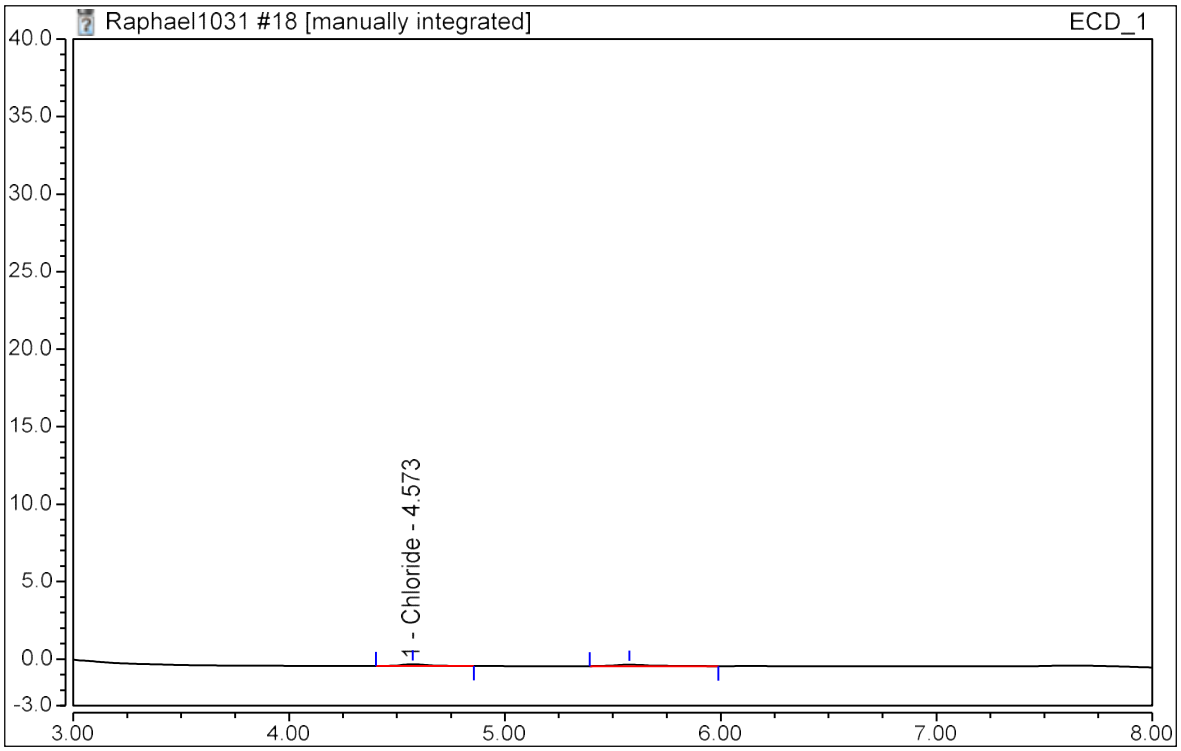
Sample Name:	**HPLCStds1242 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 00:44**	Run Time:	**28.00**



Analyst Comment: NI PRM 1/4/22

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.005	0.037	0.12715	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

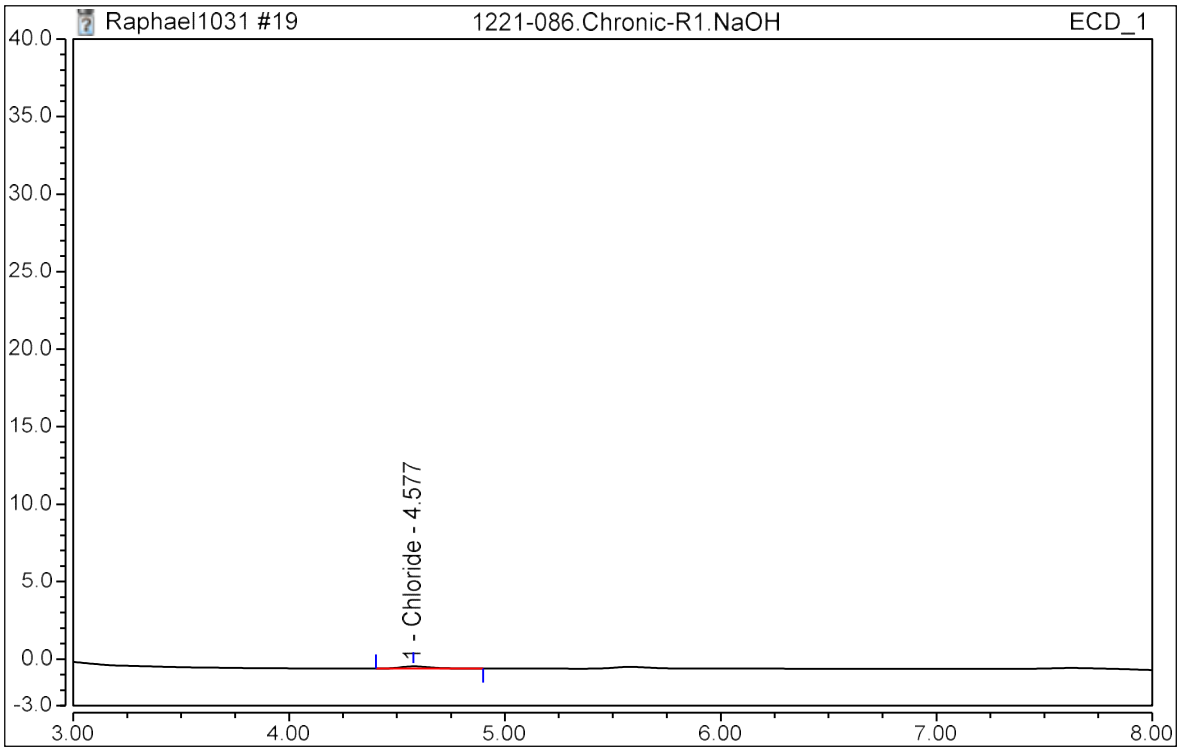
Sample Name:	**1221-086.Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**4.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 23:52**	Run Time:	**29.00**



Analyst Comment: II PRM 1/5/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	0.021	0.131	0.20968	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

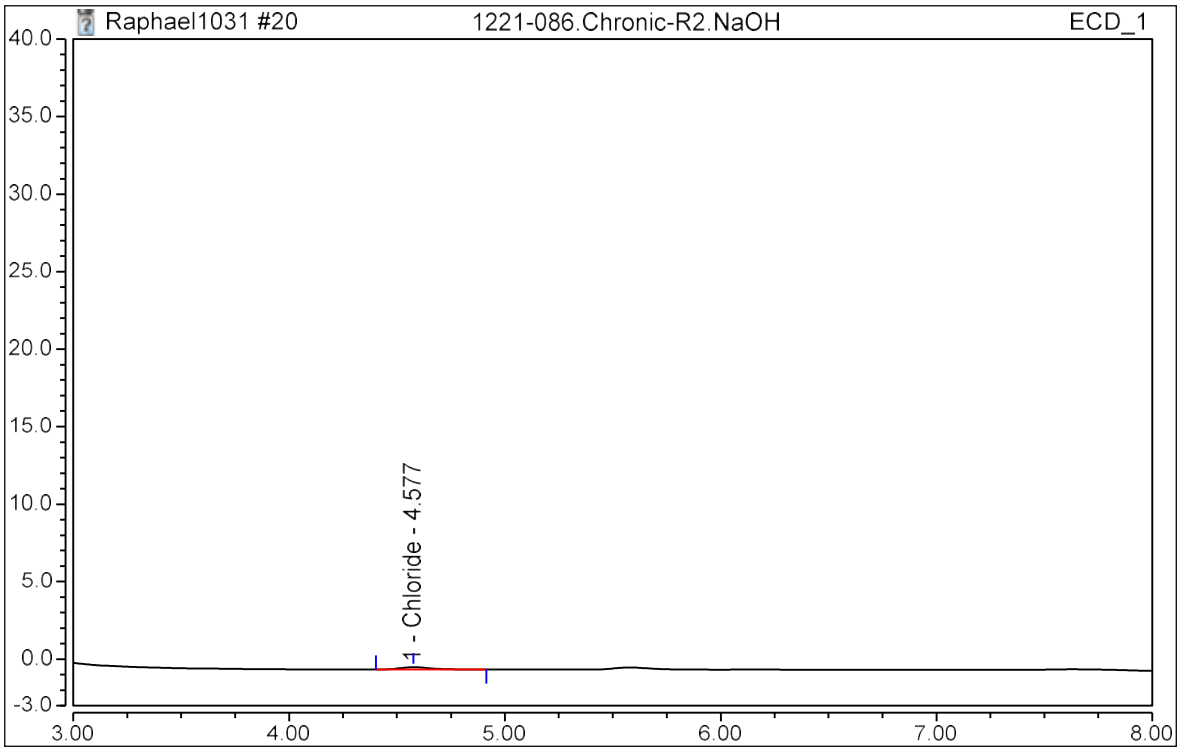
Sample Name:	**1221-086.Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**4.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 00:23**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	0.021	0.132	0.21318	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

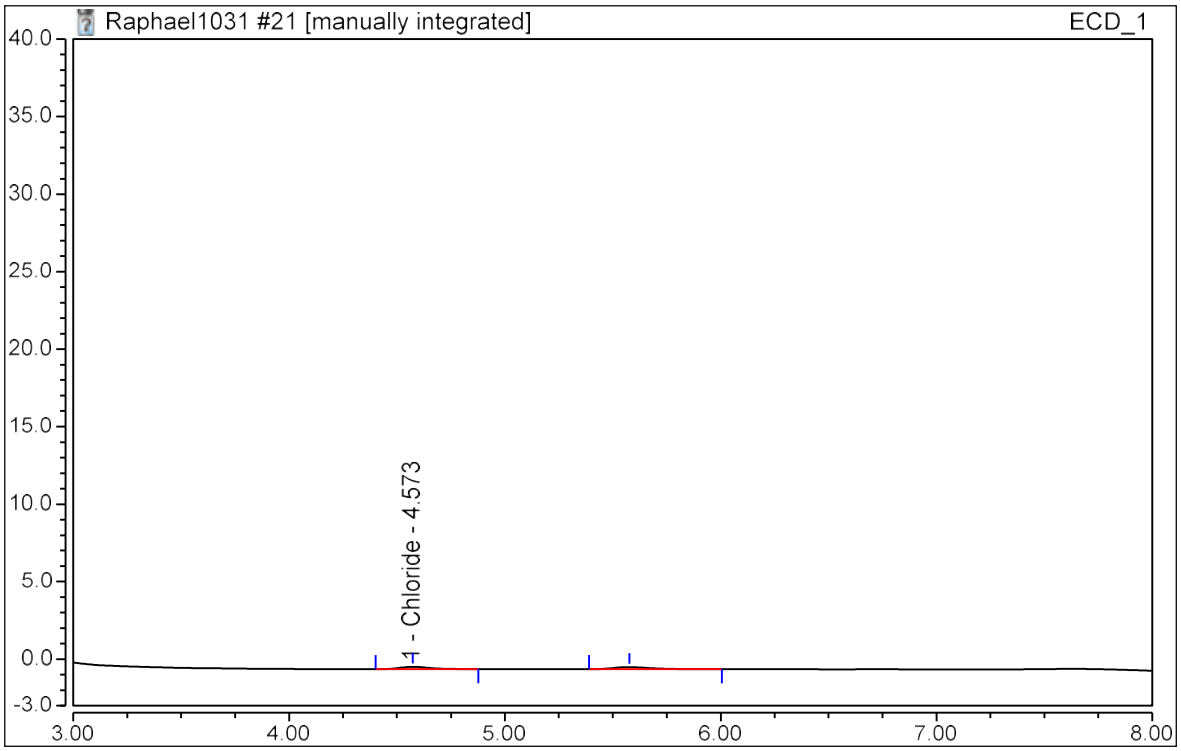
Sample Name:	**1221-086.Chronic-R2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**4.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 00:54**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	0.023	0.140	0.22598	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

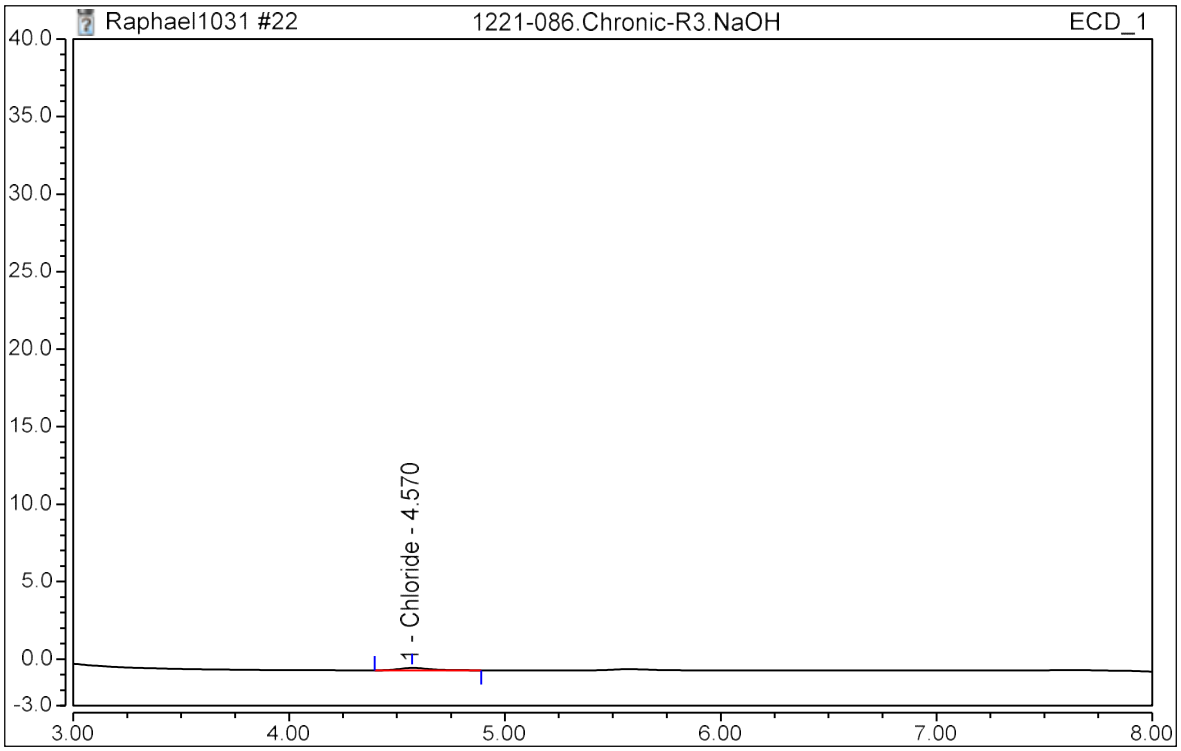
Sample Name:	**1221-086.Chronic-R2.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**4.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 01:24**	Run Time:	**29.00**



Analyst Comment: II PRM 1/5/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	0.022	0.138	0.21944	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

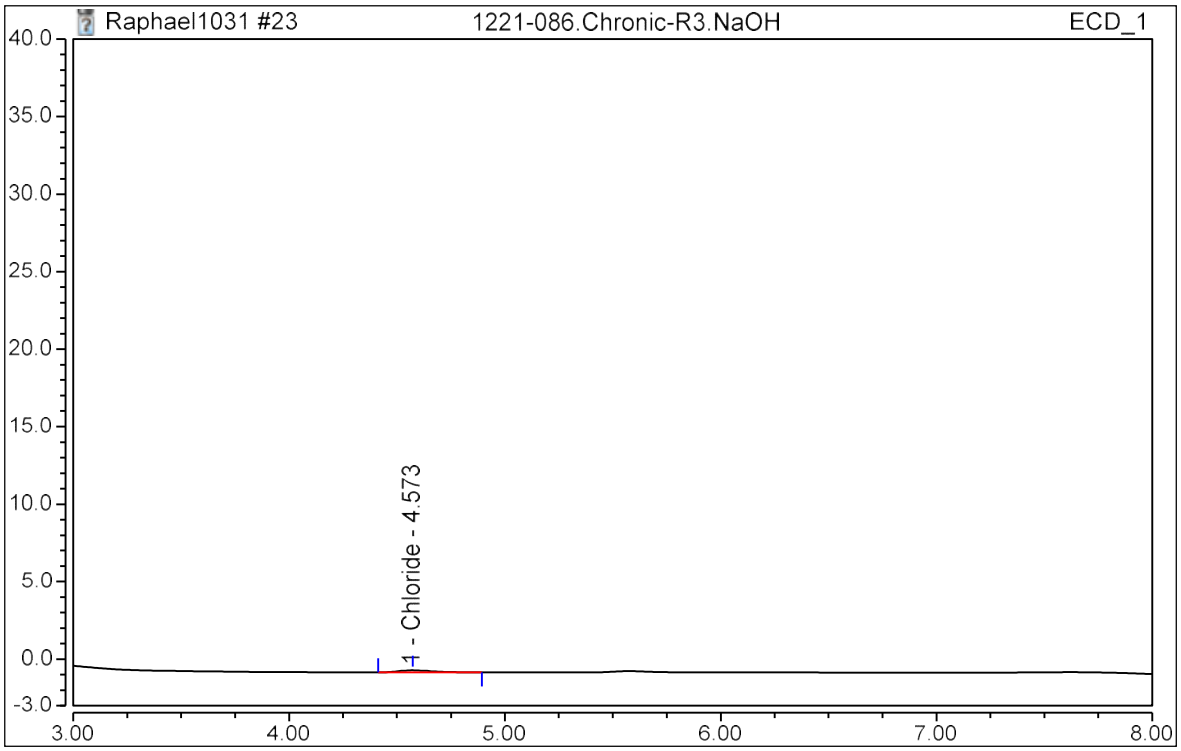
Sample Name:	**1221-086.Chronic-R3.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**4.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 01:55**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	0.023	0.146	0.22894	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

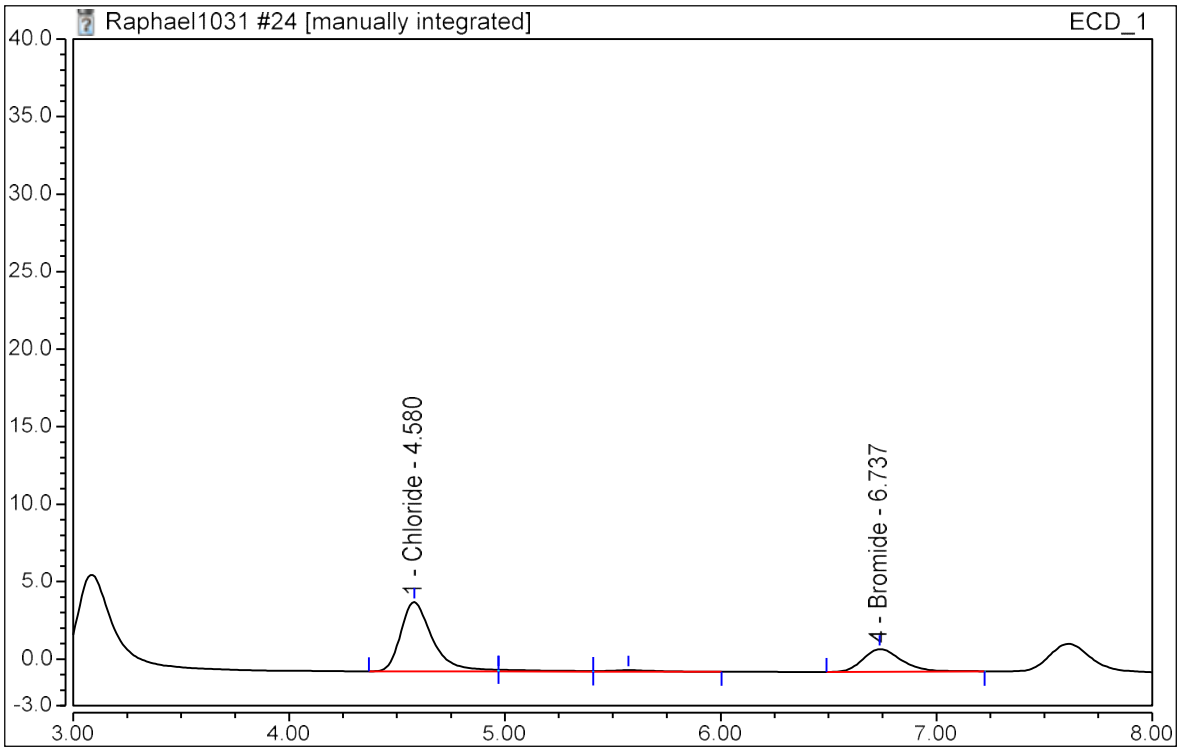
Sample Name:	**1221-086.Chronic-R3.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**4.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 02:26**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	0.024	0.146	0.23112	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

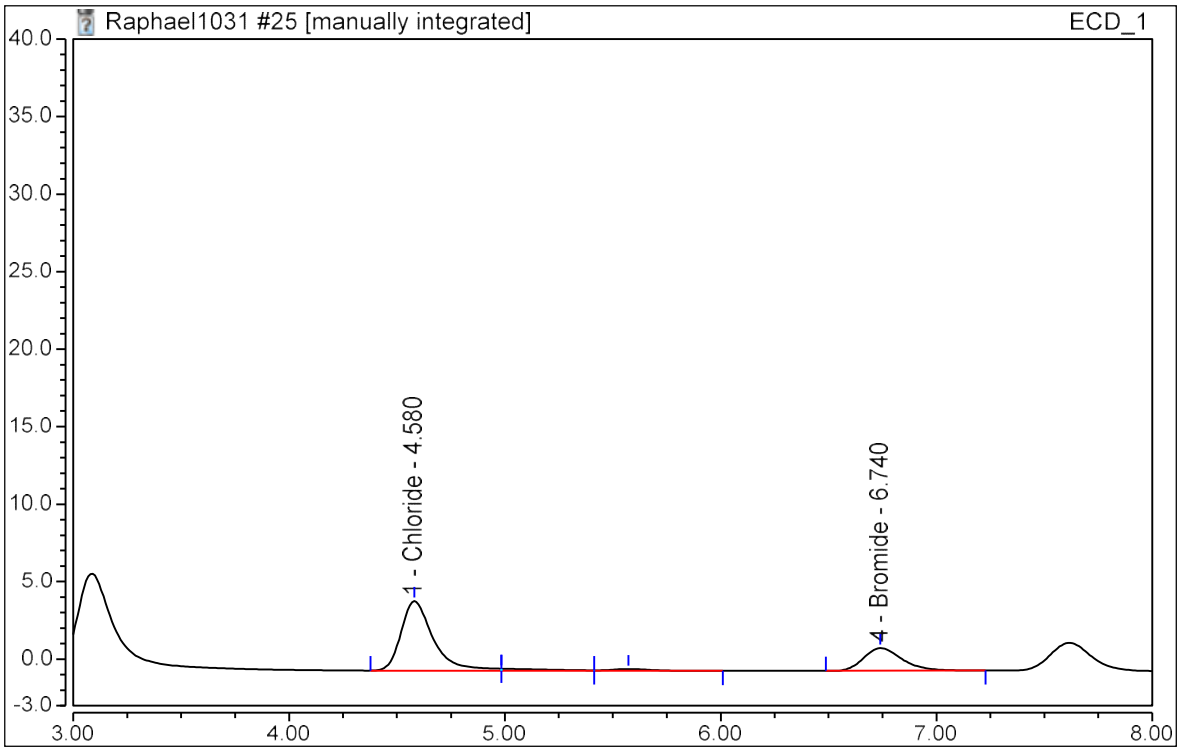
Sample Name:	**1221-086.MS-Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 02:56**	Run Time:	**29.00**



Analyst Comment: @ *4, II PRM 1/5/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	0.766	4.482	5.16069	FALSE	TRUE
4	6.74	Bromide	0.303	1.466	4.89064	FALSE	FALSE

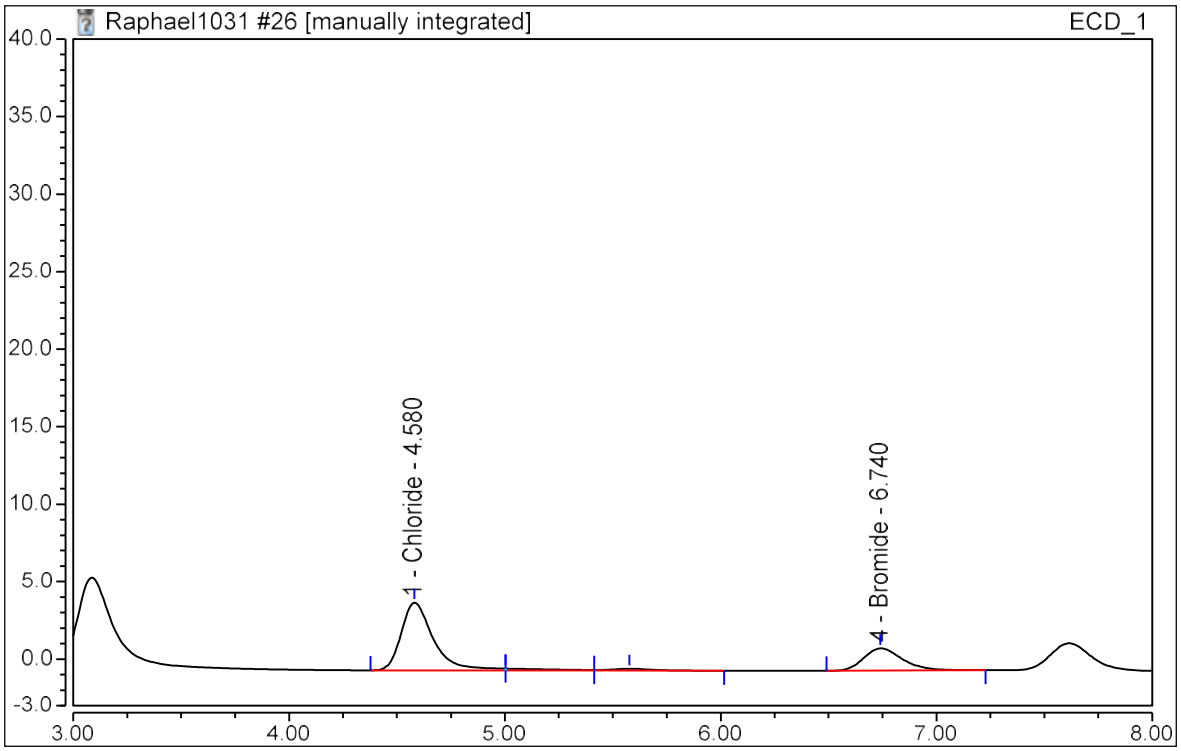
Sample Name:	**1221-086.MS-Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 03:27**	Run Time:	**29.00**



Analyst Comment: @ *4, II PRM 1/5/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	0.767	4.475	5.16495	FALSE	TRUE
4	6.74	Bromide	0.302	1.464	4.88748	FALSE	FALSE

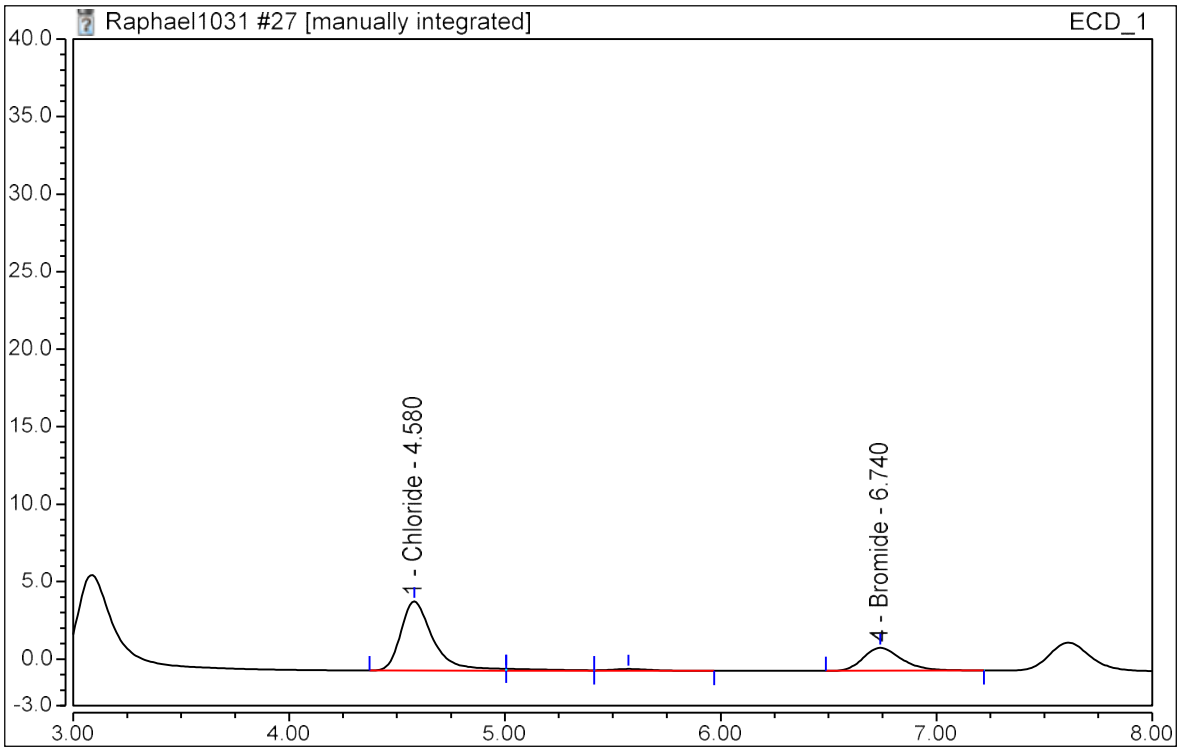
Sample Name:	**1221-086.MSD-Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 03:58**	Run Time:	**29.00**



Analyst Comment: @ *4, II PRM 1/5/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	0.751	4.365	5.06131	FALSE	TRUE
4	6.74	Bromide	0.297	1.435	4.79639	FALSE	FALSE

Sample Name:	**1221-086.MSD-Chronic-R1.NaOH**	Injection Volume:	**25.00**
Injection Type:	**Unknown**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 04:28**	Run Time:	**29.00**



Analyst Comment: @ *4, II PRM 1/5/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	0.767	4.459	5.16479	FALSE	TRUE
4	6.74	Bromide	0.303	1.472	4.89166	FALSE	FALSE

Calibration Table

No.	Injection Name	Inject Time	Pos.	Level	Ref.Amount µg/mL ECD_1 Chloride	Calibration Point Status ECD_1 Chloride	Amount µg/mL ECD_1 Bromide	Cal Point Status ECD_1 Bromide	Dil.Factor	Volume
4	HPLCStds1242 #6	28/Dec/2021 16:35	BA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
5	HPLCStds1242 #6	28/Dec/2021 17:04	BA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
6	HPLCStds1242 #5	28/Dec/2021 17:34	BA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
7	HPLCStds1242 #5	28/Dec/2021 18:04	BA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
8	HPLCStds1242 #4	28/Dec/2021 18:33	BA4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00
9	HPLCStds1242 #4	28/Dec/2021 19:03	BA4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00
10	HPLCStds1242 #3	28/Dec/2021 19:33	BA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
11	HPLCStds1242 #3	28/Dec/2021 20:03	BA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
12	HPLCStds1242 #2	28/Dec/2021 20:32	BA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
13	HPLCStds1242 #2	28/Dec/2021 21:02	BA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
14	HPLCStds1242 #1	28/Dec/2021 21:32	BA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00
15	HPLCStds1242 #1	28/Dec/2021 22:01	BA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00
72	HPLCStds1242 #6	30/Dec/2021 02:13	BA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
73	HPLCStds1242 #6	30/Dec/2021 02:43	BA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
74	HPLCStds1242 #5	30/Dec/2021 03:12	BA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
75	HPLCStds1242 #5	30/Dec/2021 03:42	BA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
76	HPLCStds1242 #4	30/Dec/2021 04:12	BA4	04	15.0000	Disabled	15.0000	Disabled	1.0000	25.00
77	HPLCStds1242 #4	30/Dec/2021 04:41	BA4	04	15.0000	Disabled	15.0000	Disabled	1.0000	25.00
78	HPLCStds1242 #3	30/Dec/2021 05:11	BA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
79	HPLCStds1242 #3	30/Dec/2021 05:41	BA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
80	HPLCStds1242 #2	30/Dec/2021 06:10	BA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
81	HPLCStds1242 #2	30/Dec/2021 06:40	BA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
82	HPLCStds1242 #1	30/Dec/2021 07:10	BA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00
83	HPLCStds1242 #1	30/Dec/2021 07:39	BA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00
86	HPLCStds1242 #4	30/Dec/2021 12:40	BB4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00
87	HPLCStds1242 #4	30/Dec/2021 13:09	BB4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00

Detection Parameters

Ret. Time min	Param. Name	Param. Value	Inj. Type	Channel
Always	Baseline Noise Auto Range	Off	Any	All Channels
Always	Baseline Noise Start Time	0.400 [min]	Any	All Channels
Always	Baseline Noise End Time	0.700 [min]	Any	All Channels
Always	Cobra Smoothing Width	Auto	Any	All Channels
Always	Consider Void Peak	Off	Any	All Channels
0.000	Maximum Rider Ratio	10 [%]	Any	All Channels
0.000	Tailing Sensitivity Factor	0.500 [%]	Any	All Channels
0.000	Inhibit Integration	On	Any	All Channels
0.000	Minimum Area	Auto	Any	All Channels
4.250	Inhibit Integration	Off	Any	All Channels
7.331	Inhibit Integration	On	Any	All Channels

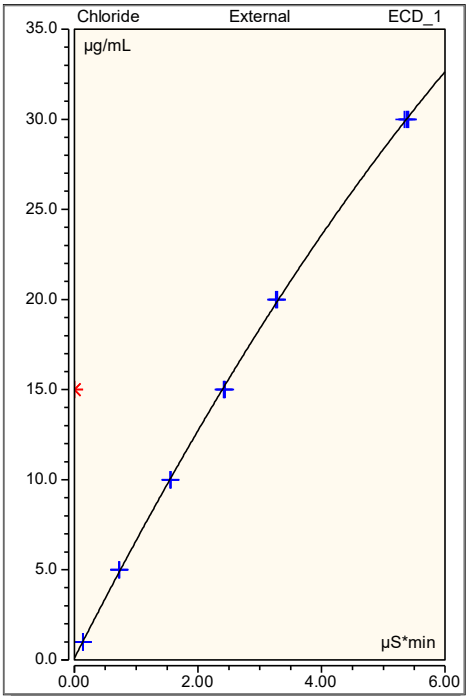
Calibration Batch Report

Sequence:	**Raphael1026**	*Injection Volume:*	**25.00**
Instrument Method:	**AS22 ASAP Base**	*Operator:*	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 22:16**	*Run Time:*	**28**

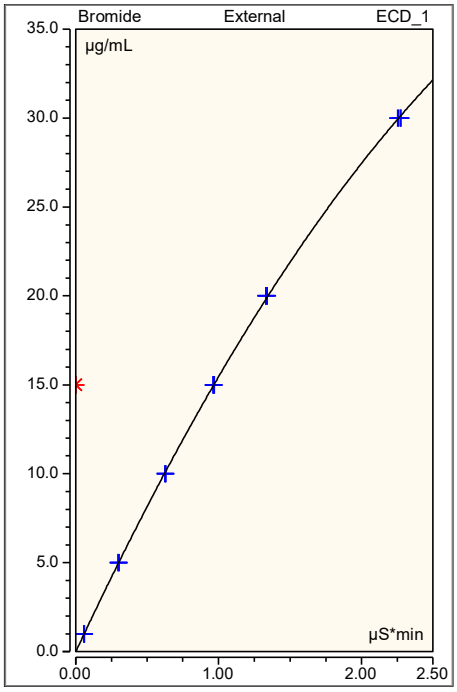
Calibration Summary

Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
Chloride	Area	Quad, WithOffset, 1/A	24.000	0.096	6.758	-0.222	99.985
Bromide	Area	Quad, WithOffset, 1/A	24.000	-0.026	17.226	-1.743	99.994
		AVERAGE:		0.0354	11.9922	-0.9827	99.9897

Injection Name	Ret.Time min ECD_1	Area µS*min ECD_1	Height µS ECD_1	Amount µg/mL ECD_1
	Chloride	Chloride	Chloride	Chloride
HPLCStds1242 #6	4.567	5.393	36.062	30.084
HPLCStds1242 #6	4.570	5.335	35.568	29.832
HPLCStds1242 #5	4.563	3.282	21.496	19.884
HPLCStds1242 #5	4.563	3.261	21.306	19.772
HPLCStds1242 #4	4.560	2.421	15.602	15.158
HPLCStds1242 #4	4.557	2.440	15.643	15.264
HPLCStds1242 #3	4.557	1.556	9.852	10.075
HPLCStds1242 #3	4.553	1.558	9.862	10.086
HPLCStds1242 #2	4.550	0.721	4.535	4.853
HPLCStds1242 #2	4.550	0.730	4.569	4.914
HPLCStds1242 #1	4.547	0.136	0.874	1.014
HPLCStds1242 #1	4.547	0.134	0.860	1.000
HPLCStds1242 #6	4.580	5.374	36.397	30.001
HPLCStds1242 #6	4.580	5.404	36.649	30.131
HPLCStds1242 #5	4.573	3.265	21.881	19.795
HPLCStds1242 #5	4.570	3.282	22.047	19.884
HPLCStds1242 #4	n.a.	n.a.	n.a.	n.a.
HPLCStds1242 #4	n.a.	n.a.	n.a.	n.a.
HPLCStds1242 #3	4.560	1.551	10.072	10.046
HPLCStds1242 #3	4.563	1.561	10.148	10.102
HPLCStds1242 #2	4.560	0.728	4.713	4.898
HPLCStds1242 #2	4.560	0.720	4.695	4.847
HPLCStds1242 #1	4.550	0.137	0.902	1.019
HPLCStds1242 #1	4.557	0.137	0.899	1.017
HPLCStds1242 #4	4.563	2.409	16.025	15.091
HPLCStds1242 #4	4.563	2.429	16.156	15.199



Injection Name	Ret.Time min ECD_1	Area µS*min ECD_1	Height µS ECD_1	Amount µg/mL ECD_1
	Bromide	Bromide	Bromide	Bromide
HPLCStds1242 #6	6.660	2.275	10.829	30.143
HPLCStds1242 #6	6.663	2.253	10.693	29.937
HPLCStds1242 #5	6.670	1.341	6.392	19.937
HPLCStds1242 #5	6.667	1.331	6.340	19.808
HPLCStds1242 #4	6.667	0.964	4.591	14.966
HPLCStds1242 #4	6.667	0.969	4.601	15.034
HPLCStds1242 #3	6.670	0.626	2.984	10.068
HPLCStds1242 #3	6.667	0.626	2.991	10.077
HPLCStds1242 #2	6.667	0.296	1.447	4.925
HPLCStds1242 #2	6.670	0.303	1.458	5.028
HPLCStds1242 #1	6.667	0.060	0.291	0.997
HPLCStds1242 #1	6.667	0.059	0.288	0.985
HPLCStds1242 #6	6.680	2.260	11.511	29.999
HPLCStds1242 #6	6.680	2.273	11.559	30.127
HPLCStds1242 #5	6.680	1.329	6.784	19.793
HPLCStds1242 #5	6.680	1.338	6.809	19.900
HPLCStds1242 #4	n.a.	n.a.	n.a.	n.a.
HPLCStds1242 #4	n.a.	n.a.	n.a.	n.a.
HPLCStds1242 #3	6.677	0.630	3.215	10.132
HPLCStds1242 #3	6.677	0.630	3.224	10.141
HPLCStds1242 #2	6.680	0.303	1.572	5.027
HPLCStds1242 #2	6.677	0.300	1.569	4.986
HPLCStds1242 #1	6.670	0.060	0.312	0.996
HPLCStds1242 #1	6.677	0.060	0.312	1.010
HPLCStds1242 #4	6.670	0.963	4.930	14.943
HPLCStds1242 #4	6.667	0.969	4.966	15.026



Calibration Table

No.	Injection Name	Inject Time	Pos.	Level	Ref.Amount µg/mL ECD_1 Chloride	Calibration Point Status ECD_1 Chloride	Amount µg/mL ECD_1 Bromide	Cal Point Status ECD_1 Bromide	Dil.Factor	Volume
2	HPLCStds1242 #6	04/Jan/2022 15:42	RA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
3	HPLCStds1242 #6	04/Jan/2022 16:12	RA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
4	HPLCStds1242 #5	04/Jan/2022 16:43	RA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
5	HPLCStds1242 #5	04/Jan/2022 17:14	RA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
6	HPLCStds1242 #4	04/Jan/2022 17:44	RA4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00
7	HPLCStds1242 #4	04/Jan/2022 18:15	RA4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00
8	HPLCStds1242 #3	04/Jan/2022 18:46	RA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
9	HPLCStds1242 #3	04/Jan/2022 19:16	RA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
10	HPLCStds1242 #2	04/Jan/2022 19:47	RA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
11	HPLCStds1242 #2	04/Jan/2022 20:18	RA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
12	HPLCStds1242 #1	04/Jan/2022 20:48	RA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00
13	HPLCStds1242 #1	04/Jan/2022 21:19	RA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00
39	HPLCStds1242 #6	05/Jan/2022 10:37	RA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
40	HPLCStds1242 #6	05/Jan/2022 11:07	RA6	06	30.0000	Ok	30.0000	Ok	1.0000	25.00
41	HPLCStds1242 #5	05/Jan/2022 11:38	RA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
42	HPLCStds1242 #5	05/Jan/2022 12:09	RA5	05	20.0000	Ok	20.0000	Ok	1.0000	25.00
43	HPLCStds1242 #4	05/Jan/2022 12:39	RA4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00
44	HPLCStds1242 #4	05/Jan/2022 13:10	RA4	04	15.0000	Ok	15.0000	Ok	1.0000	25.00
45	HPLCStds1242 #3	05/Jan/2022 14:05	RA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
46	HPLCStds1242 #3	05/Jan/2022 14:35	RA3	03	10.0000	Ok	10.0000	Ok	1.0000	25.00
47	HPLCStds1242 #2	05/Jan/2022 15:06	RA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
48	HPLCStds1242 #2	05/Jan/2022 15:37	RA2	02	5.0000	Ok	5.0000	Ok	1.0000	25.00
49	HPLCStds1242 #1	05/Jan/2022 16:07	RA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00
50	HPLCStds1242 #1	05/Jan/2022 16:38	RA1	01	1.0000	Ok	1.0000	Ok	1.0000	25.00

Detection Parameters

Ret. Time min	Param. Name	Param. Value	Inj. Type	Channel
Always	Baseline Noise Auto Range	Off	Any	All Channels
Always	Baseline Noise Start Time	0.400 [min]	Any	All Channels
Always	Baseline Noise End Time	0.700 [min]	Any	All Channels
Always	Cobra Smoothing Width	Auto	Any	All Channels
Always	Consider Void Peak	Off	Any	All Channels
0.000	Maximum Rider Ratio	10 [%]	Any	All Channels
0.000	Tailing Sensitivity Factor	0.500 [%]	Any	All Channels
0.000	Inhibit Integration	On	Any	All Channels
0.000	Minimum Area	Auto	Any	All Channels
4.250	Inhibit Integration	Off	Any	All Channels
5.000	Inhibit Integration	On	Any	All Channels
6.400	Inhibit Integration	Off	Any	All Channels
7.331	Inhibit Integration	On	Any	All Channels

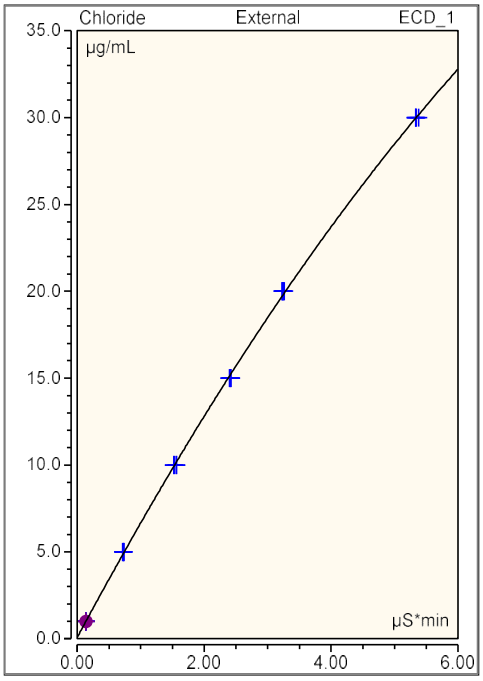
Calibration Batch Report

Sequence:	**Raphael1031**	*Injection Volume:*	**25.00**
Instrument Method:	**AS22 ASAP Base**	*Operator:*	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 16:38**	*Run Time:*	**29**

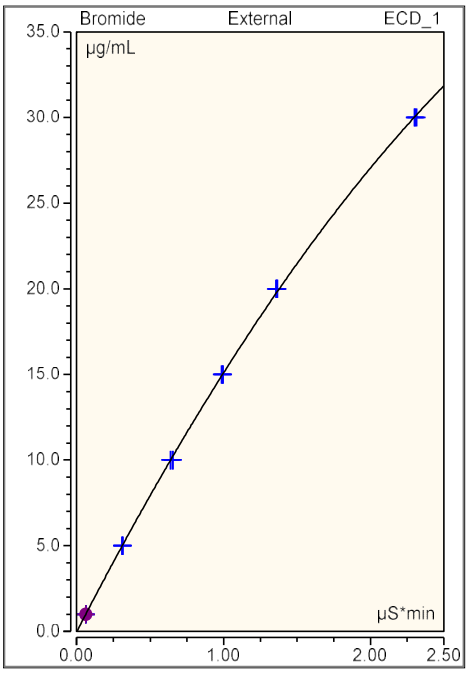
Calibration Summary

Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
Chloride	Area	Quad, WithOffset, 1/A	24.000	0.069	6.823	-0.228	99.984
Bromide	Area	Quad, WithOffset, 1/A	24.000	-0.016	16.688	-1.577	99.989
		AVERAGE:		0.0264	11.7555	-0.9023	99.9865

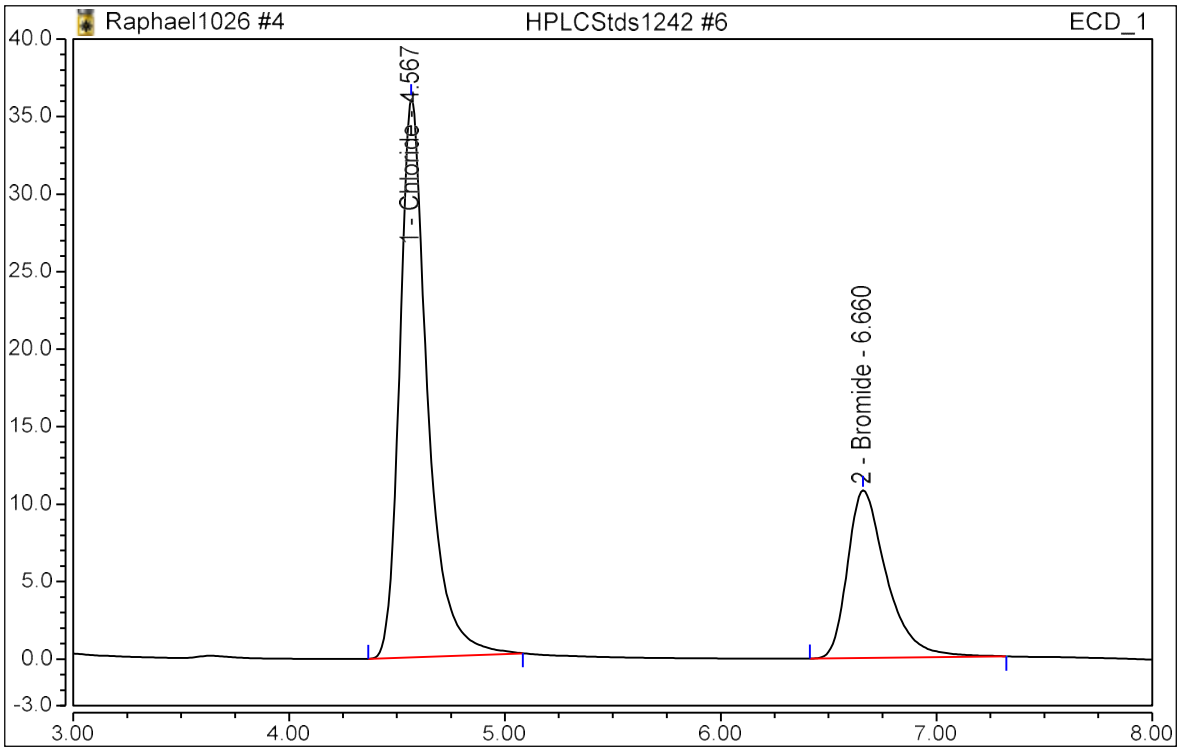
Injection Name	Ret.Time min ECD_1	Area µS*min ECD_1	Height µS ECD_1	Amount µg/mL ECD_1
	Chloride	Chloride	Chloride	Chloride
HPLCStds1242 #6	4.573	5.377	36.250	30.164
HPLCStds1242 #6	4.573	5.334	35.906	29.977
HPLCStds1242 #5	4.567	3.229	21.544	19.721
HPLCStds1242 #5	4.563	3.247	21.663	19.818
HPLCStds1242 #4	4.560	2.397	15.916	15.114
HPLCStds1242 #4	4.557	2.404	15.960	15.153
HPLCStds1242 #3	4.553	1.524	10.003	9.939
HPLCStds1242 #3	4.557	1.523	10.002	9.930
HPLCStds1242 #2	4.553	0.717	4.663	4.847
HPLCStds1242 #2	4.557	0.725	4.690	4.896
HPLCStds1242 #1	4.553	0.138	0.884	1.006
HPLCStds1242 #1	4.553	0.138	0.882	1.005
HPLCStds1242 #6	4.587	5.329	34.908	29.954
HPLCStds1242 #6	4.587	5.341	35.381	30.007
HPLCStds1242 #5	4.577	3.262	21.552	19.897
HPLCStds1242 #5	4.577	3.237	21.313	19.768
HPLCStds1242 #4	4.577	2.422	15.972	15.257
HPLCStds1242 #4	4.580	2.421	15.977	15.254
HPLCStds1242 #3	4.543	1.564	10.283	10.184
HPLCStds1242 #3	4.547	1.562	10.278	10.168
HPLCStds1242 #2	4.543	0.730	4.770	4.931
HPLCStds1242 #2	4.547	0.733	4.813	4.946
HPLCStds1242 #1	4.543	0.139	0.907	1.014
HPLCStds1242 #1	4.547	0.139	0.904	1.014



Injection Name	Ret.Time min ECD_1	Area µS*min ECD_1	Height µS ECD_1	Amount µg/mL ECD_1
	Bromide	Bromide	Bromide	Bromide
HPLCStds1242 #6	6.670	2.314	11.419	30.162
HPLCStds1242 #6	6.667	2.302	11.325	30.043
HPLCStds1242 #5	6.673	1.356	6.646	19.713
HPLCStds1242 #5	6.670	1.362	6.684	19.791
HPLCStds1242 #4	6.670	0.987	4.849	14.919
HPLCStds1242 #4	6.667	0.990	4.852	14.960
HPLCStds1242 #3	6.667	0.638	3.137	9.995
HPLCStds1242 #3	6.673	0.639	3.128	9.999
HPLCStds1242 #2	6.677	0.308	1.524	4.975
HPLCStds1242 #2	6.677	0.311	1.531	5.014
HPLCStds1242 #1	6.680	0.061	0.301	0.995
HPLCStds1242 #1	6.680	0.060	0.299	0.978
HPLCStds1242 #6	6.700	2.300	11.355	30.026
HPLCStds1242 #6	6.693	2.308	11.511	30.101
HPLCStds1242 #5	6.693	1.368	6.866	19.861
HPLCStds1242 #5	6.693	1.362	6.830	19.793
HPLCStds1242 #4	6.697	0.997	5.050	15.058
HPLCStds1242 #4	6.700	0.995	5.033	15.029
HPLCStds1242 #3	6.637	0.654	3.314	10.227
HPLCStds1242 #3	6.647	0.654	3.298	10.224
HPLCStds1242 #2	6.650	0.312	1.595	5.040
HPLCStds1242 #2	6.650	0.315	1.606	5.078
HPLCStds1242 #1	6.653	0.061	0.317	0.995
HPLCStds1242 #1	6.660	0.061	0.314	1.000



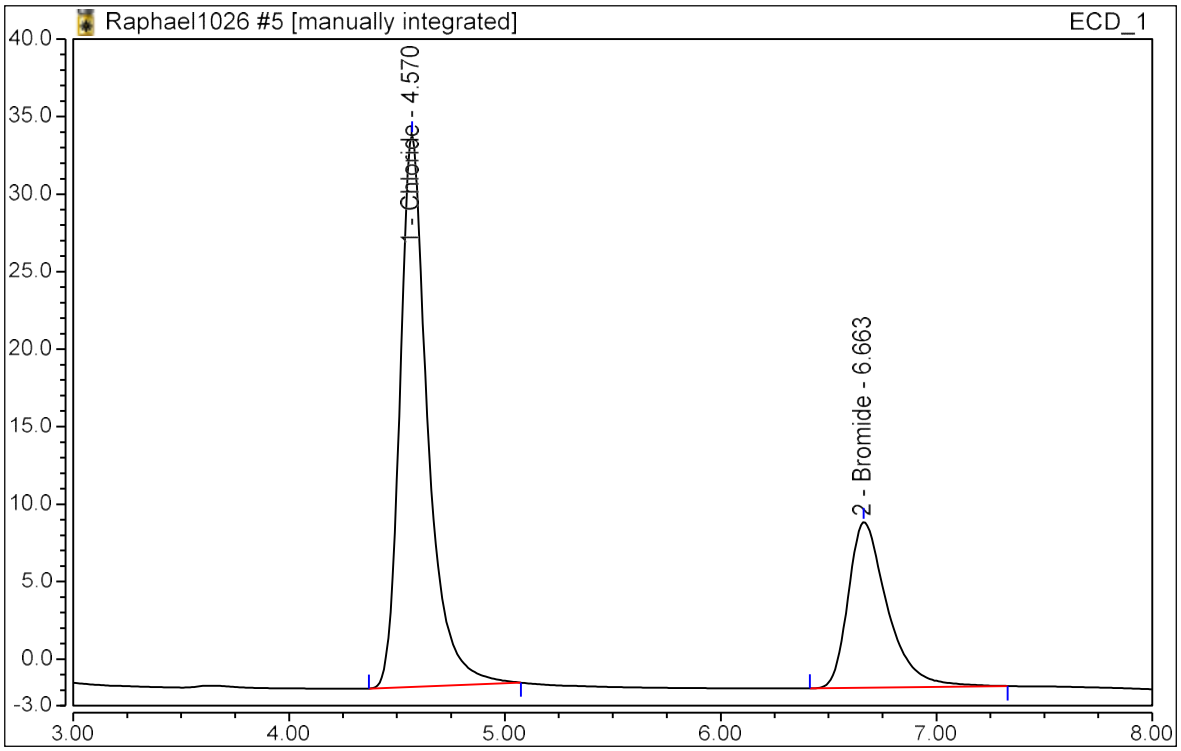
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 16:35**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	5.393	36.062	30.08429	FALSE	FALSE
2	6.66	Bromide	2.275	10.829	30.14303	FALSE	FALSE

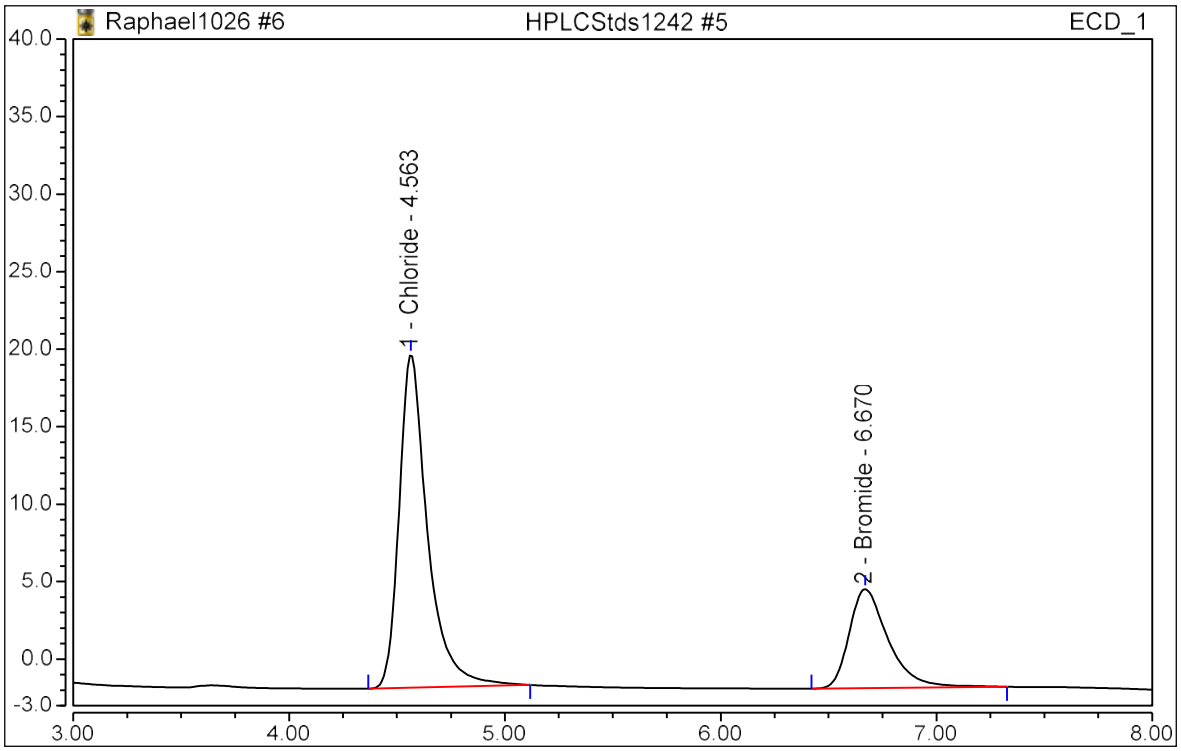
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 17:04**	Run Time:	**28.00**



Analyst Comment: II DLM 12/29/21

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	5.335	35.568	29.83231	FALSE	TRUE
2	6.66	Bromide	2.253	10.693	29.93716	FALSE	FALSE

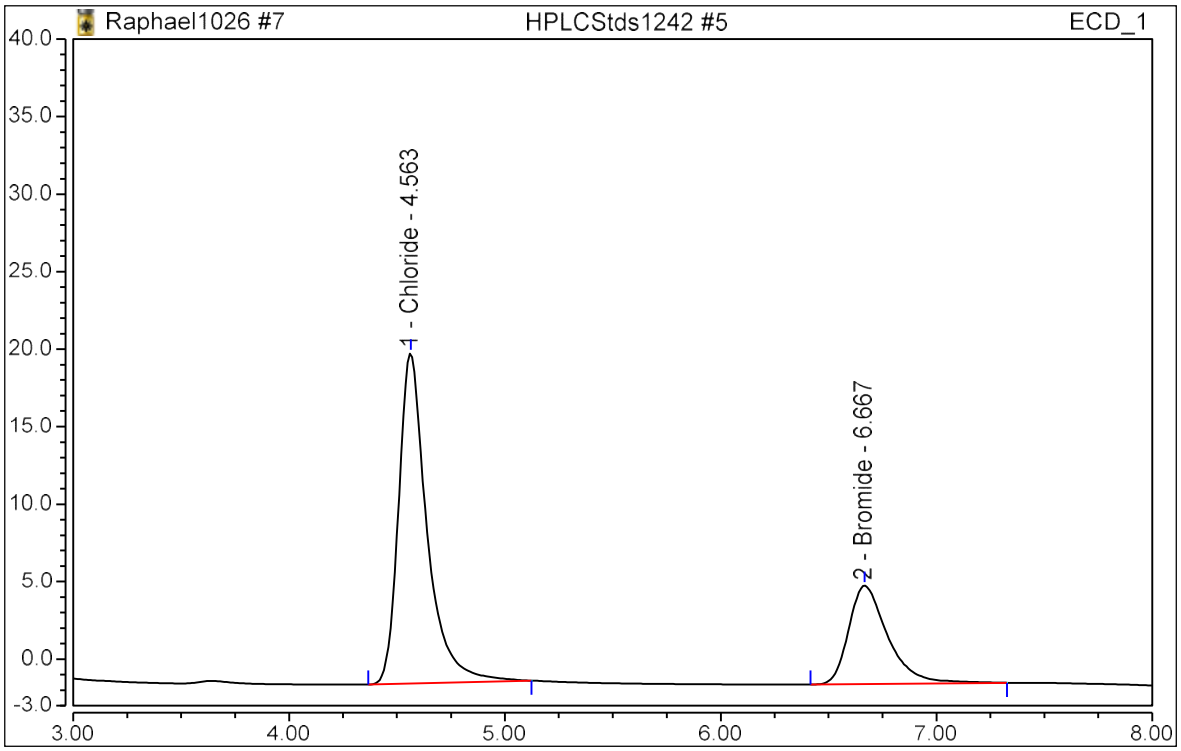
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 17:34**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	3.282	21.496	19.88415	FALSE	FALSE
2	6.67	Bromide	1.341	6.392	19.93699	FALSE	FALSE

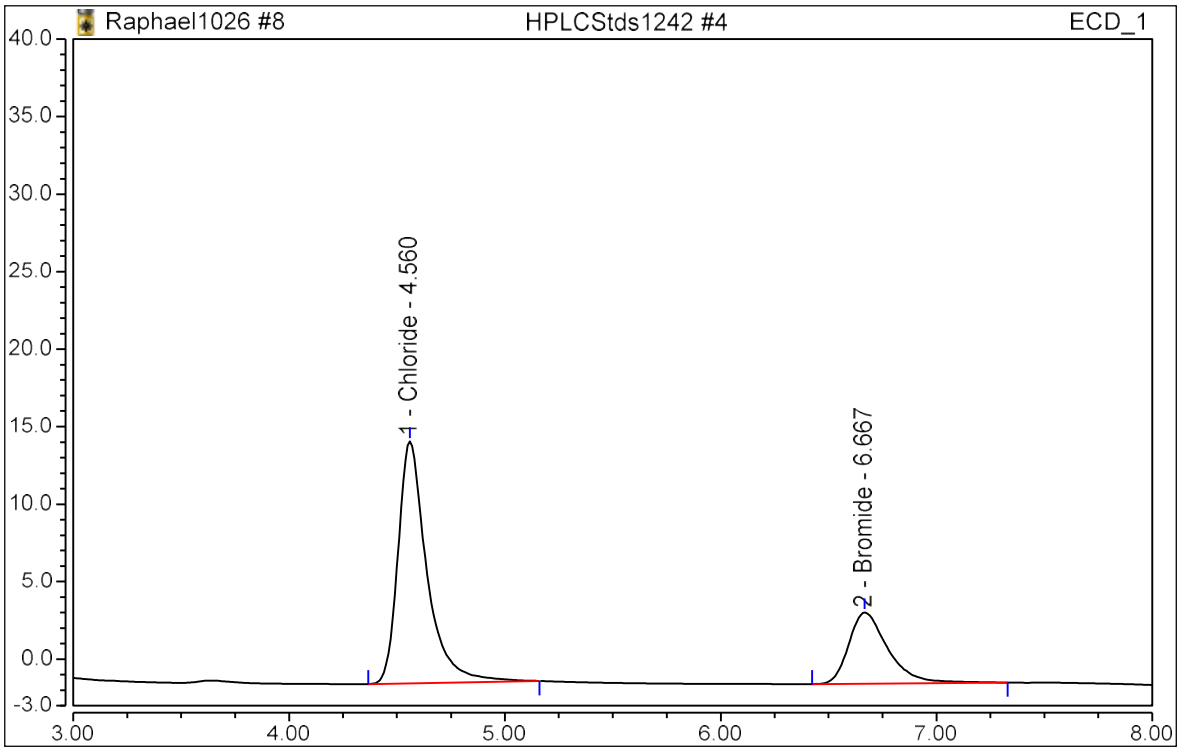
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 18:04**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	3.261	21.306	19.77176	FALSE	FALSE
2	6.67	Bromide	1.331	6.340	19.80788	FALSE	FALSE

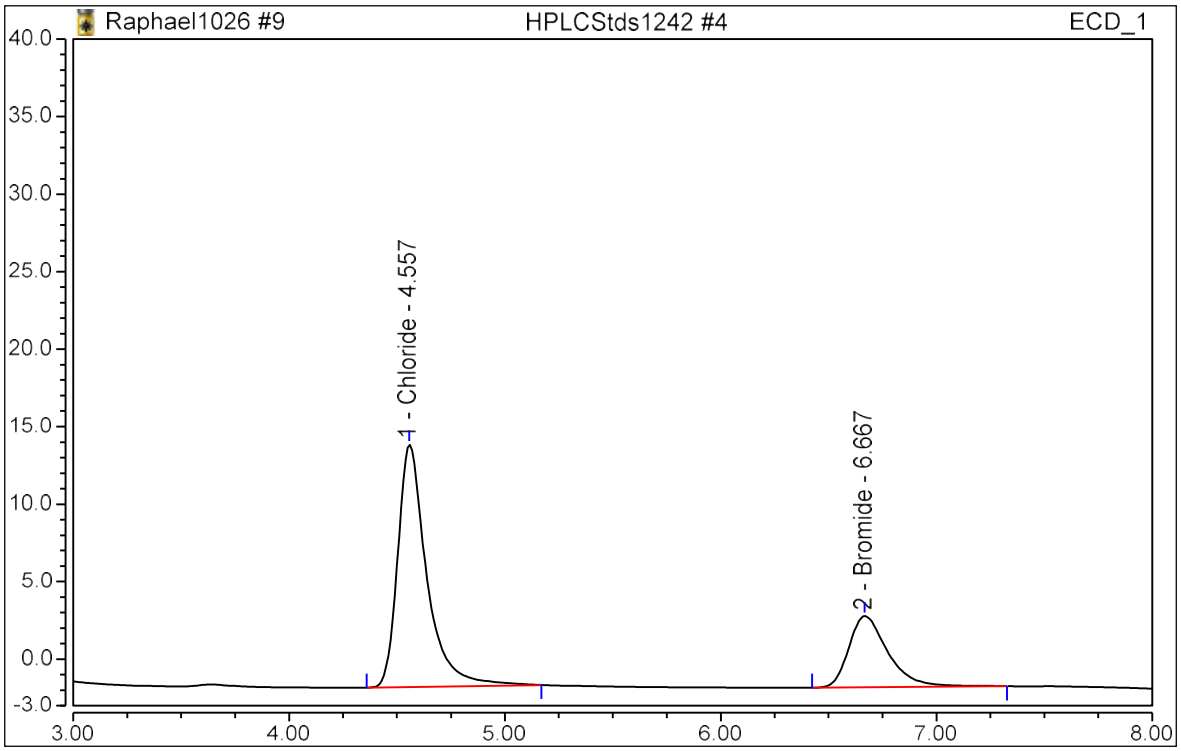
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 18:33**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	2.421	15.602	15.15818	FALSE	FALSE
2	6.67	Bromide	0.964	4.591	14.96643	FALSE	FALSE

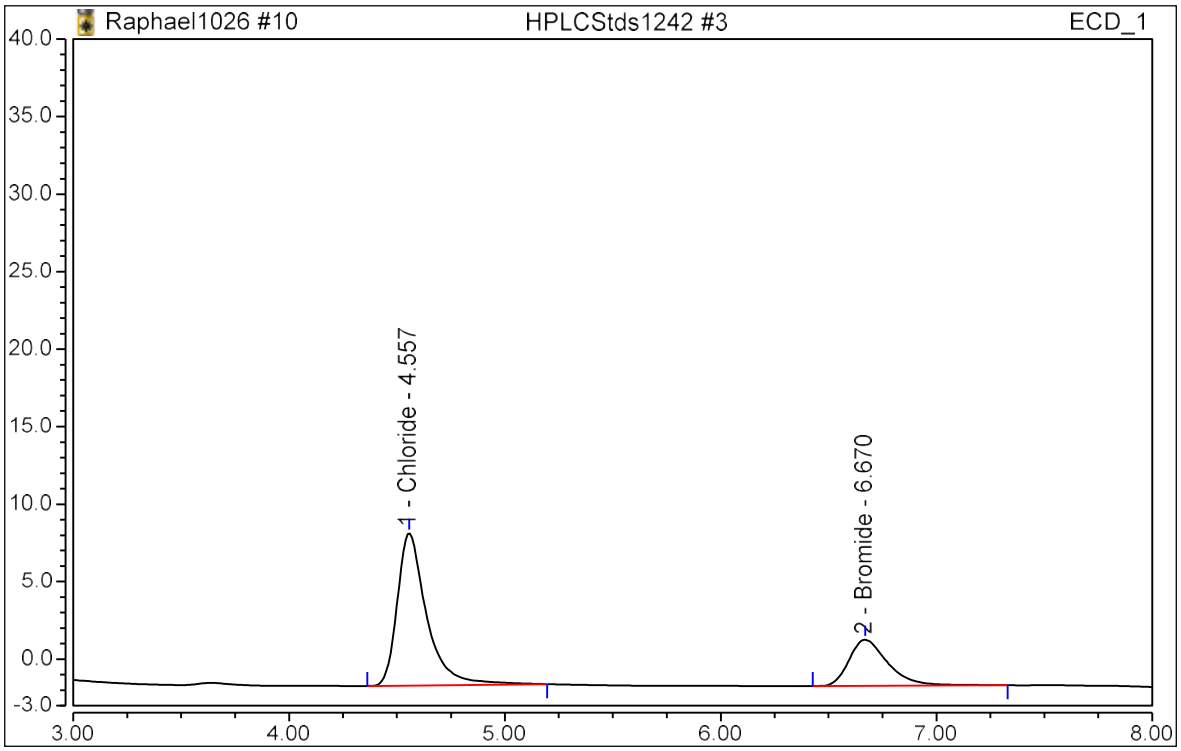
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 19:03**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	2.440	15.643	15.26384	FALSE	FALSE
2	6.67	Bromide	0.969	4.601	15.03438	FALSE	FALSE

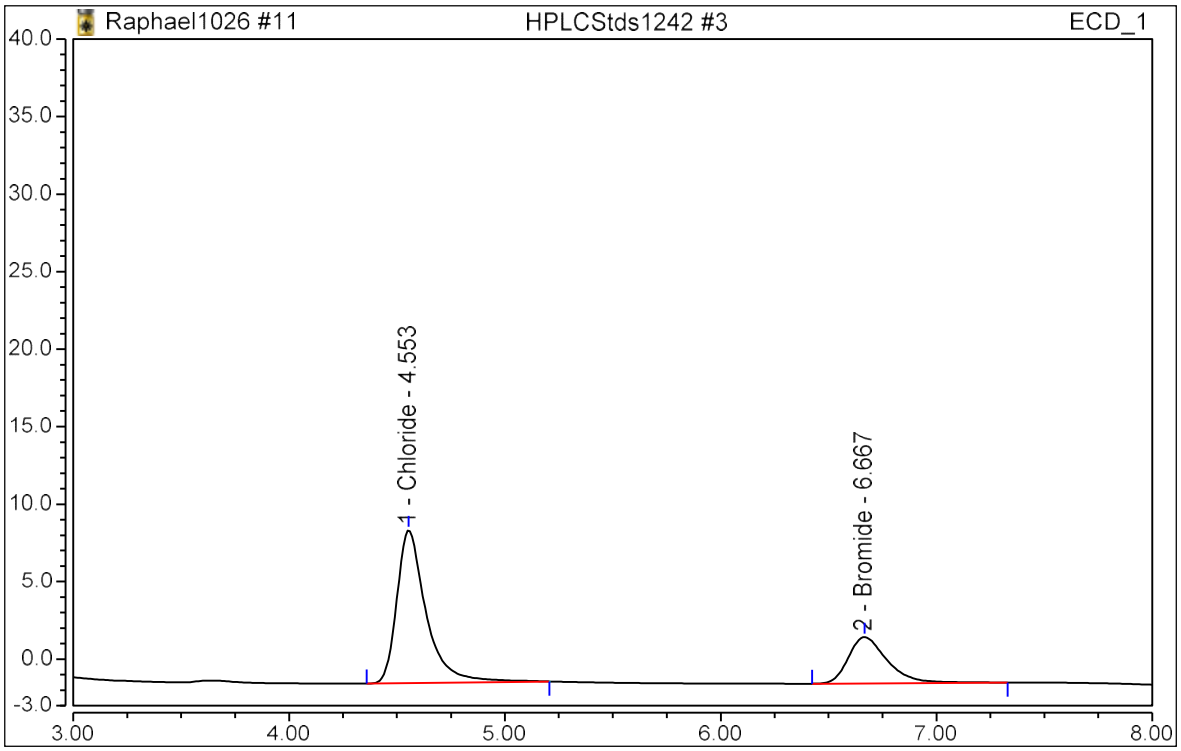
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 19:33**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	1.556	9.852	10.07461	FALSE	FALSE
2	6.67	Bromide	0.626	2.984	10.06803	FALSE	FALSE

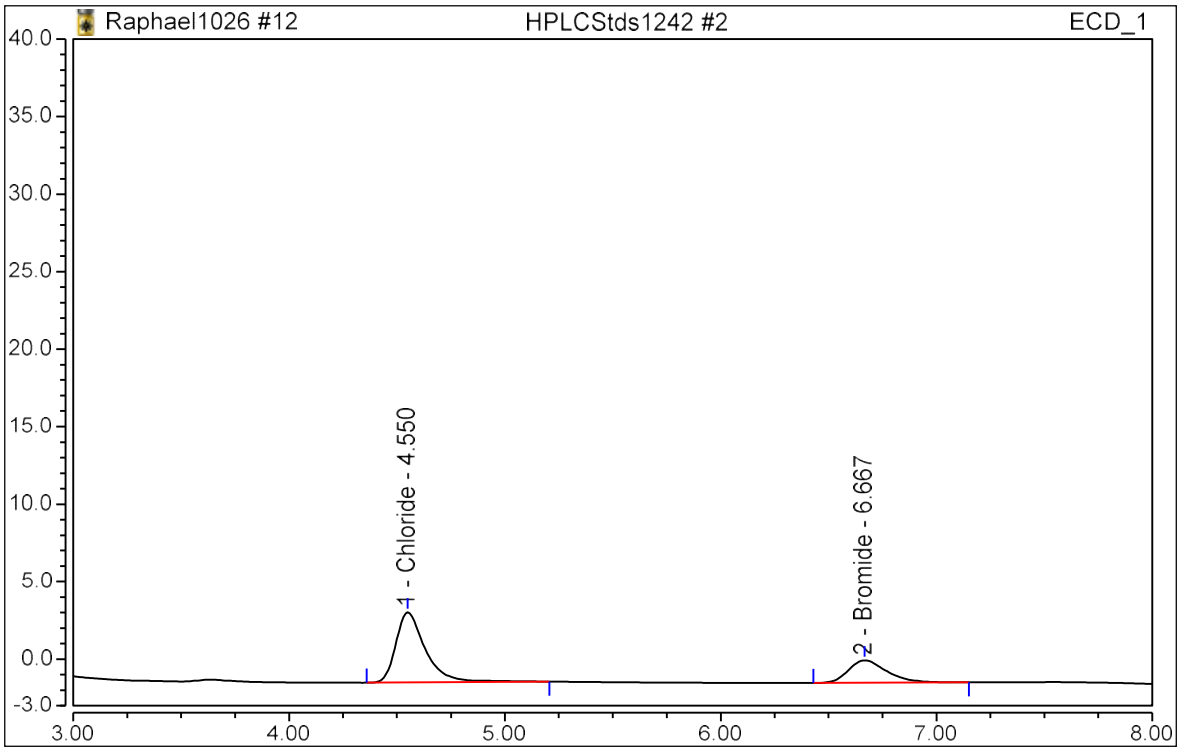
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 20:03**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	1.558	9.862	10.08590	FALSE	FALSE
2	6.67	Bromide	0.626	2.991	10.07710	FALSE	FALSE

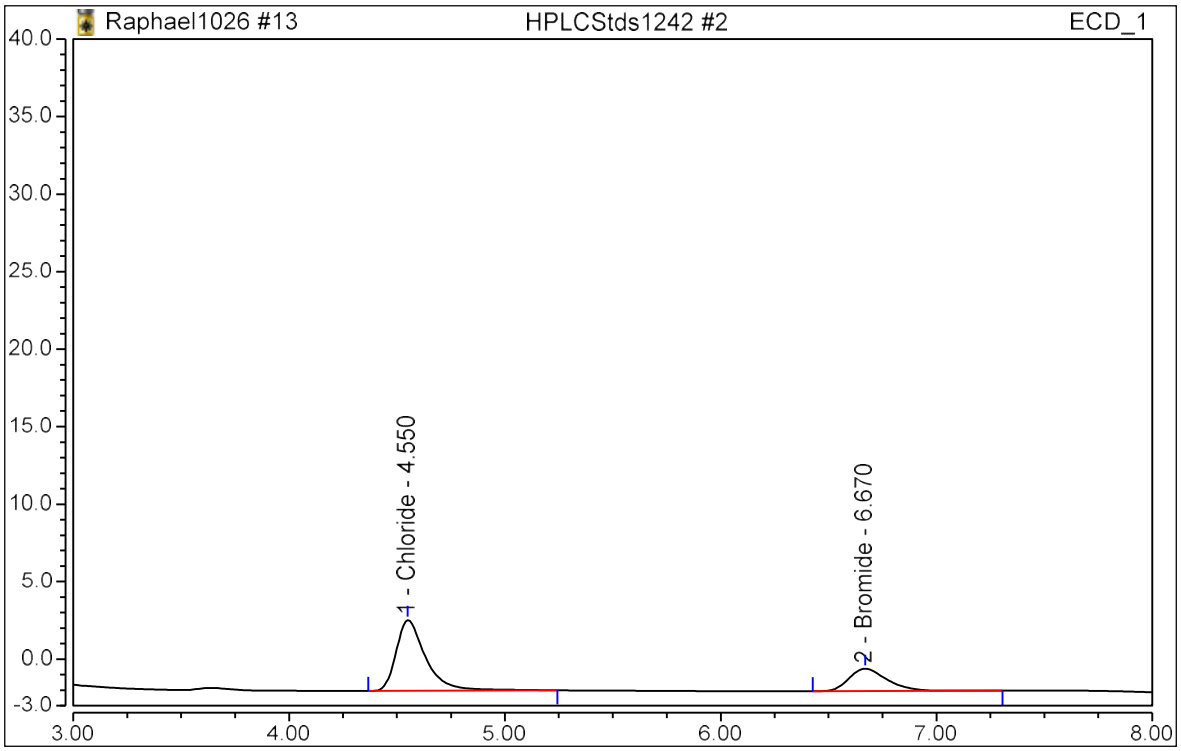
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 20:32**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.721	4.535	4.85337	FALSE	FALSE
2	6.67	Bromide	0.296	1.447	4.92491	FALSE	FALSE

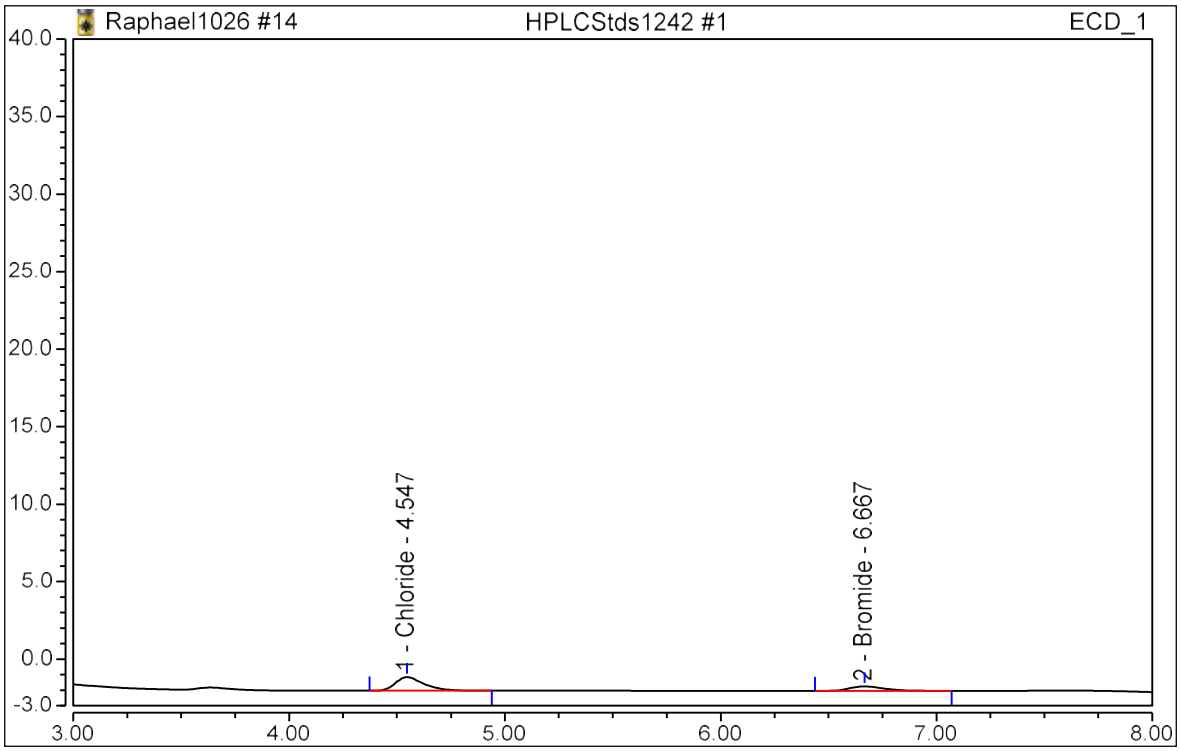
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 21:02**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.730	4.569	4.91415	FALSE	FALSE
2	6.67	Bromide	0.303	1.458	5.02832	FALSE	FALSE

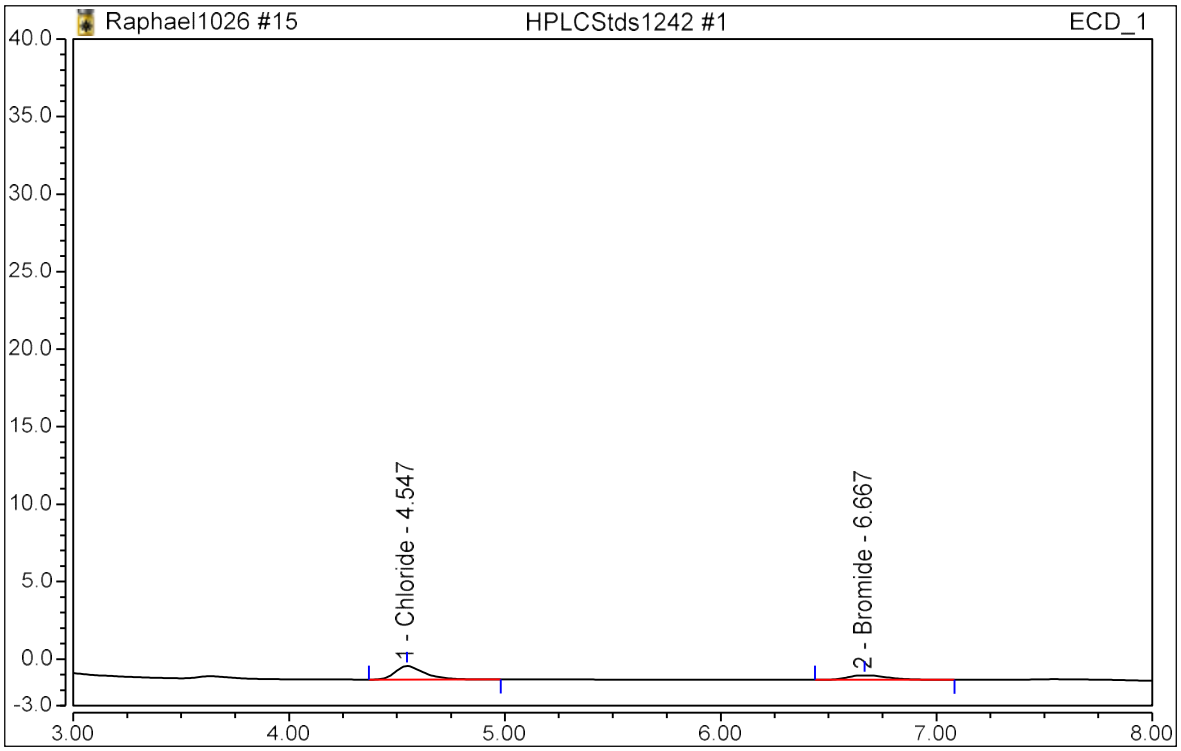
Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 21:32**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.136	0.874	1.01448	FALSE	FALSE
2	6.67	Bromide	0.060	0.291	0.99727	FALSE	FALSE

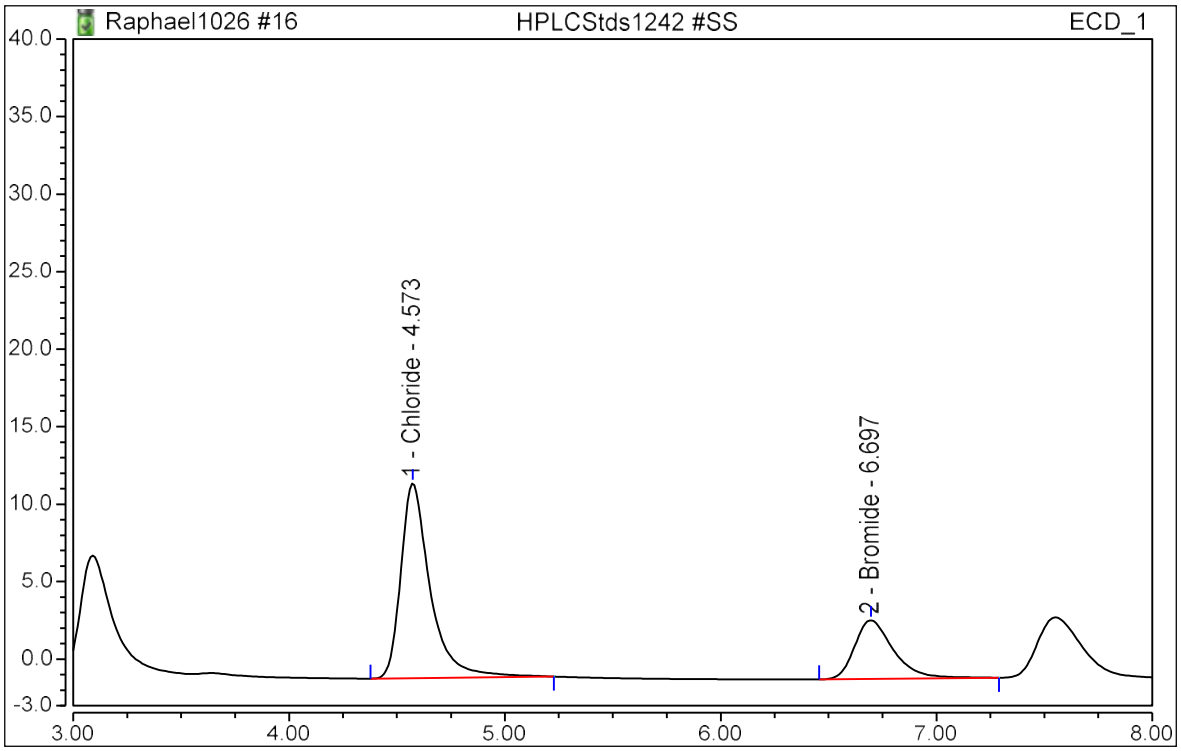
Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 22:01**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.134	0.860	0.99996	FALSE	FALSE
2	6.67	Bromide	0.059	0.288	0.98500	FALSE	FALSE

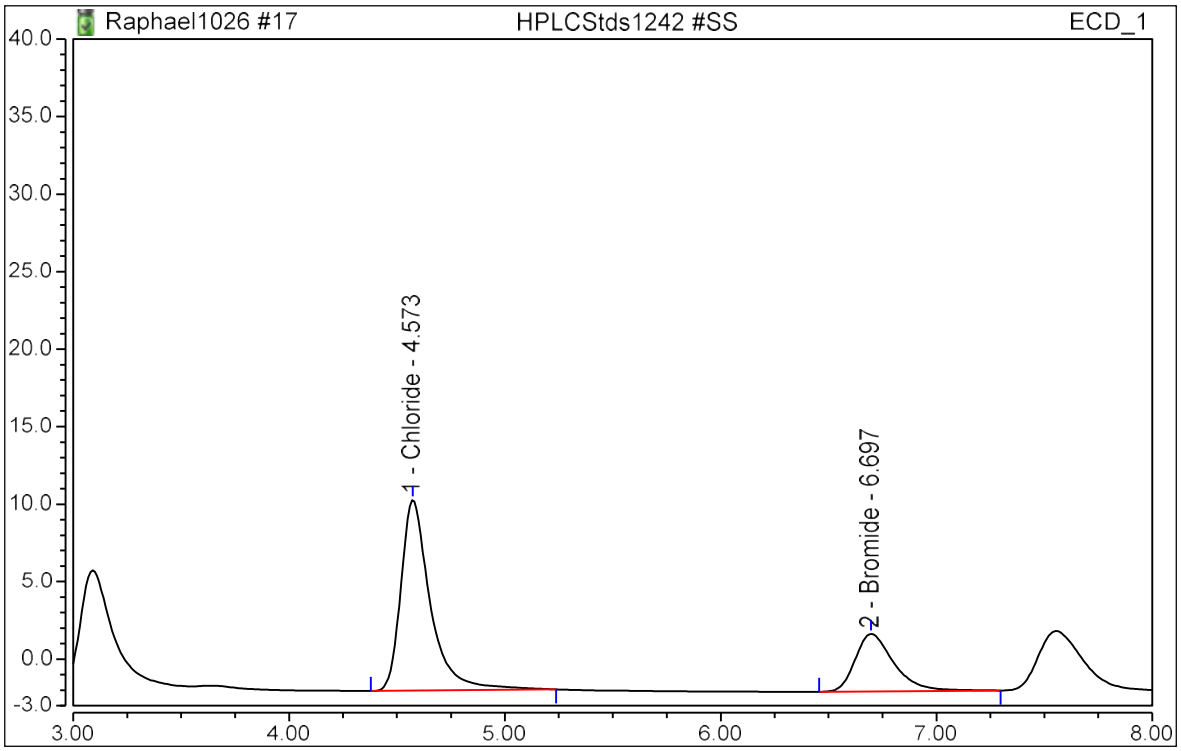
Sample Name:	**HPLCStds1242 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 22:31**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	1.992	12.577	12.67698	FALSE	FALSE
2	6.70	Bromide	0.783	3.783	12.39836	FALSE	FALSE

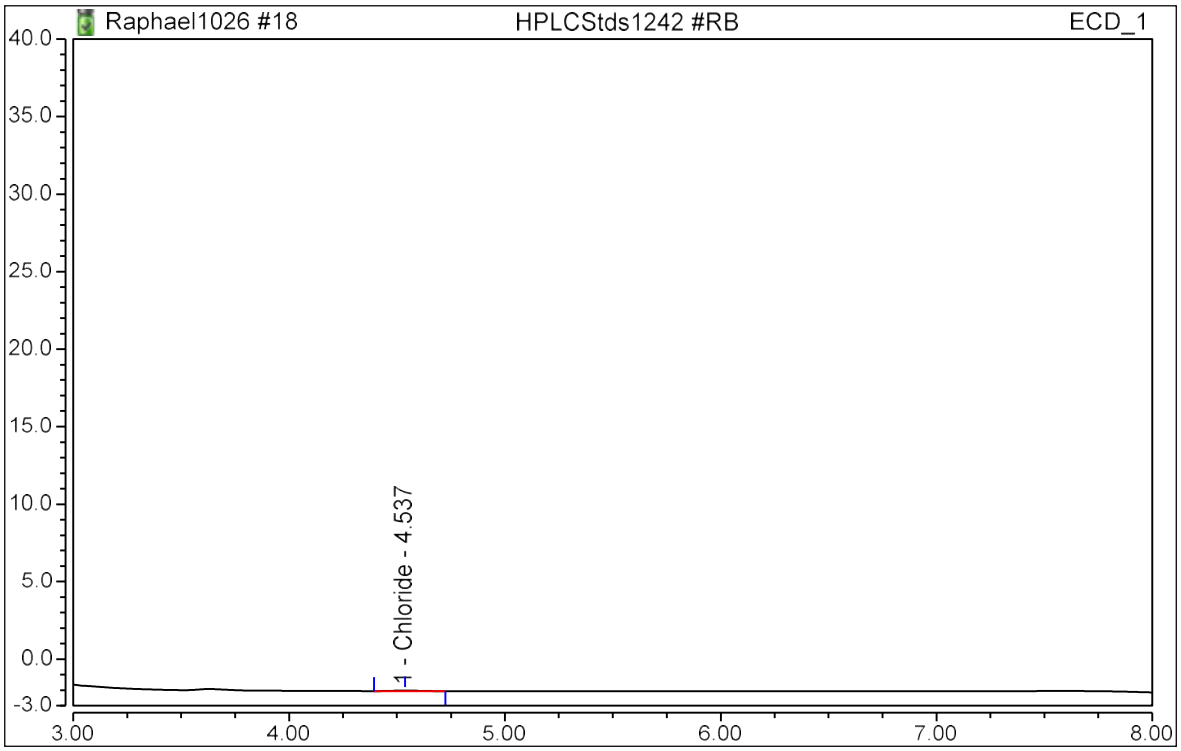
Sample Name:	**HPLCStds1242 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 23:01**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	1.951	12.306	12.43710	FALSE	FALSE
2	6.70	Bromide	0.769	3.714	12.19582	FALSE	FALSE

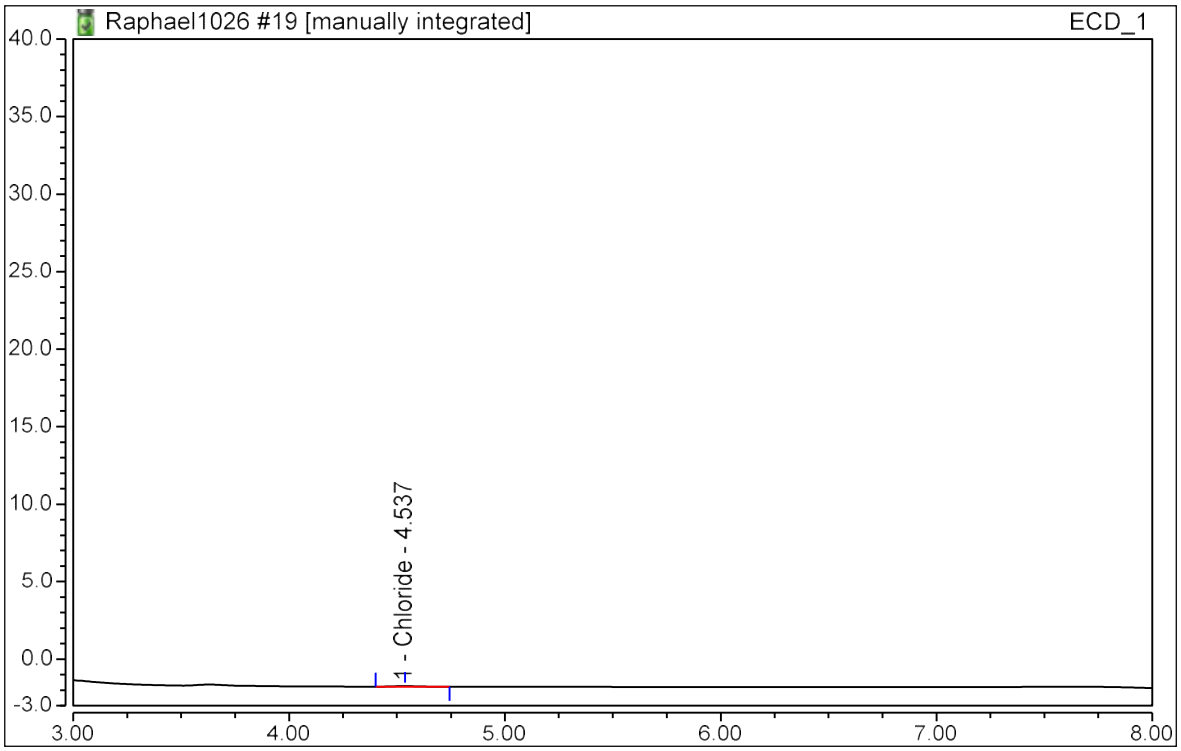
Sample Name:	**HPLCStds1242 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**28-Dec-2021 / 23:30**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.54	Chloride	0.005	0.038	0.12958	FALSE	FALSE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

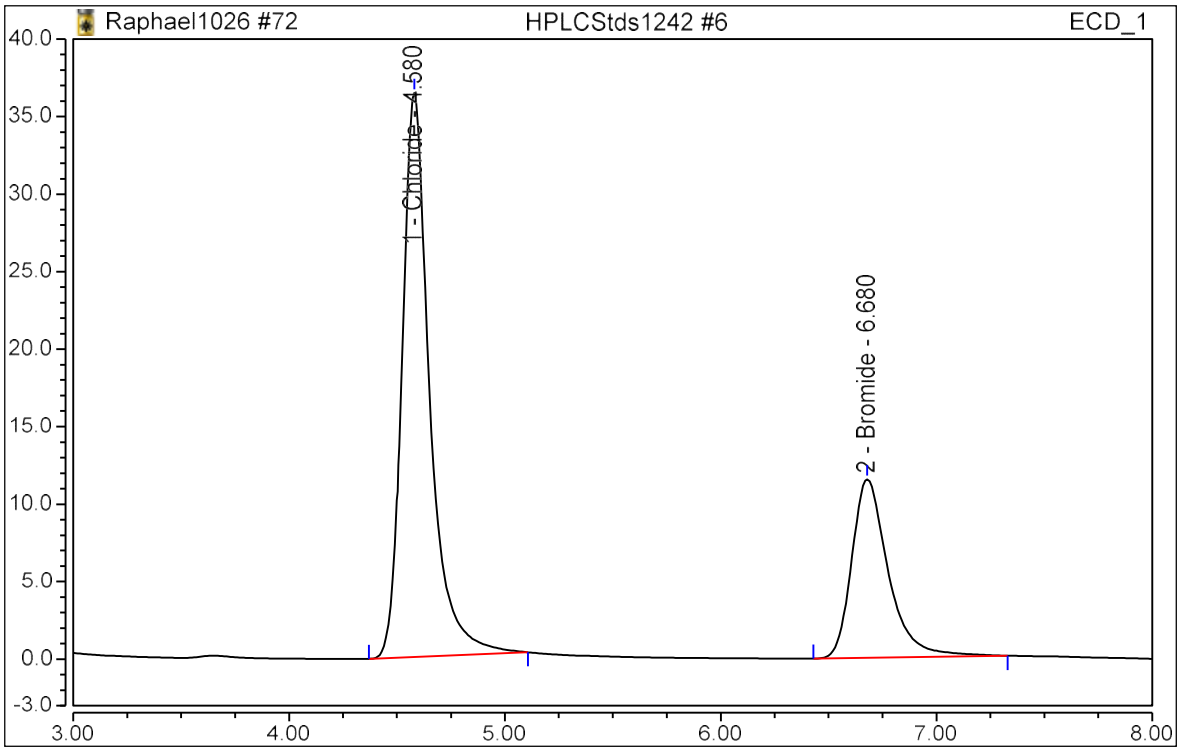
Sample Name:	**HPLCStds1242 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**29-Dec-2021 / 00:00**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.54	Chloride	0.005	0.037	0.12908	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

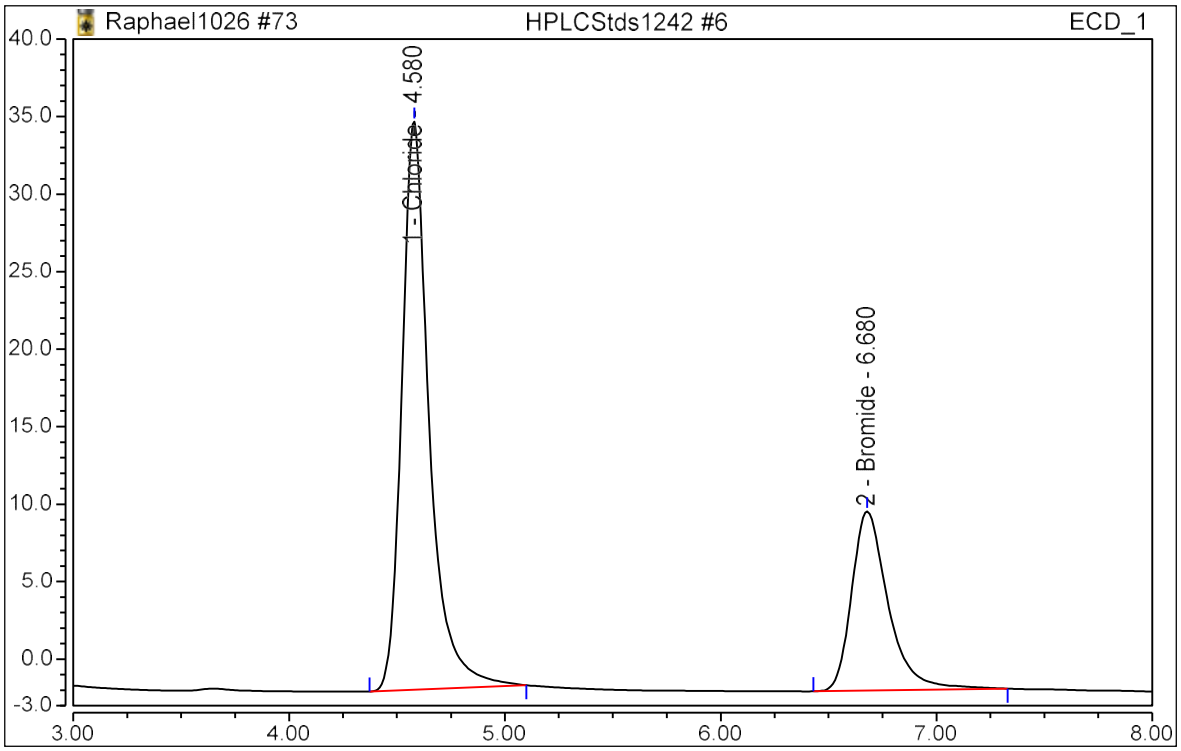
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 02:13**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	5.374	36.397	30.00097	FALSE	FALSE
2	6.68	Bromide	2.260	11.511	29.99854	FALSE	FALSE

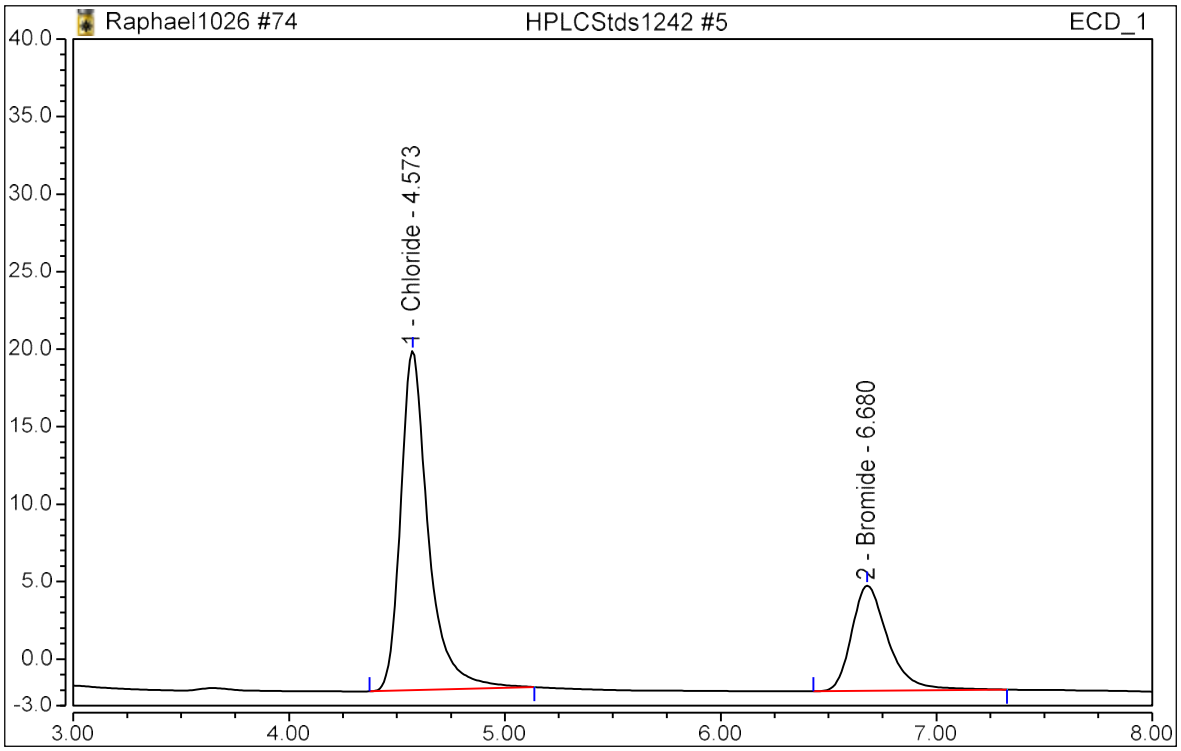
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 02:43**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	5.404	36.649	30.13072	FALSE	FALSE
2	6.68	Bromide	2.273	11.559	30.12745	FALSE	FALSE

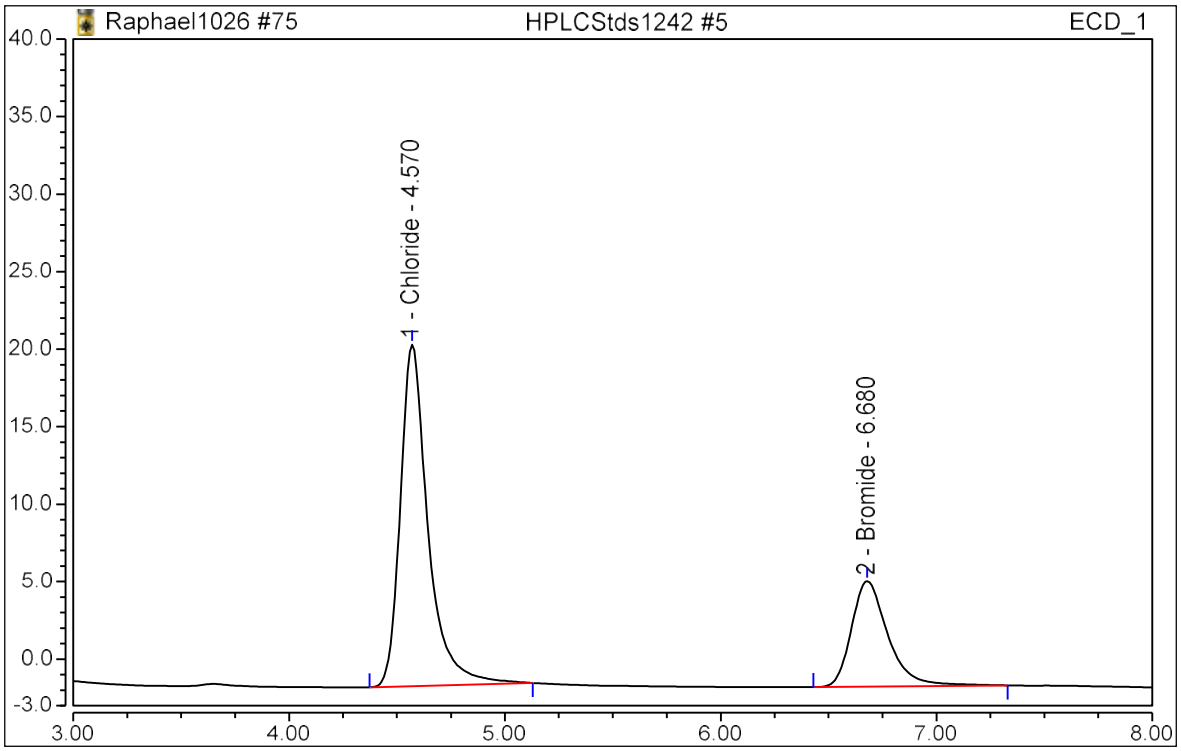
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 03:12**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	3.265	21.881	19.79534	FALSE	FALSE
2	6.68	Bromide	1.329	6.784	19.79320	FALSE	FALSE

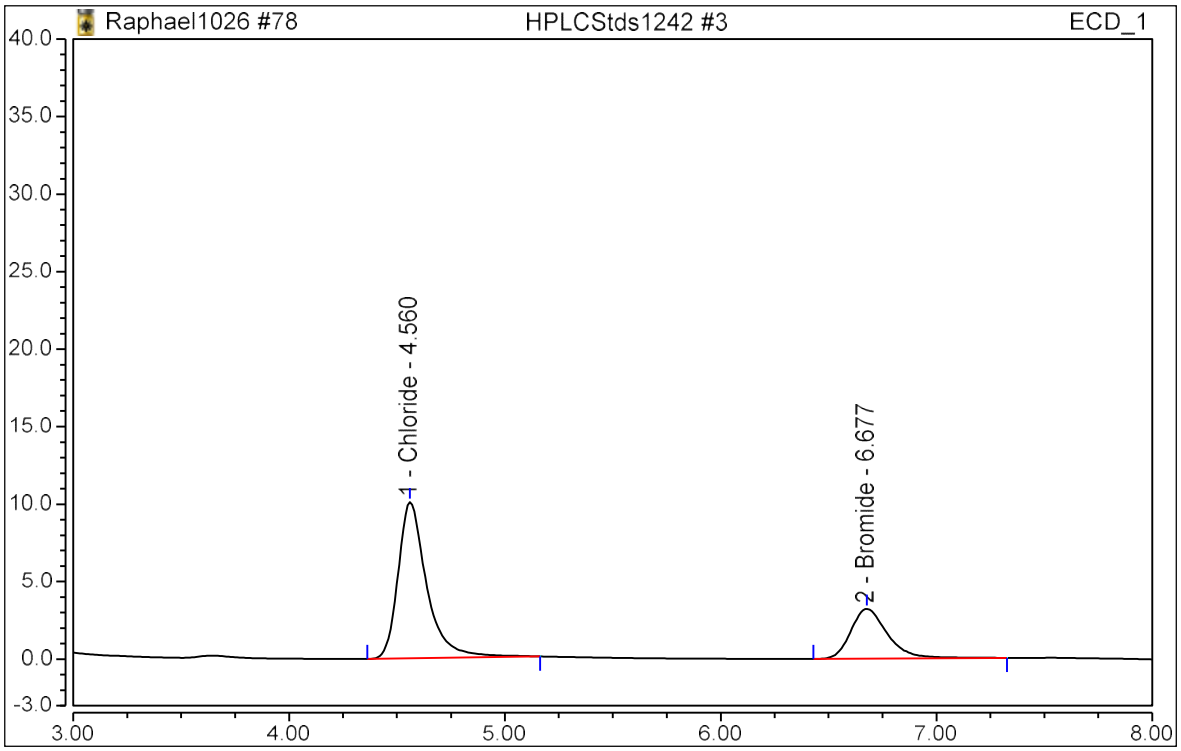
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 03:42**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	3.282	22.047	19.88405	FALSE	FALSE
2	6.68	Bromide	1.338	6.809	19.90024	FALSE	FALSE

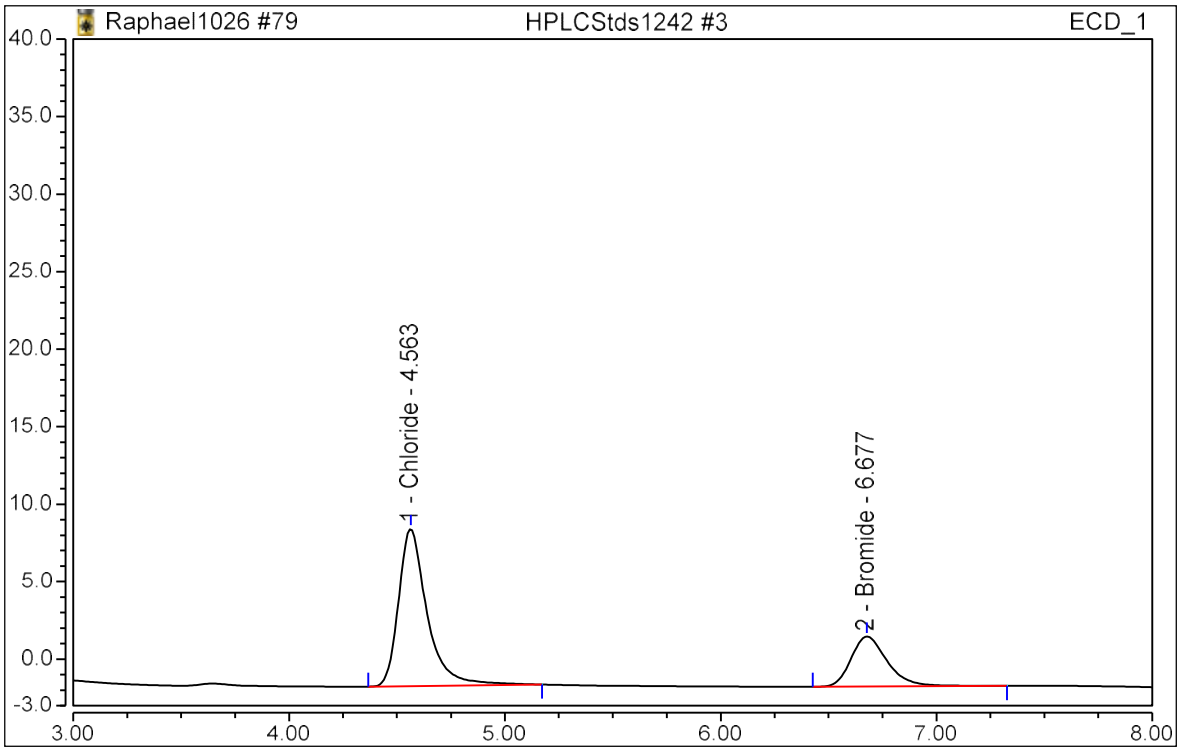
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 05:11**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	1.551	10.072	10.04571	FALSE	FALSE
2	6.68	Bromide	0.630	3.215	10.13201	FALSE	FALSE

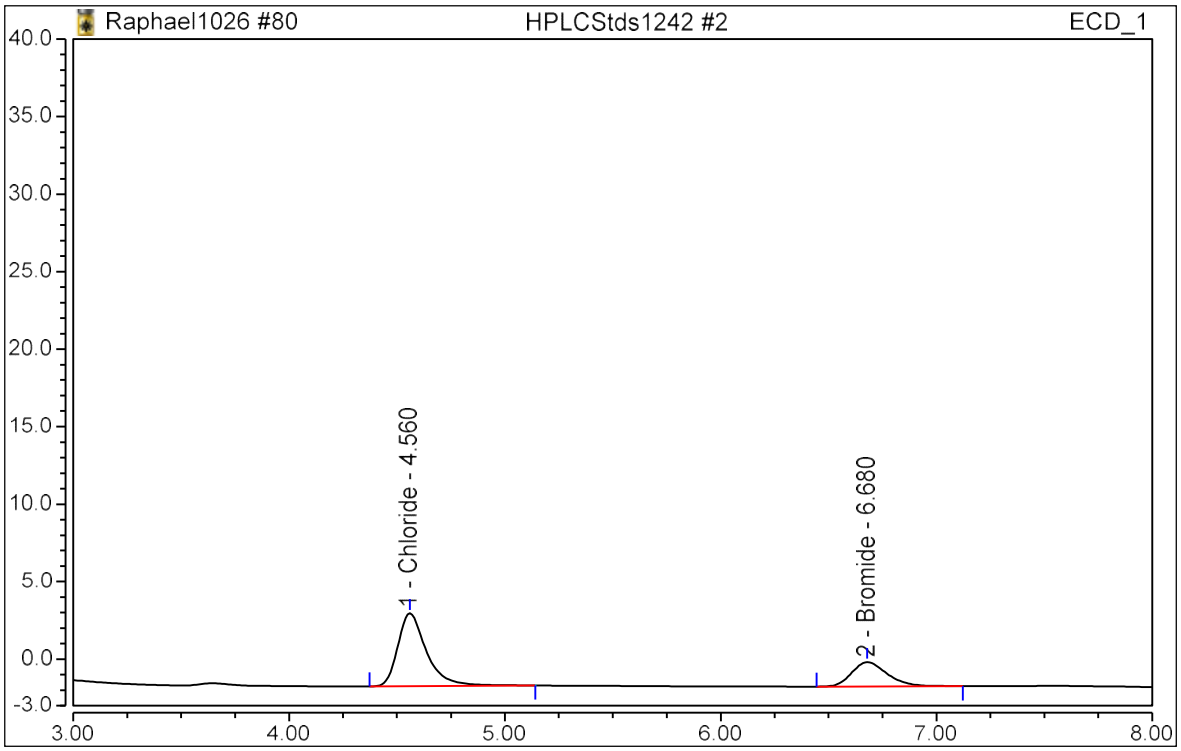
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 05:41**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	1.561	10.148	10.10183	FALSE	FALSE
2	6.68	Bromide	0.630	3.224	10.14090	FALSE	FALSE

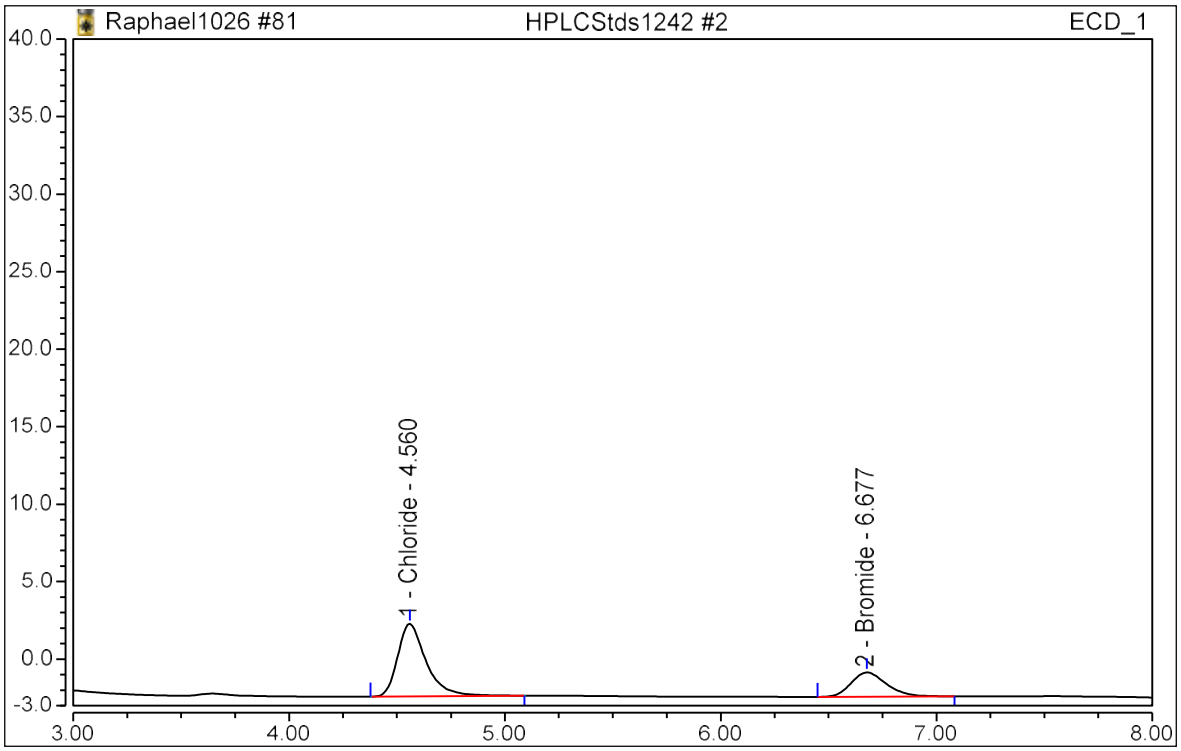
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 06:10**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	0.728	4.713	4.89763	FALSE	FALSE
2	6.68	Bromide	0.303	1.572	5.02732	FALSE	FALSE

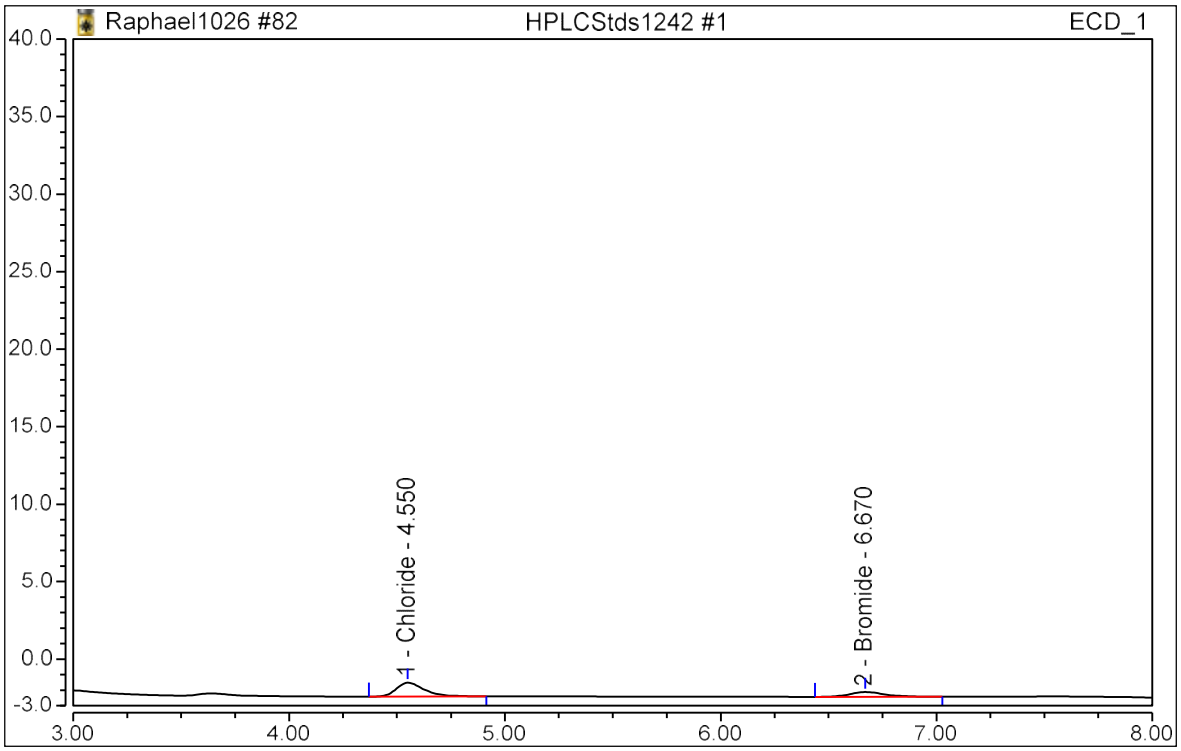
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 06:40**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	0.720	4.695	4.84729	FALSE	FALSE
2	6.68	Bromide	0.300	1.569	4.98573	FALSE	FALSE

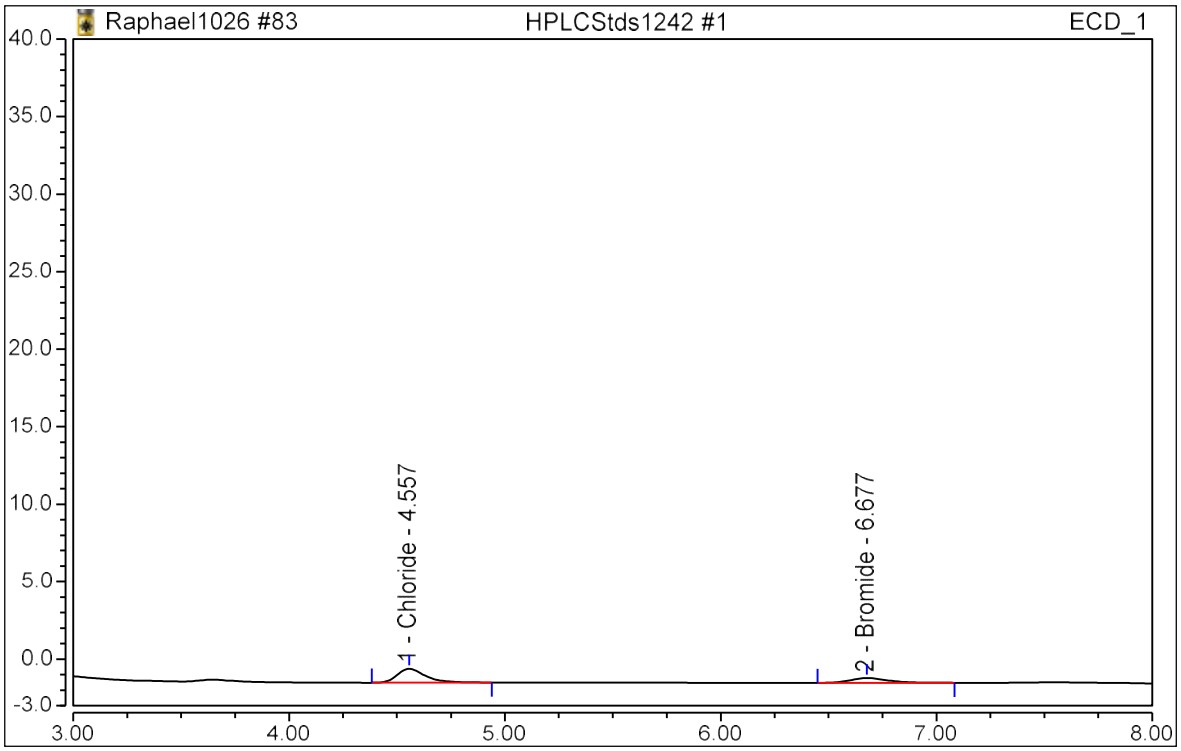
Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 07:10**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.137	0.902	1.01917	FALSE	FALSE
2	6.67	Bromide	0.060	0.312	0.99622	FALSE	FALSE

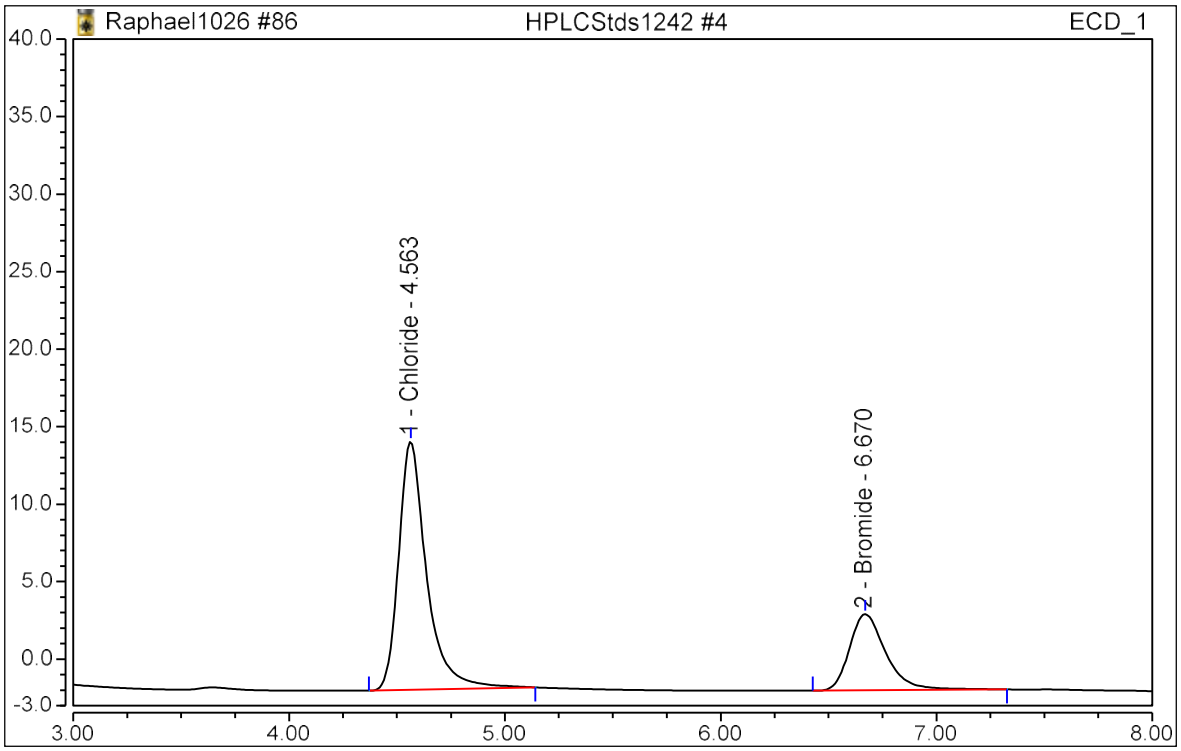
Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 07:39**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	0.137	0.899	1.01727	FALSE	FALSE
2	6.68	Bromide	0.060	0.312	1.00967	FALSE	FALSE

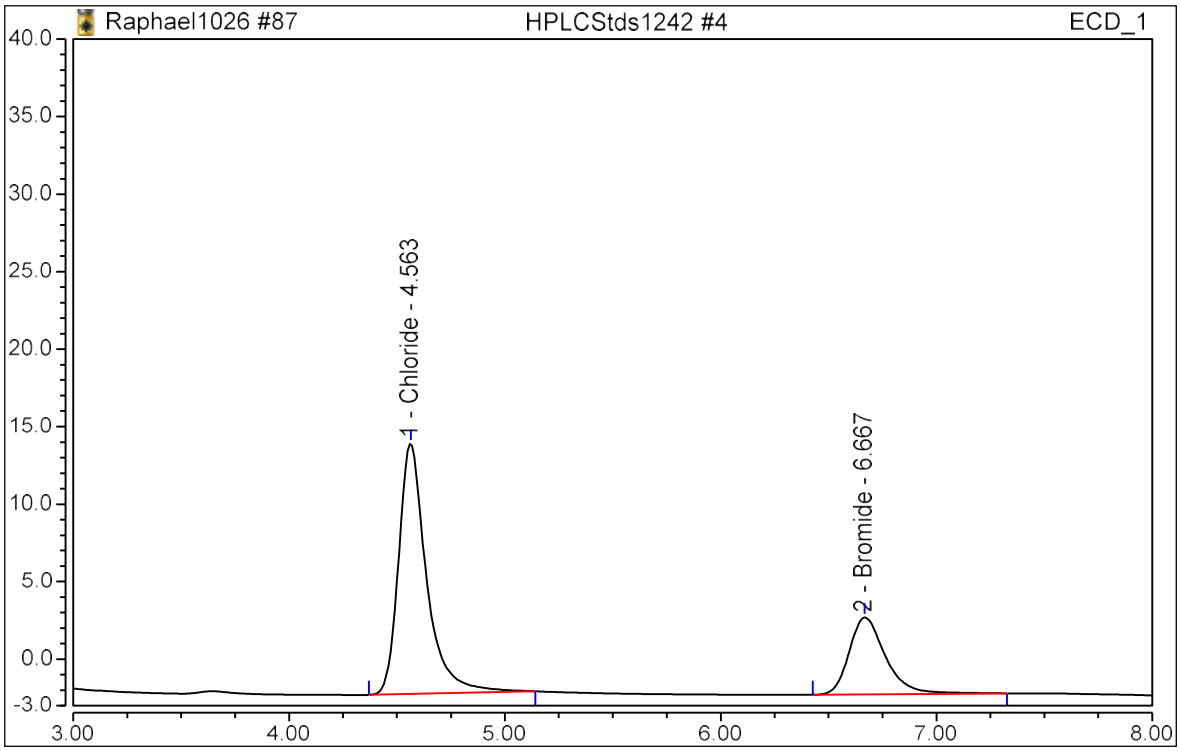
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 12:40**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	2.409	16.025	15.09064	FALSE	FALSE
2	6.67	Bromide	0.963	4.930	14.94309	FALSE	FALSE

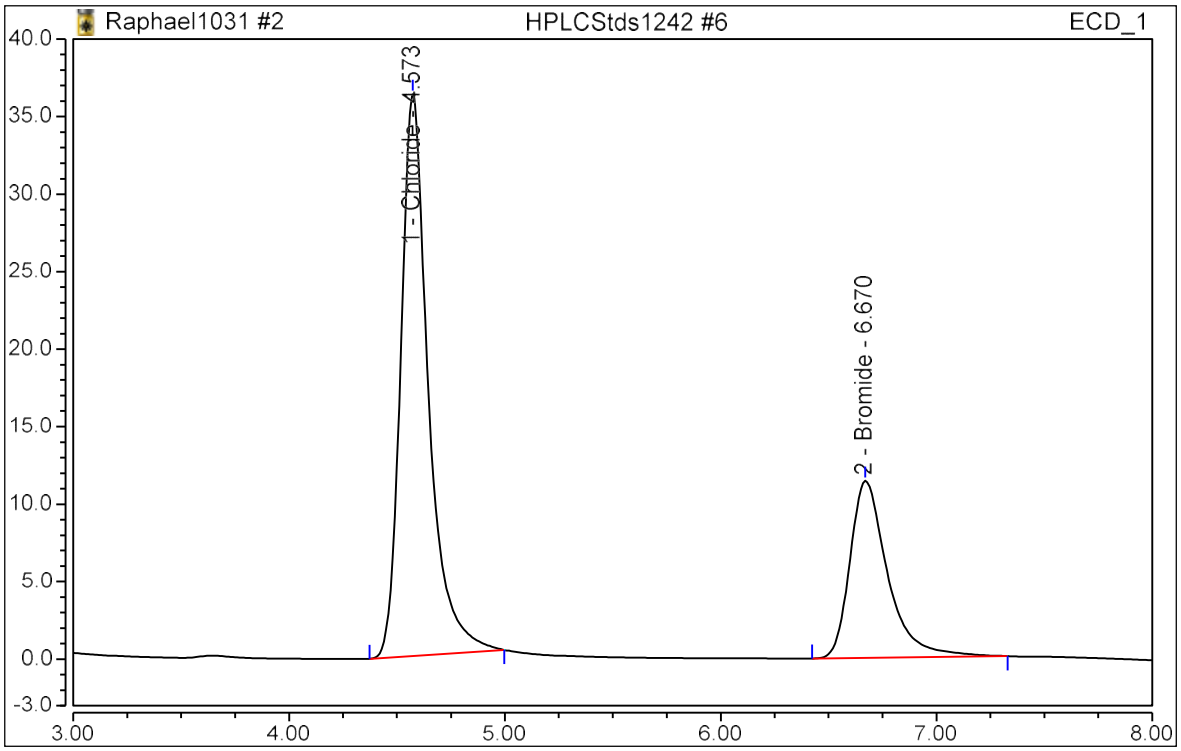
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**30-Dec-2021 / 13:09**	Run Time:	**28.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	2.429	16.156	15.19912	FALSE	FALSE
2	6.67	Bromide	0.969	4.966	15.02608	FALSE	FALSE

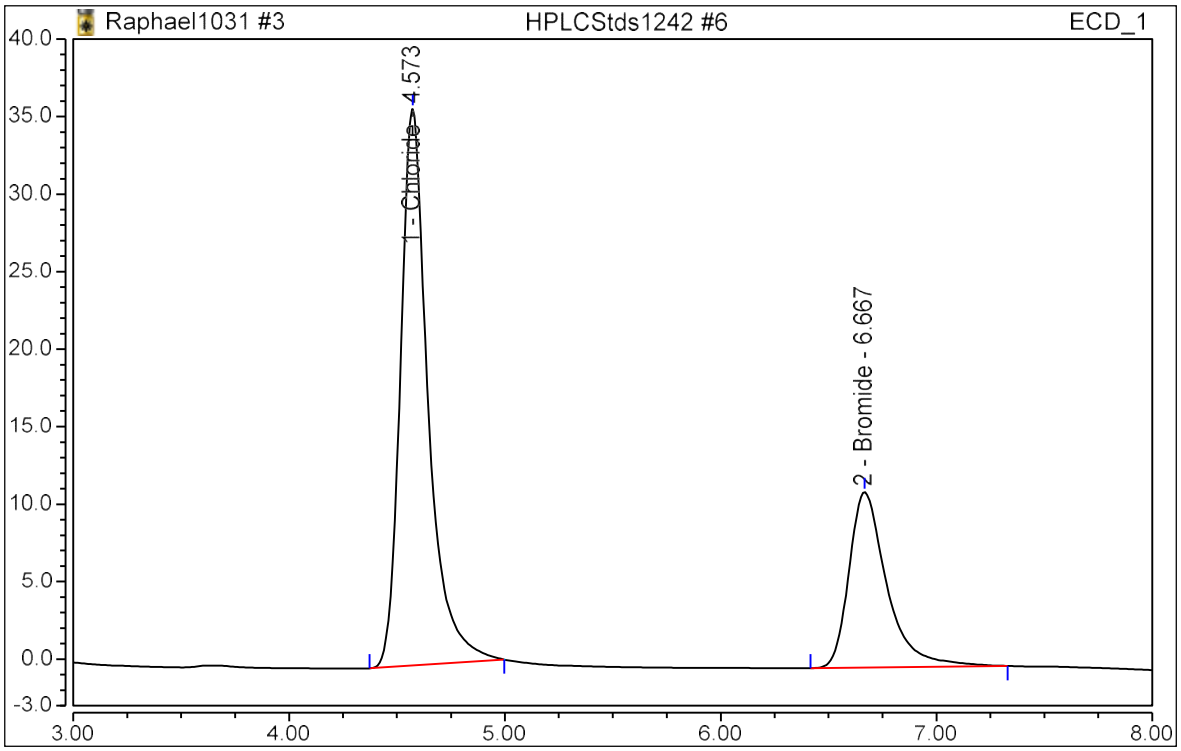
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 15:42**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	5.377	36.250	30.16352	FALSE	FALSE
2	6.67	Bromide	2.314	11.419	30.16186	FALSE	FALSE

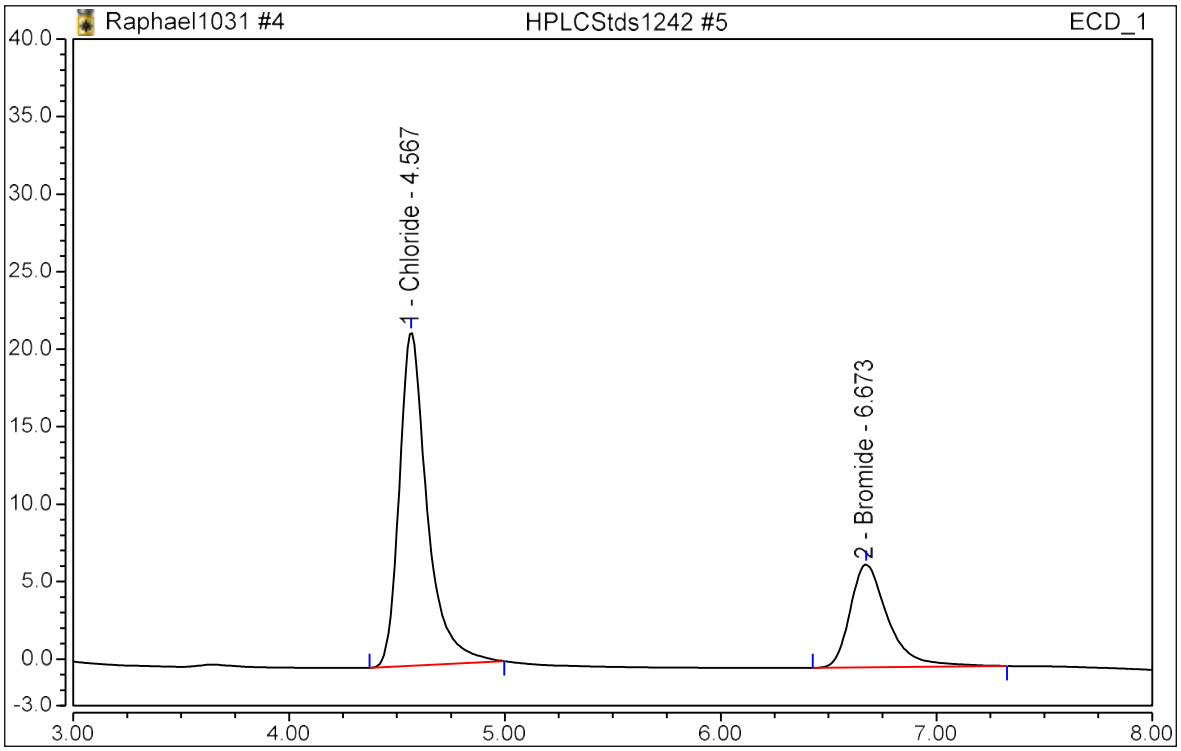
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 16:12**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	5.334	35.906	29.97677	FALSE	FALSE
2	6.67	Bromide	2.302	11.325	30.04307	FALSE	FALSE

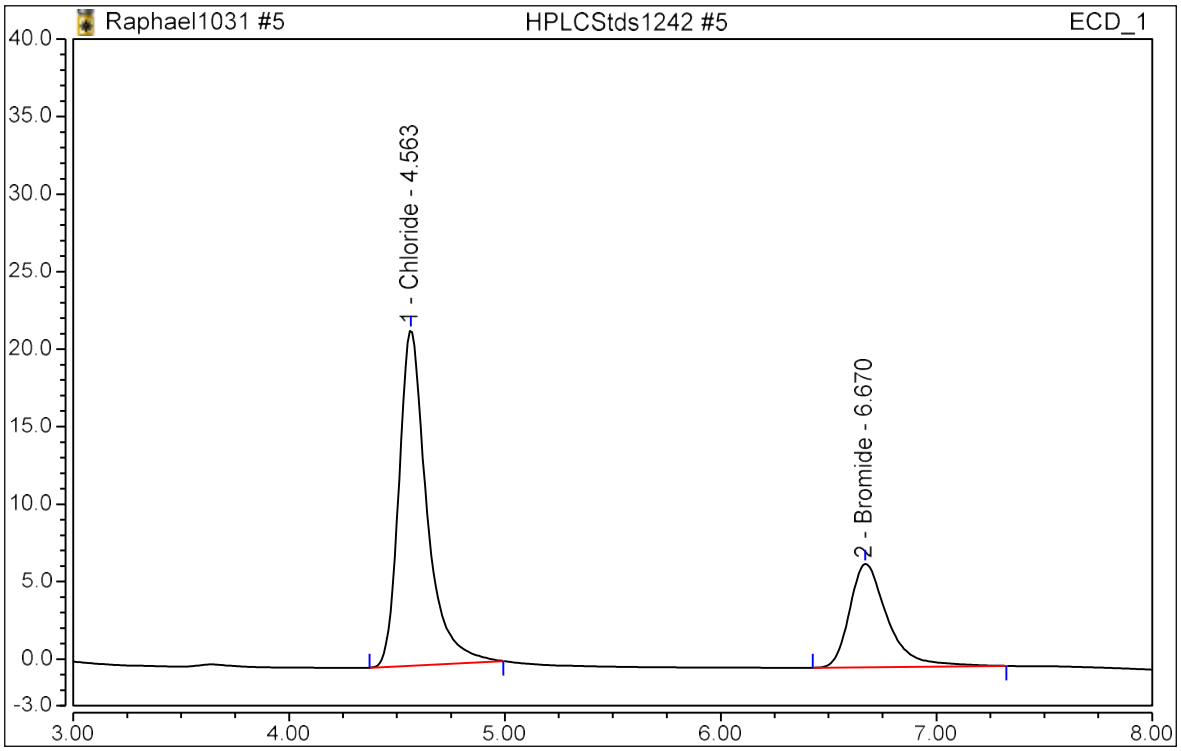
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 16:43**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.57	Chloride	3.229	21.544	19.72094	FALSE	FALSE
2	6.67	Bromide	1.356	6.646	19.71342	FALSE	FALSE

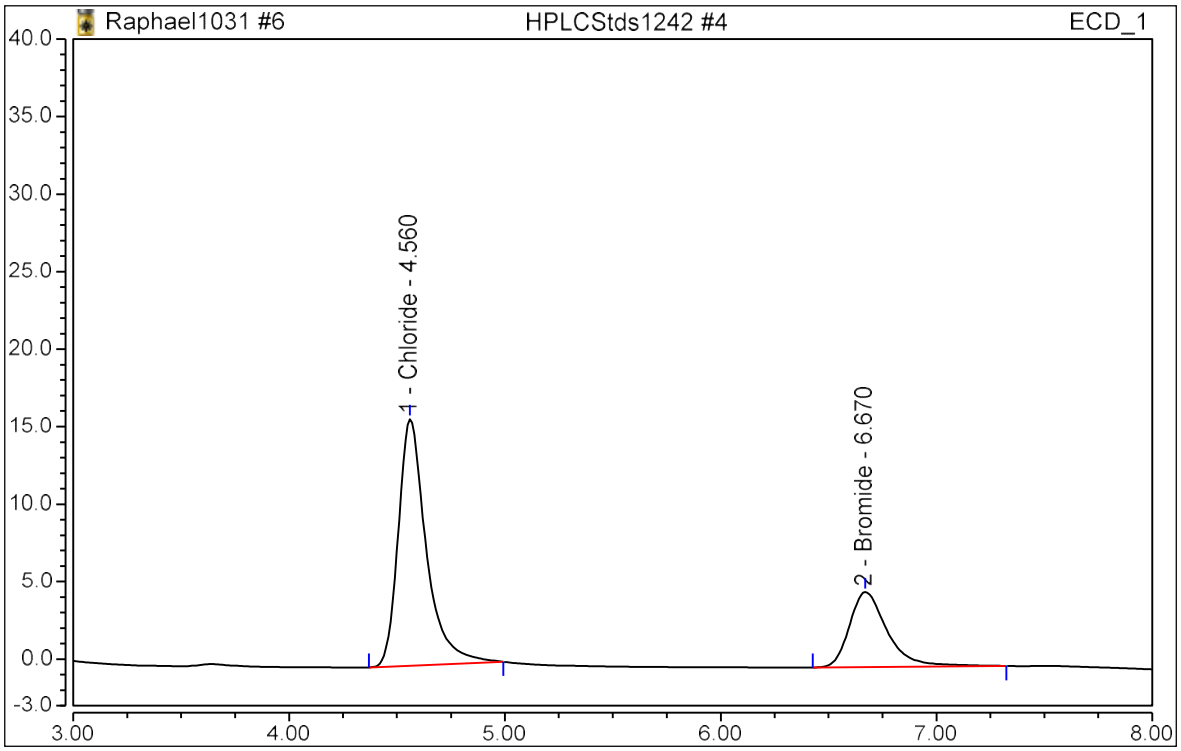
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 17:14**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	3.247	21.663	19.81755	FALSE	FALSE
2	6.67	Bromide	1.362	6.684	19.79072	FALSE	FALSE

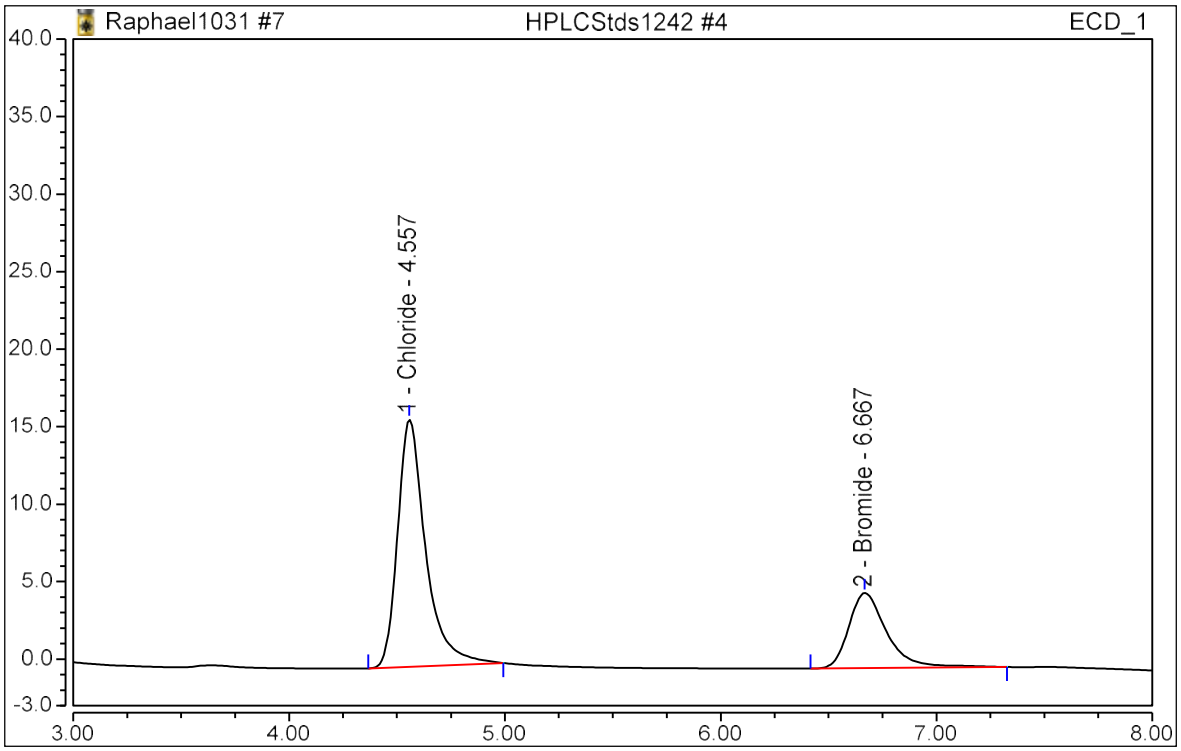
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 17:44**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	2.397	15.916	15.11390	FALSE	FALSE
2	6.67	Bromide	0.987	4.849	14.91898	FALSE	FALSE

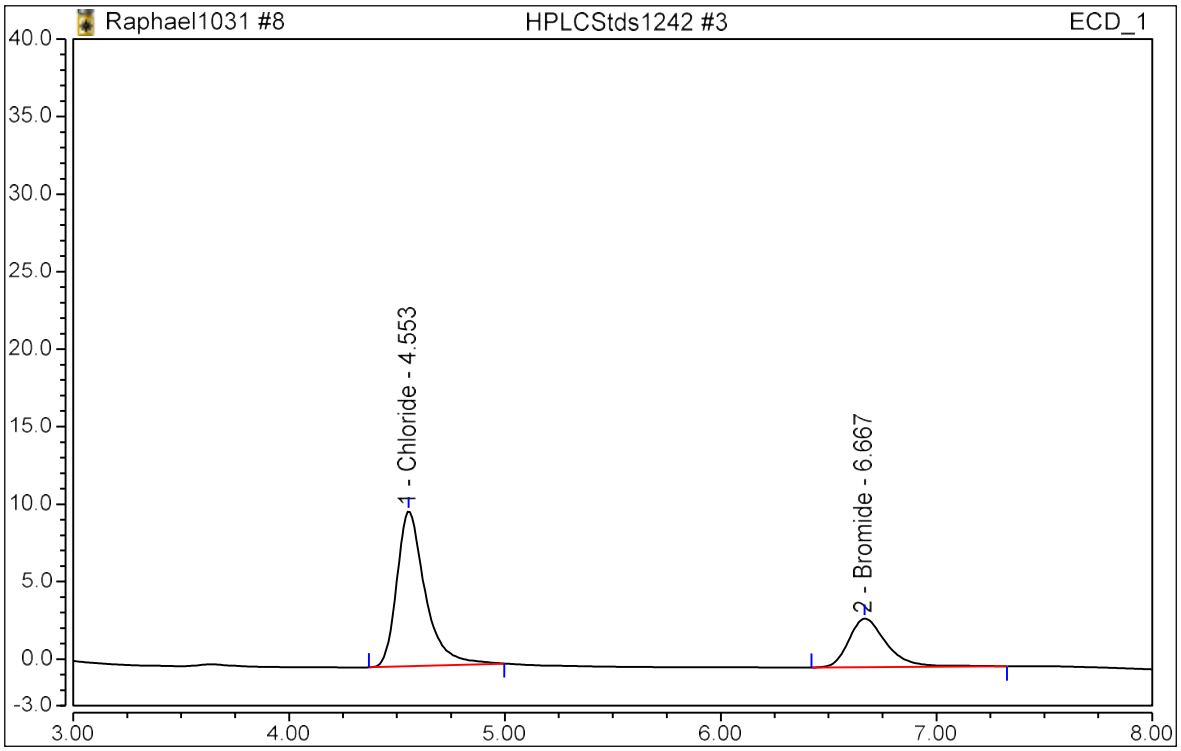
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 18:15**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	2.404	15.960	15.15308	FALSE	FALSE
2	6.67	Bromide	0.990	4.852	14.95998	FALSE	FALSE

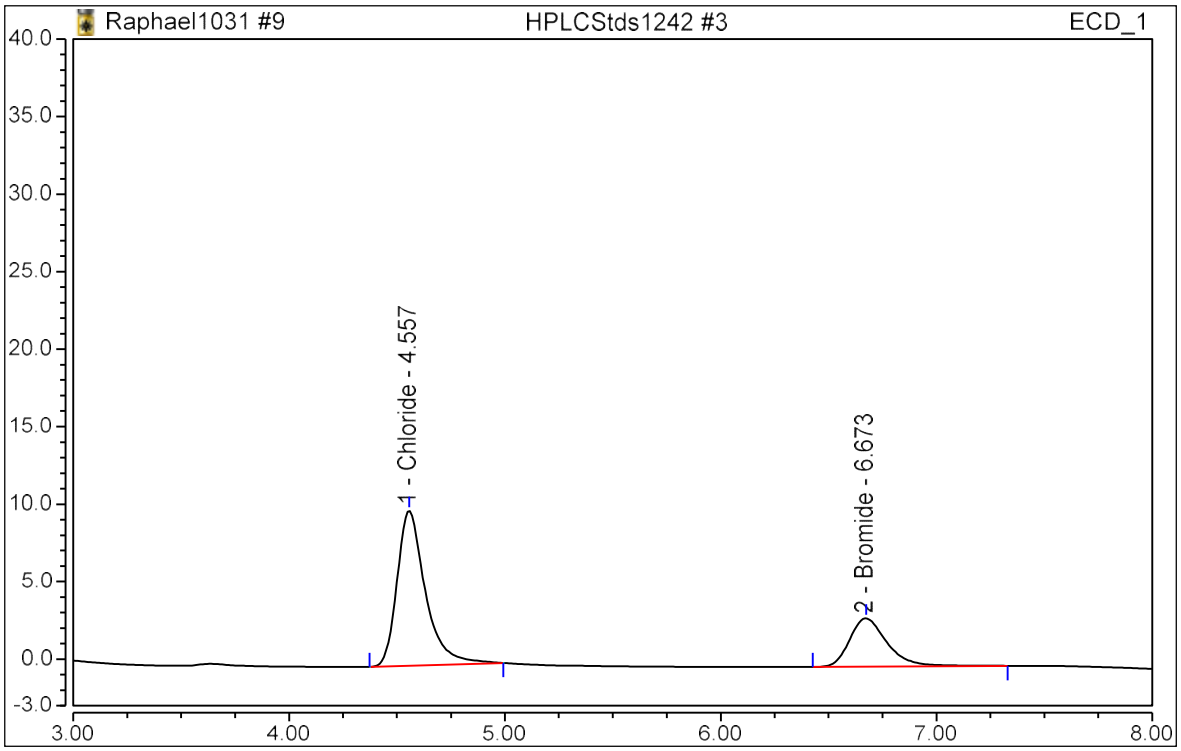
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 18:46**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	1.524	10.003	9.93883	FALSE	FALSE
2	6.67	Bromide	0.638	3.137	9.99465	FALSE	FALSE

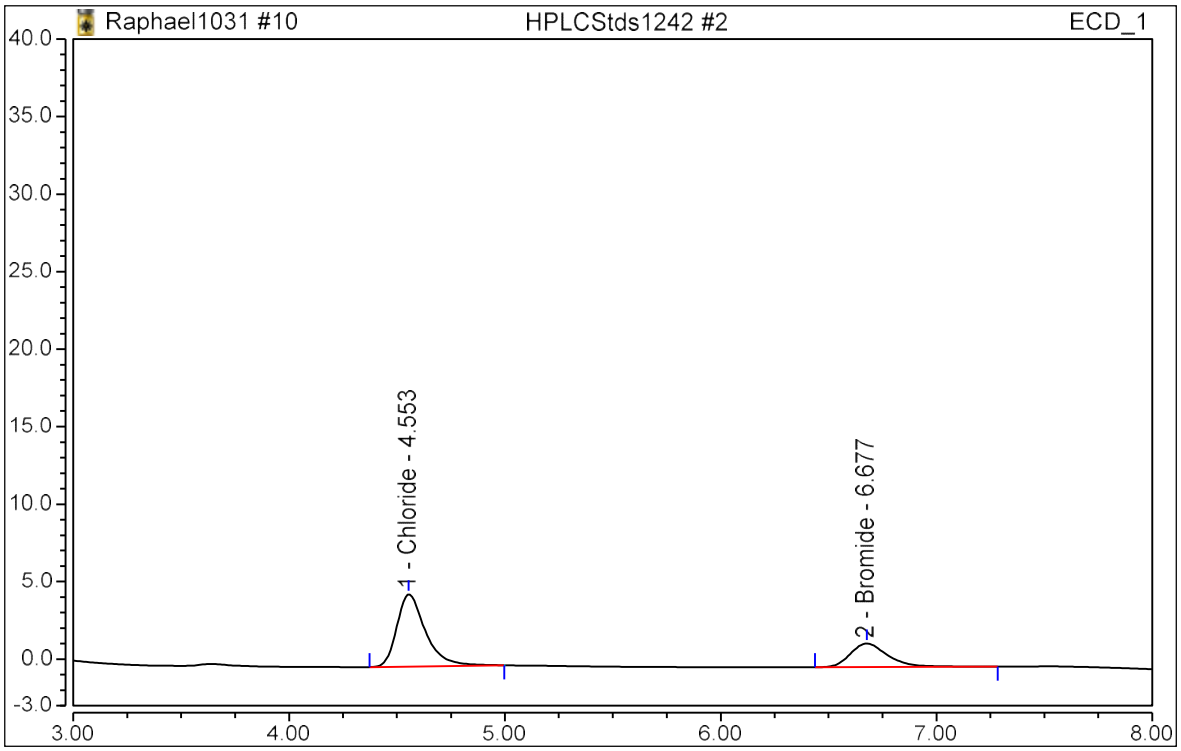
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 19:16**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	1.523	10.002	9.93046	FALSE	FALSE
2	6.67	Bromide	0.639	3.128	9.99942	FALSE	FALSE

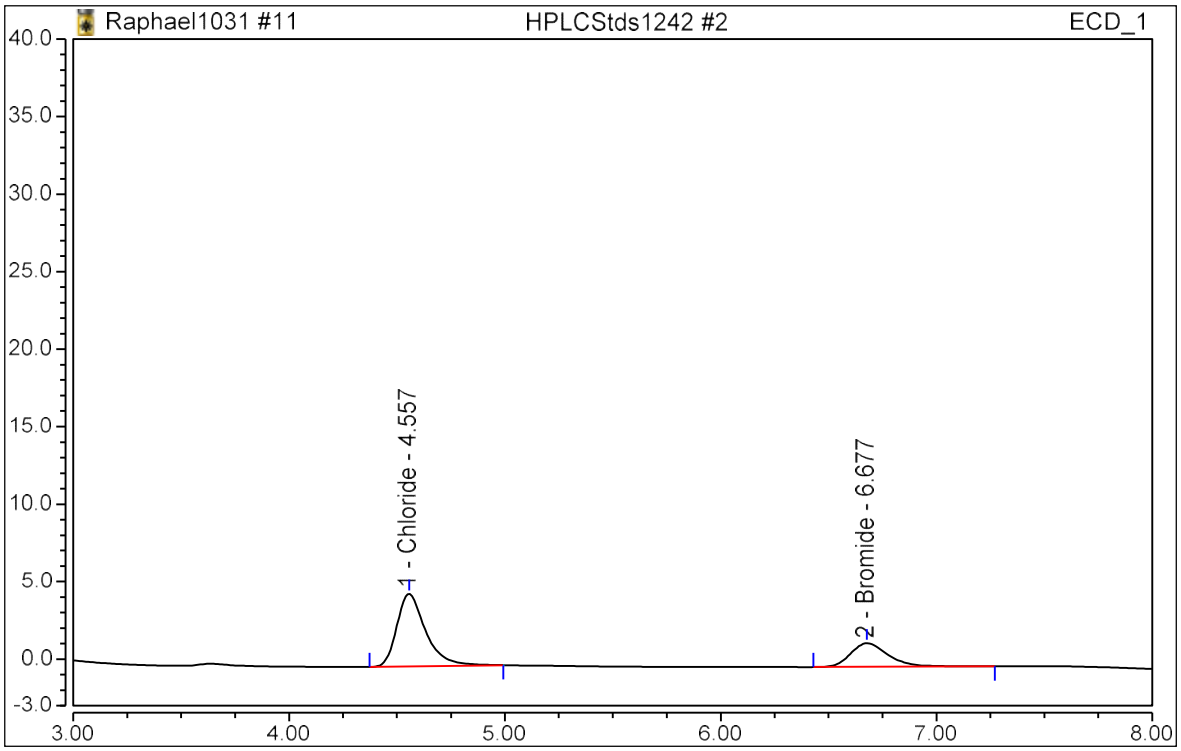
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 19:47**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.717	4.663	4.84651	FALSE	FALSE
2	6.68	Bromide	0.308	1.524	4.97489	FALSE	FALSE

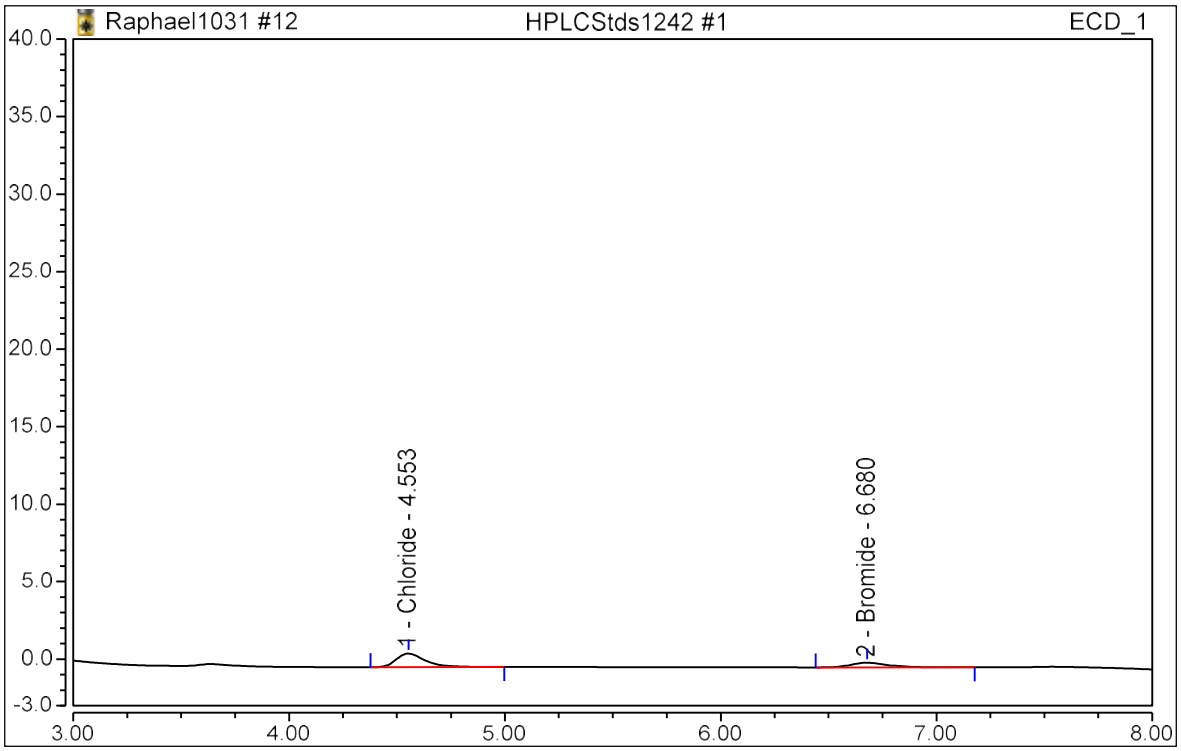
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 20:18**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.56	Chloride	0.725	4.690	4.89580	FALSE	FALSE
2	6.68	Bromide	0.311	1.531	5.01368	FALSE	FALSE

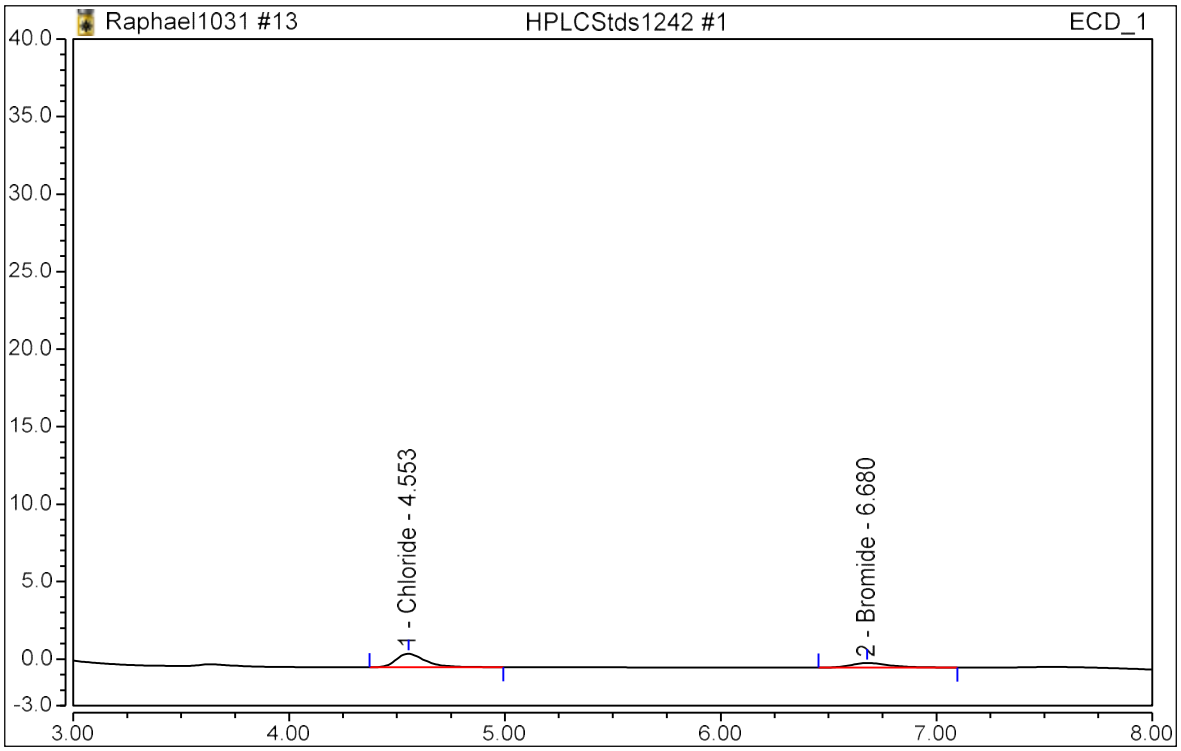
Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 20:48**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.138	0.884	1.00621	FALSE	FALSE
2	6.68	Bromide	0.061	0.301	0.99494	FALSE	FALSE

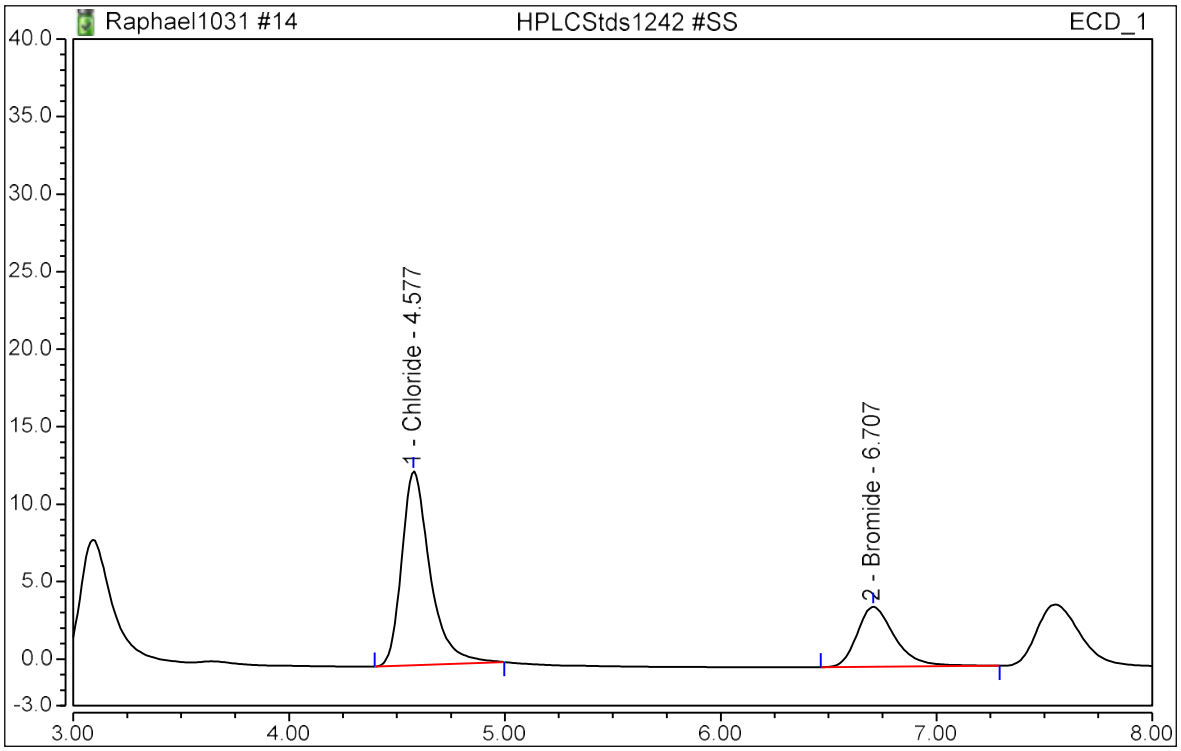
Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 21:19**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.138	0.882	1.00453	FALSE	FALSE
2	6.68	Bromide	0.060	0.299	0.97779	FALSE	FALSE

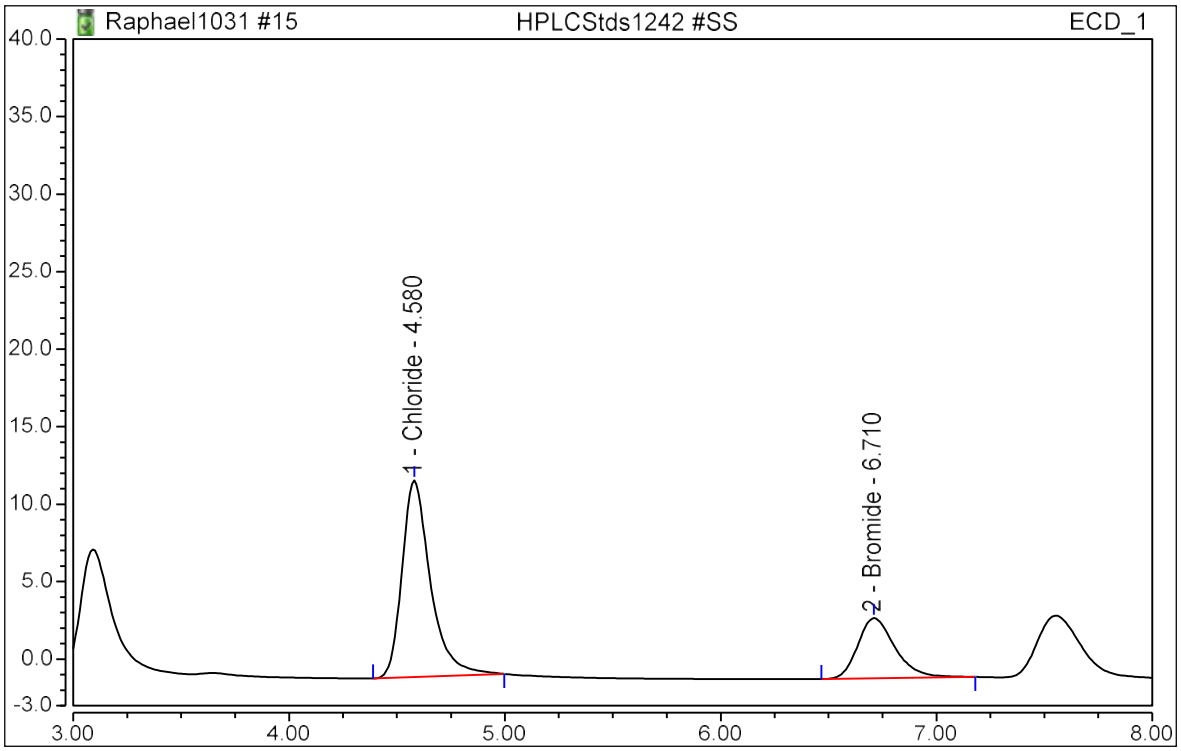
Sample Name:	**HPLCStds1242 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 21:50**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	1.910	12.519	12.26650	FALSE	FALSE
2	6.71	Bromide	0.786	3.869	12.12026	FALSE	FALSE

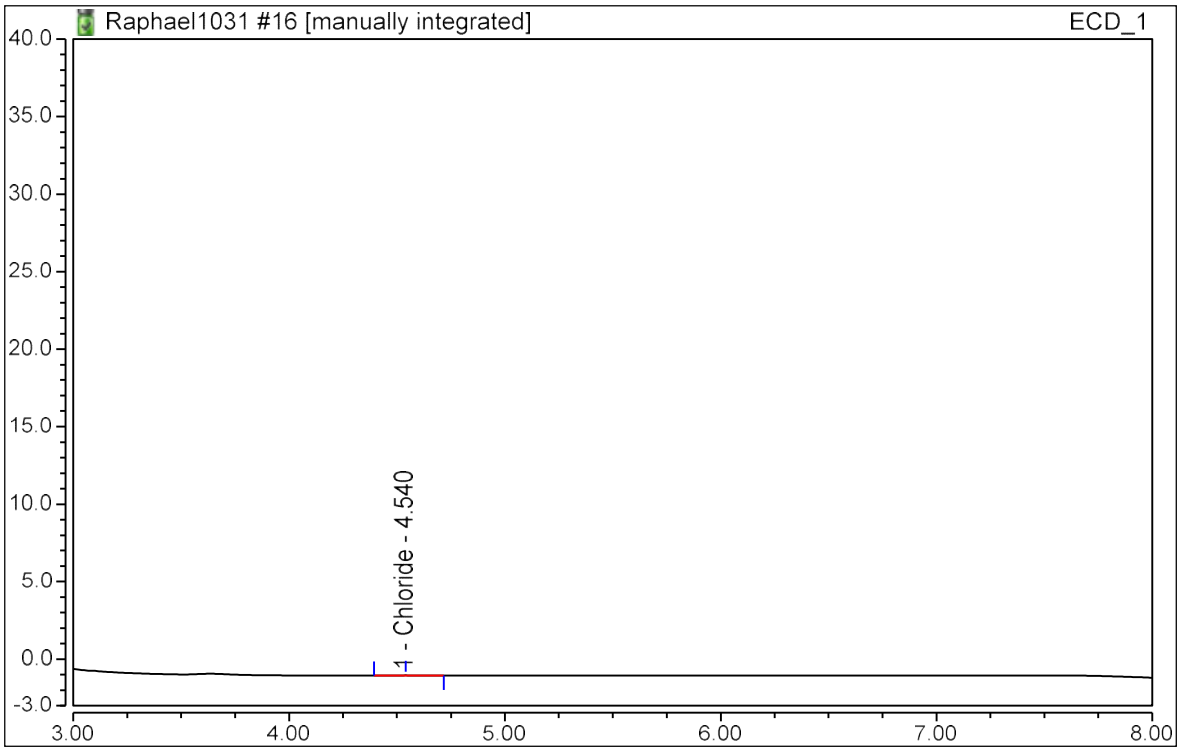
Sample Name:	**HPLCStds1242 #SS**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 22:20**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	1.939	12.684	12.44447	FALSE	FALSE
2	6.71	Bromide	0.779	3.891	12.02428	FALSE	FALSE

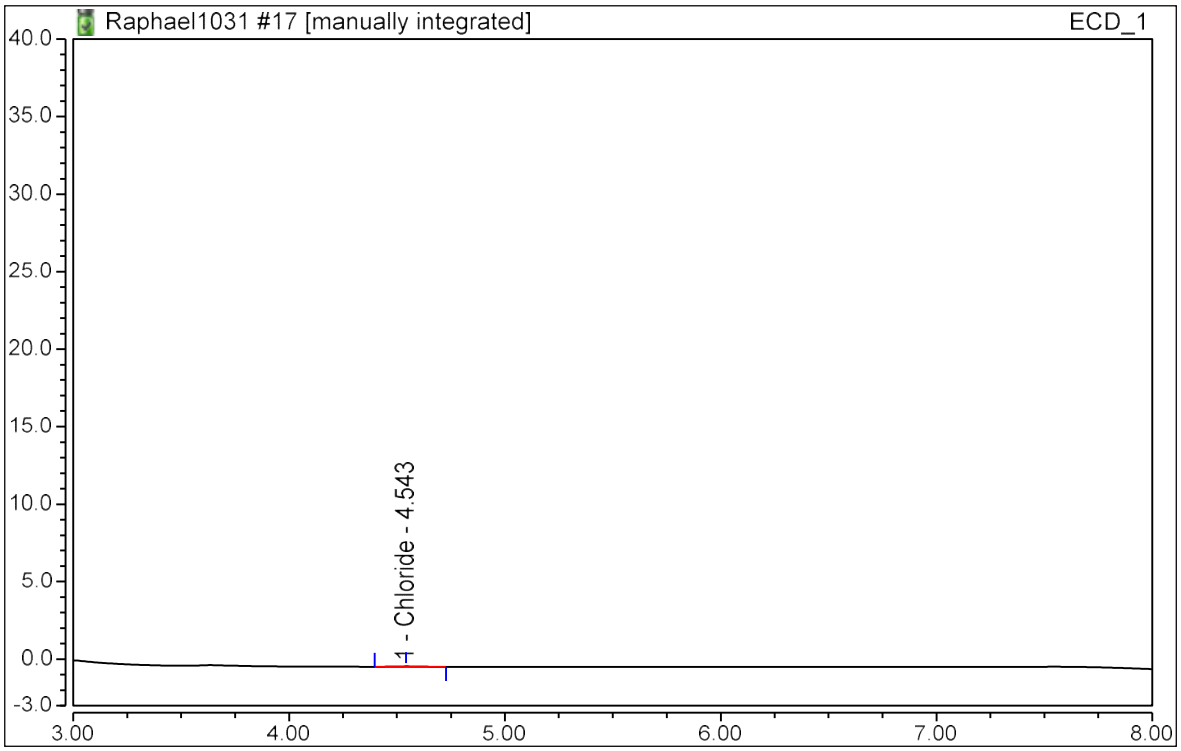
Sample Name:	**HPLCStds1242 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 22:51**	Run Time:	**29.00**



Analyst Comment: NI PRM 1/6/22

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.54	Chloride	0.003	0.024	0.08872	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

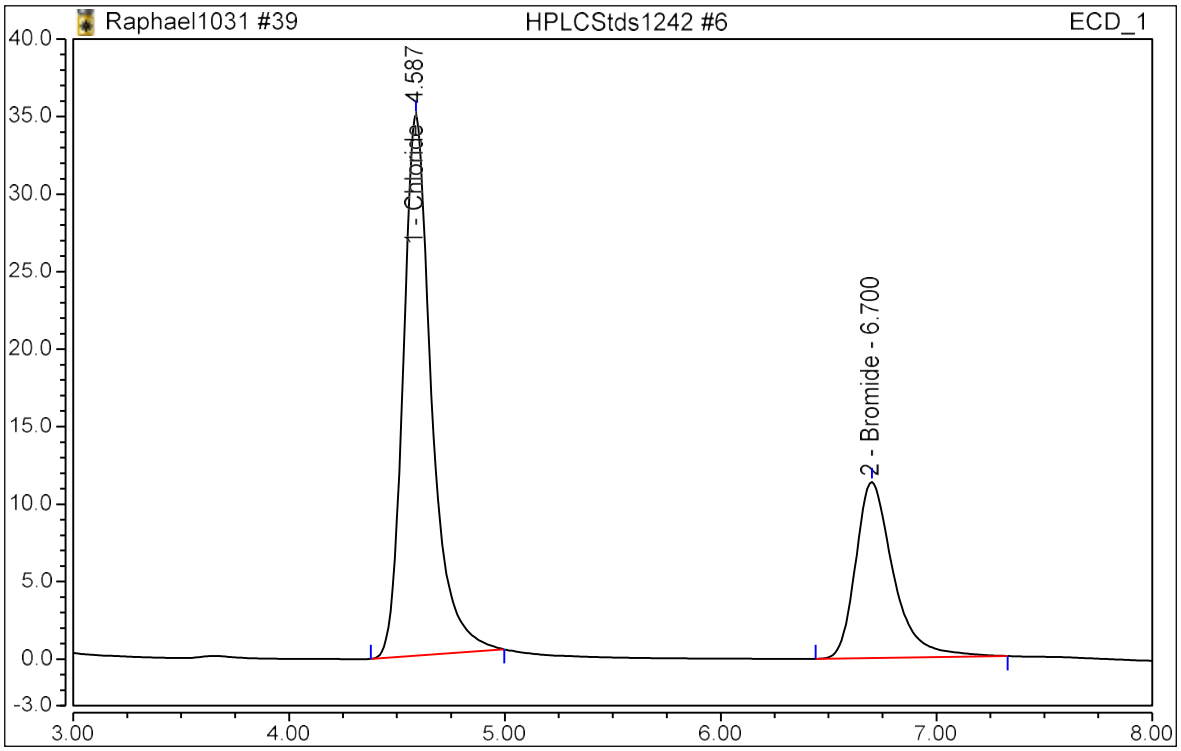
Sample Name:	**HPLCStds1242 #RB**	Injection Volume:	**25.00**
Injection Type:	**Check Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**04-Jan-2022 / 23:22**	Run Time:	**29.00**



Analyst Comment: NI PRM 1/6/22

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.54	Chloride	0.003	0.023	0.08813	FALSE	TRUE
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.

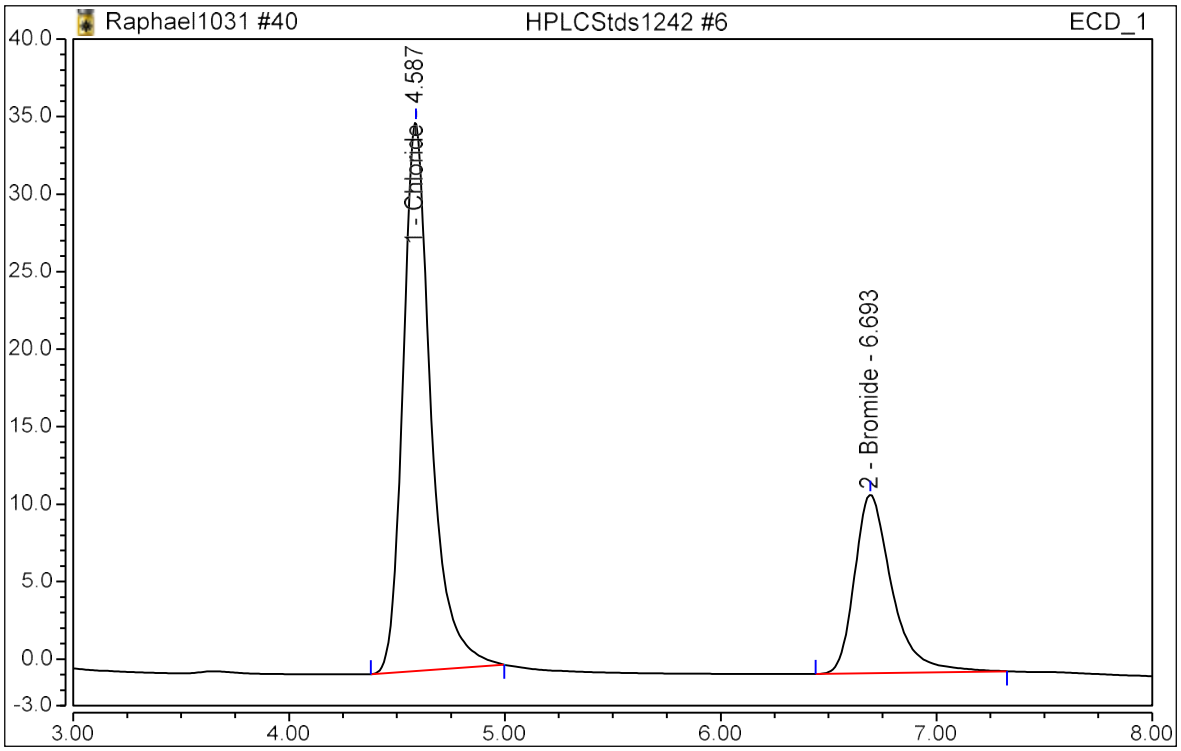
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 10:37**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.59	Chloride	5.329	34.908	29.95414	FALSE	FALSE
2	6.70	Bromide	2.300	11.355	30.02569	FALSE	FALSE

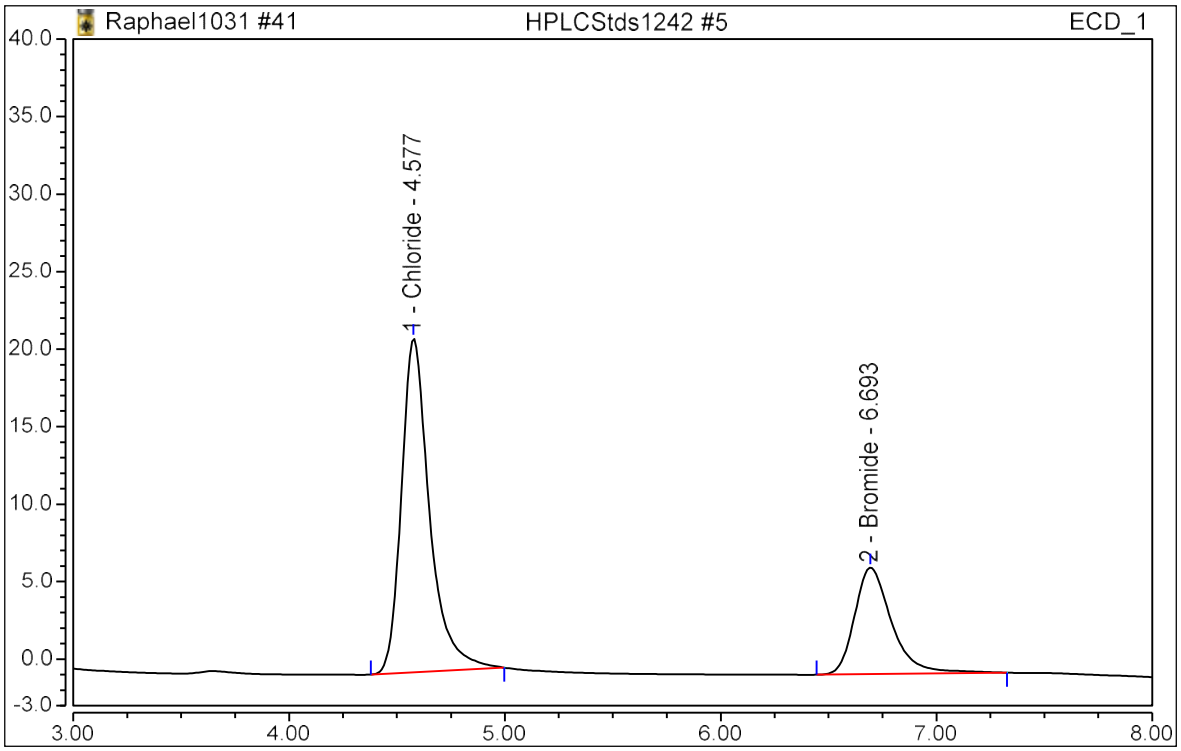
Sample Name:	**HPLCStds1242 #6**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 11:07**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.59	Chloride	5.341	35.381	30.00661	FALSE	FALSE
2	6.69	Bromide	2.308	11.511	30.10104	FALSE	FALSE

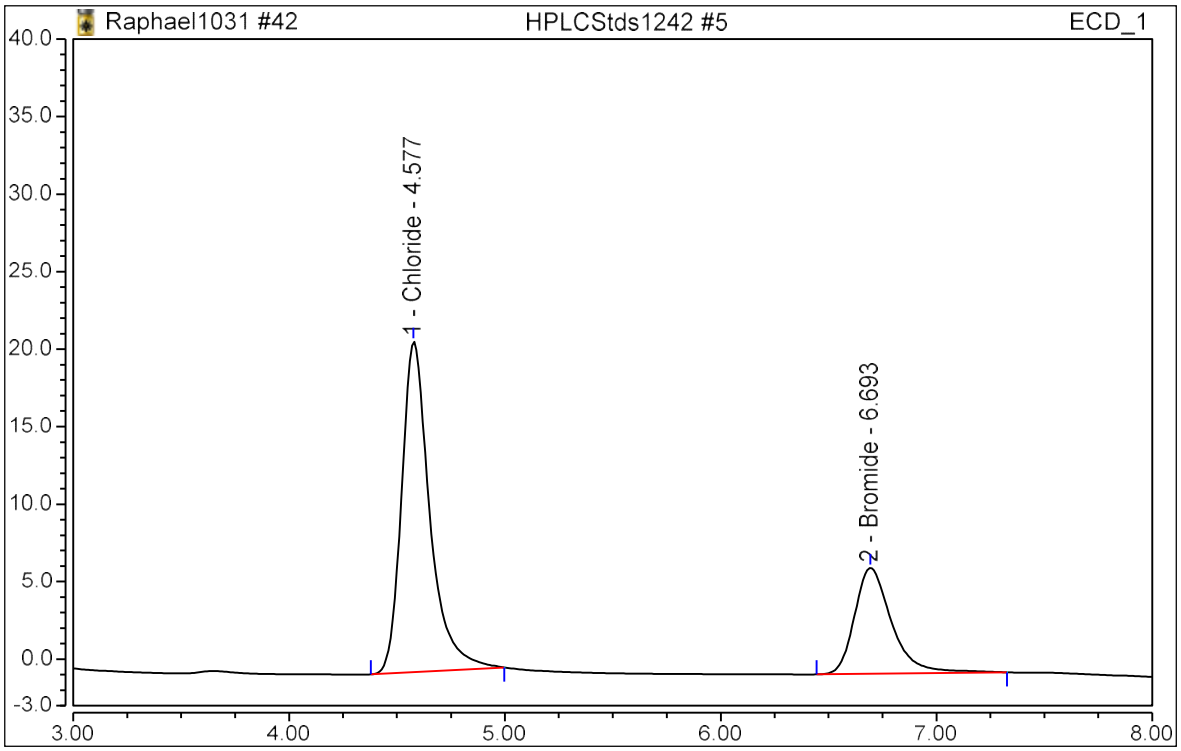
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 11:38**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	3.262	21.552	19.89746	FALSE	FALSE
2	6.69	Bromide	1.368	6.866	19.86114	FALSE	FALSE

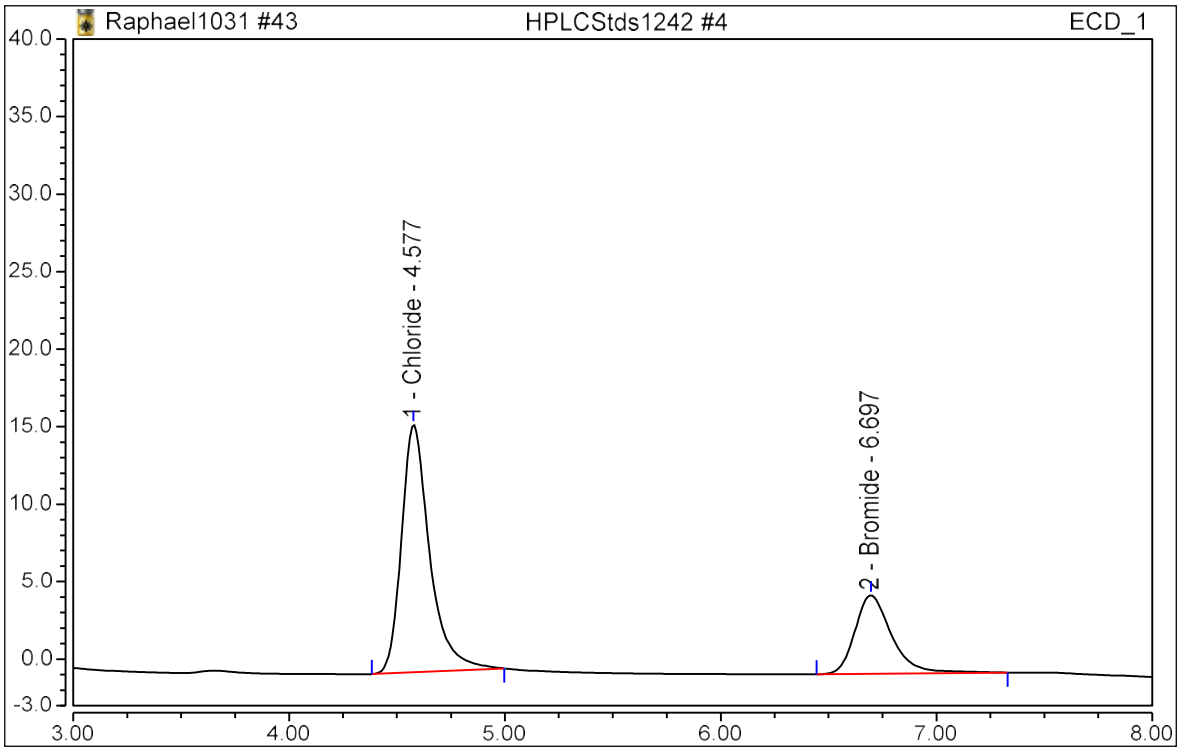
Sample Name:	**HPLCStds1242 #5**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 12:09**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	3.237	21.313	19.76836	FALSE	FALSE
2	6.69	Bromide	1.362	6.830	19.79289	FALSE	FALSE

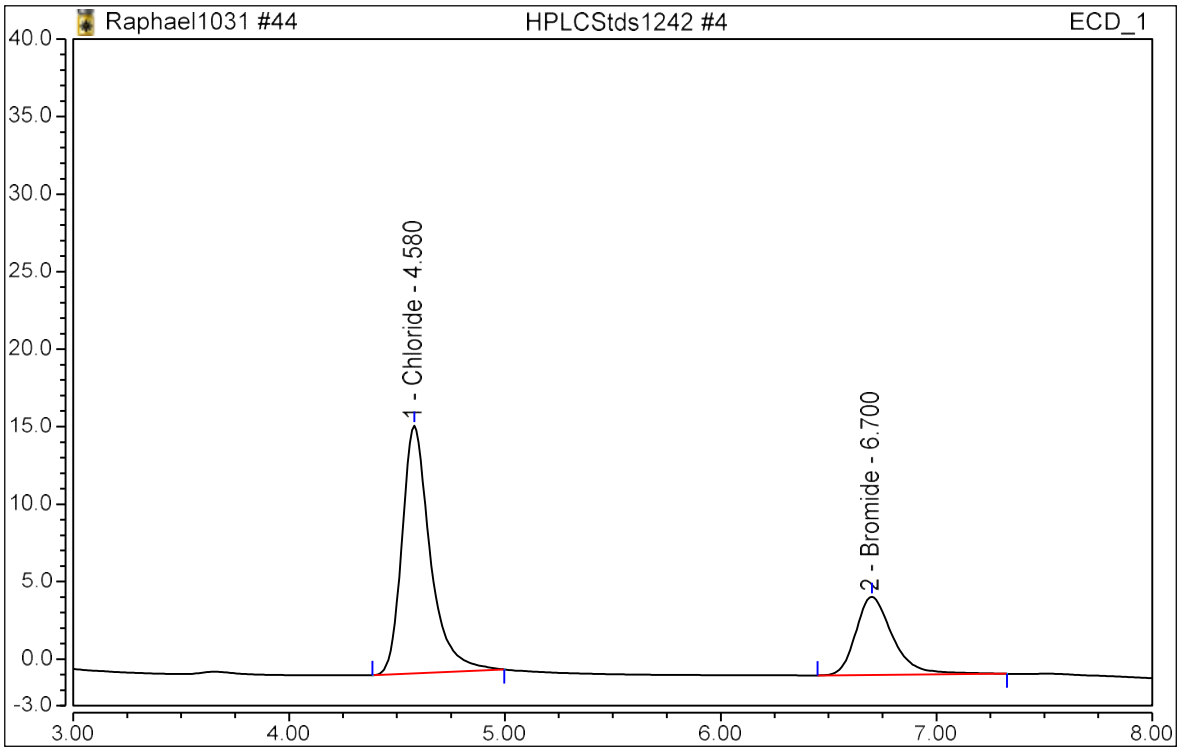
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 12:39**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	2.422	15.972	15.25739	FALSE	FALSE
2	6.70	Bromide	0.997	5.050	15.05839	FALSE	FALSE

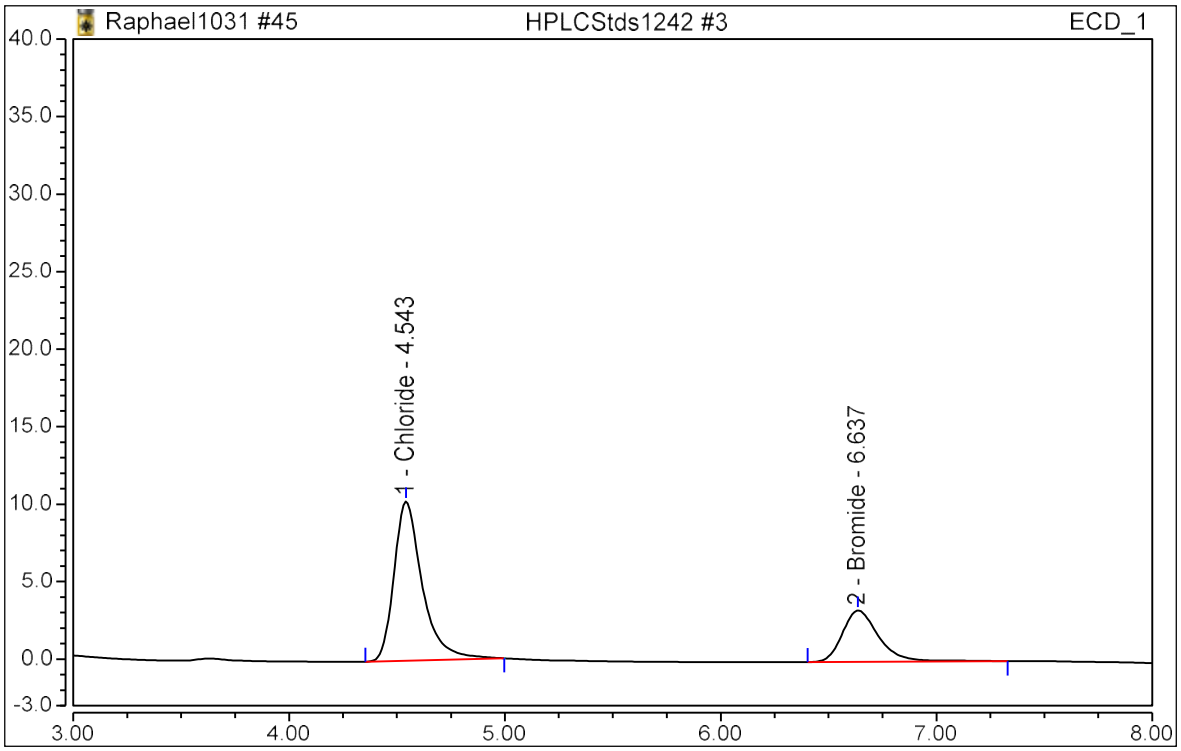
Sample Name:	**HPLCStds1242 #4**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 13:10**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.58	Chloride	2.421	15.977	15.25379	FALSE	FALSE
2	6.70	Bromide	0.995	5.033	15.02913	FALSE	FALSE

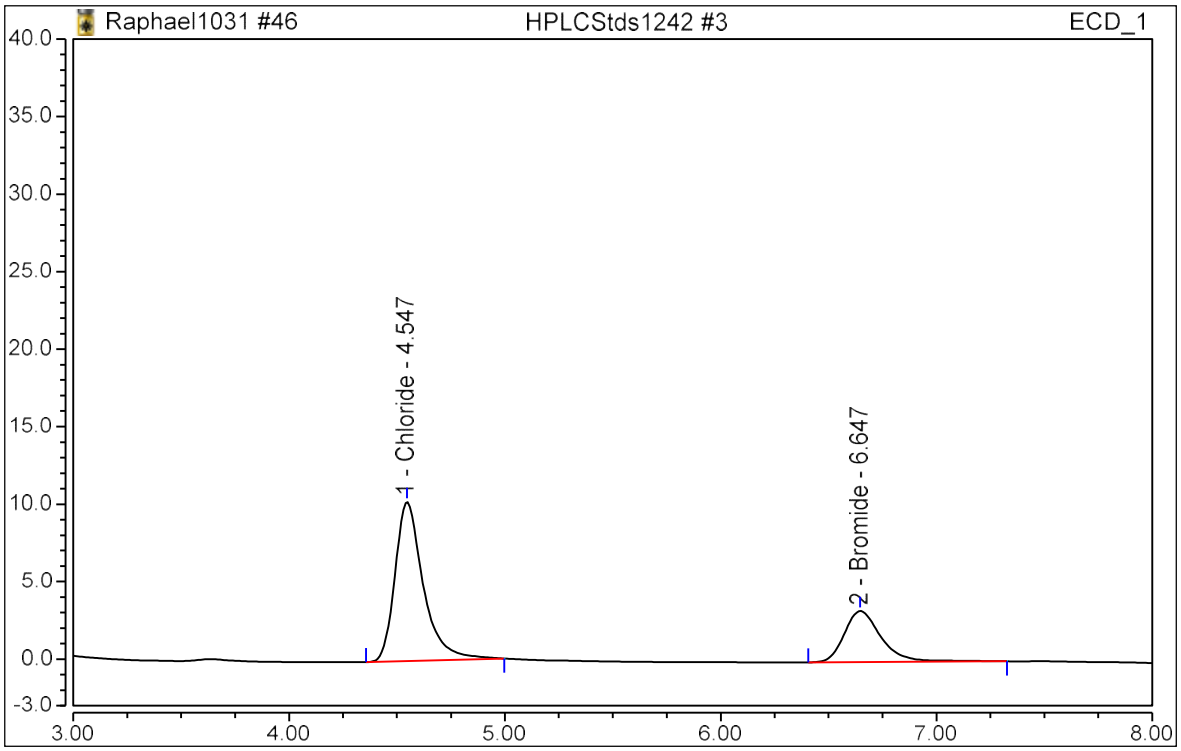
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 14:05**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.54	Chloride	1.564	10.283	10.18446	FALSE	FALSE
2	6.64	Bromide	0.654	3.314	10.22722	FALSE	FALSE

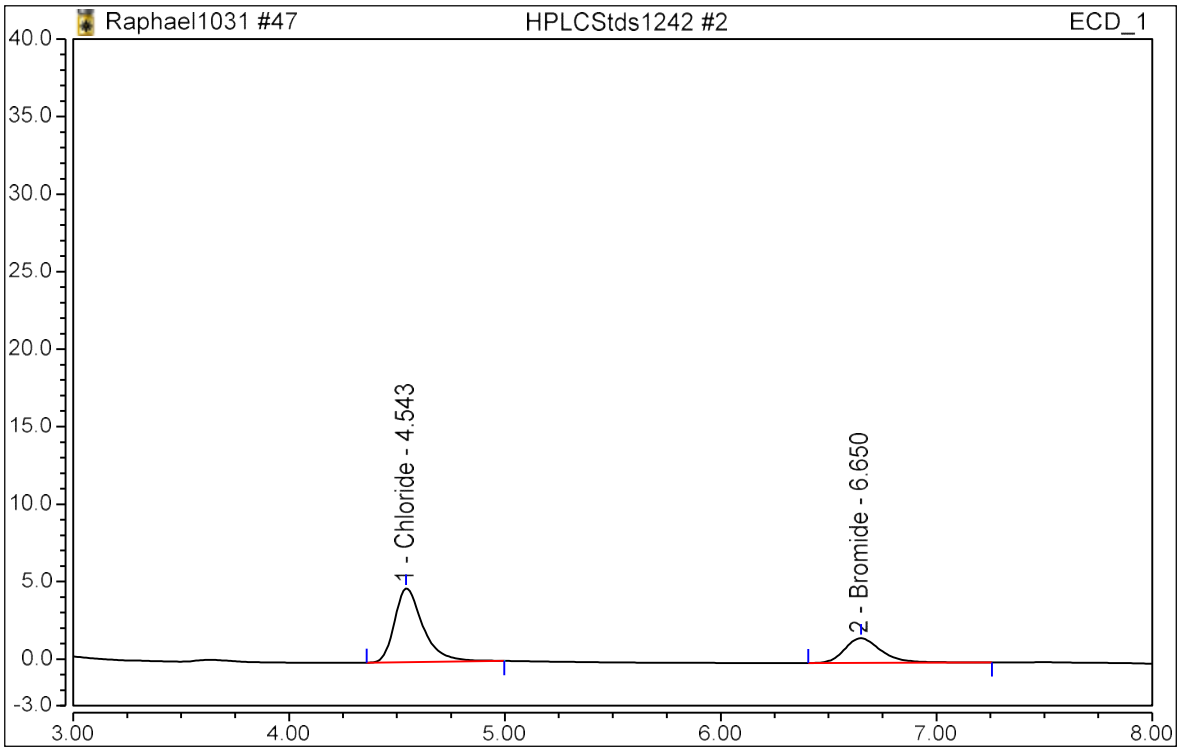
Sample Name:	**HPLCStds1242 #3**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 14:35**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	1.562	10.278	10.16818	FALSE	FALSE
2	6.65	Bromide	0.654	3.298	10.22442	FALSE	FALSE

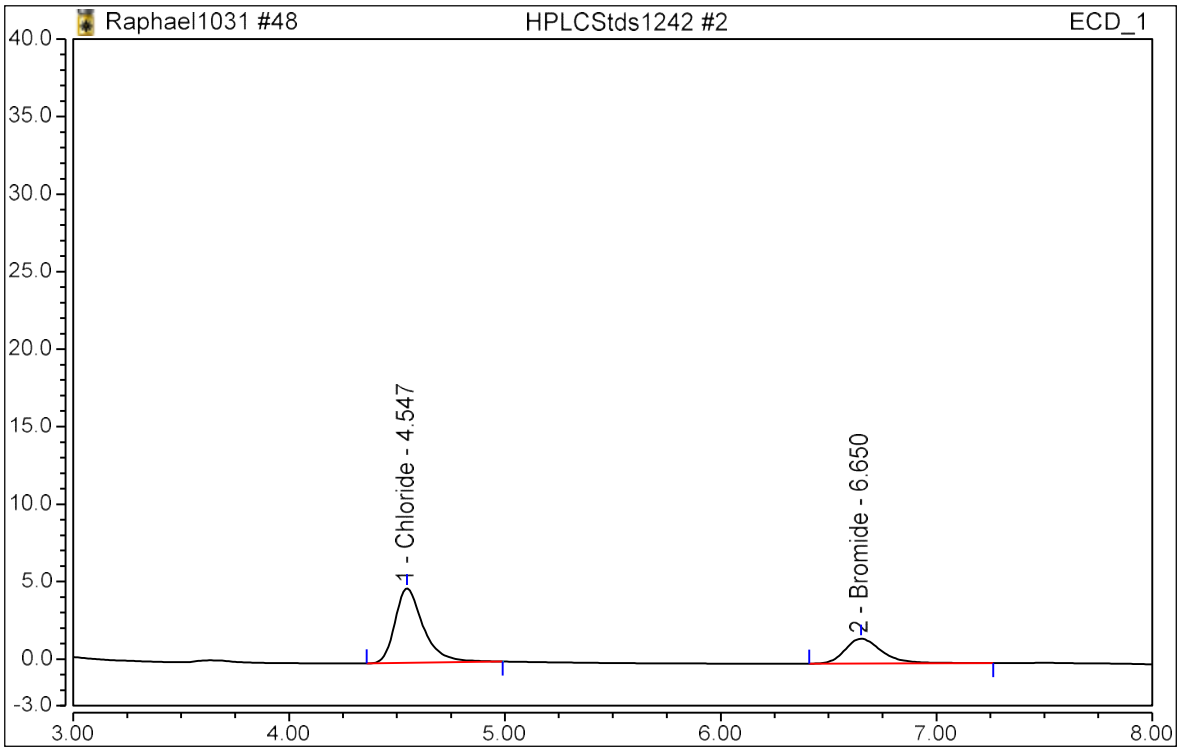
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 15:06**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.54	Chloride	0.730	4.770	4.93100	FALSE	FALSE
2	6.65	Bromide	0.312	1.595	5.04021	FALSE	FALSE

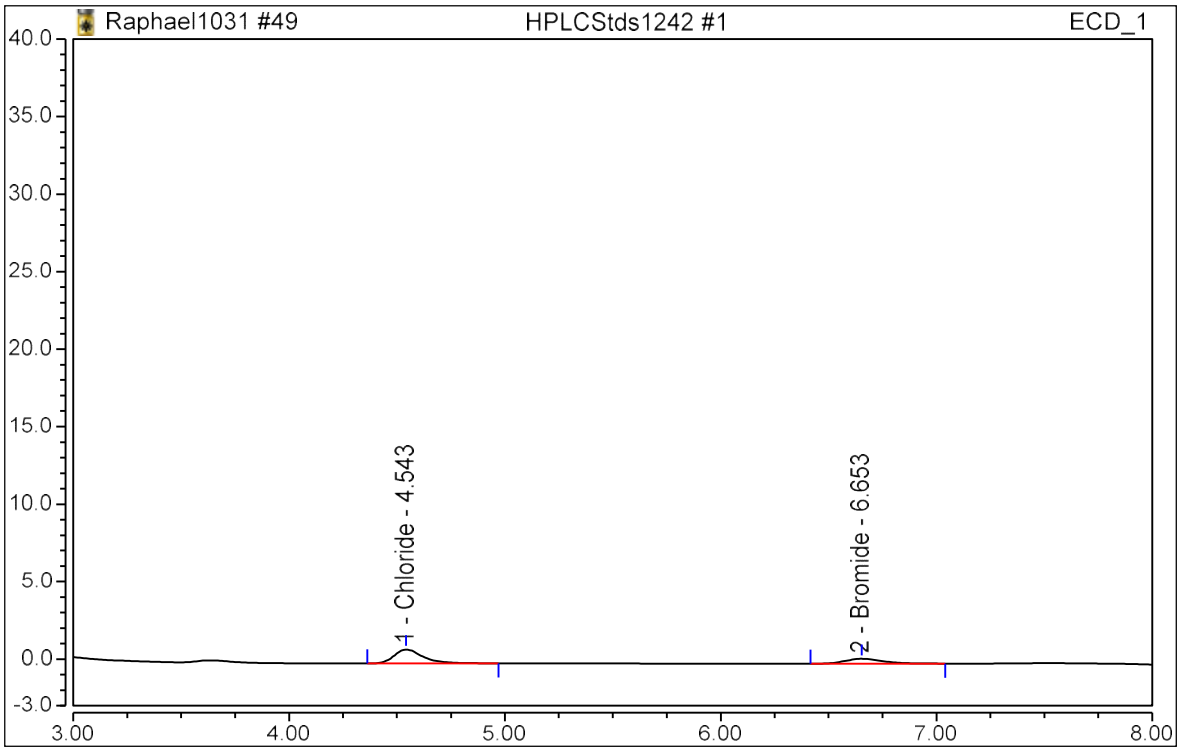
Sample Name:	**HPLCStds1242 #2**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 15:37**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.733	4.813	4.94591	FALSE	FALSE
2	6.65	Bromide	0.315	1.606	5.07786	FALSE	FALSE

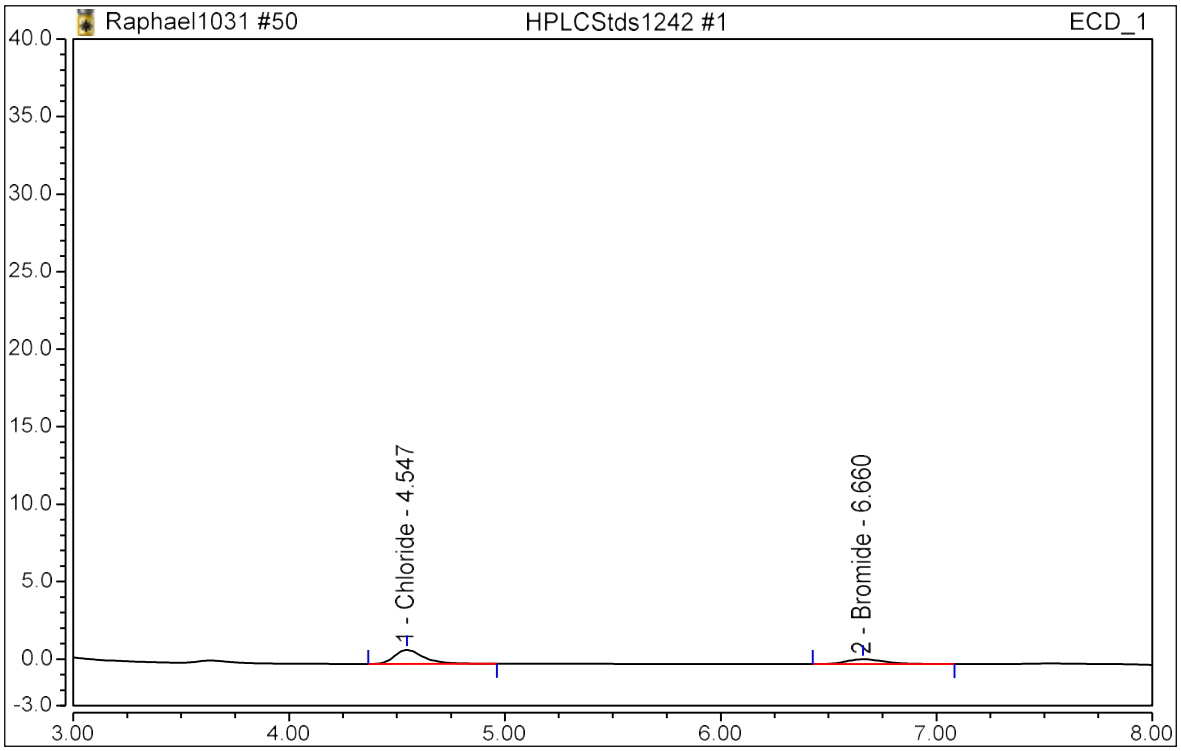
Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 16:07**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.54	Chloride	0.139	0.907	1.01354	FALSE	FALSE
2	6.65	Bromide	0.061	0.317	0.99492	FALSE	FALSE

Sample Name:	**HPLCStds1242 #1**	Injection Volume:	**25.00**
Injection Type:	**Calibration Standard**	Dilution Factor:	**1.0**
Instrument Method:	**AS22 ASAP Base**	Operator:	**PMann**
Inj. Date / Time:	**05-Jan-2022 / 16:38**	Run Time:	**29.00**



Analyst Comment:

No.	Time min	Peak Name	Area µS*min	Height µS	Conc µg/mL	Manually Assigned?	Manipulated?
1	4.55	Chloride	0.139	0.904	1.01423	FALSE	FALSE
2	6.66	Bromide	0.061	0.314	0.99973	FALSE	FALSE

This Is The Last Page Of This Report.

Appendix C.2
Ammonia Analyses

MONTROSE
AIR QUALITY SERVICES

AMMONIA RESULTS
Client: Covanta Marion Inc
Project: PROJ - 010935

NH_3 Calibration:
Standards: 1.216 ppm, 12.16 ppm, 121.6 ppm NH_3
Slope: -57.5
pH Calibration Check (pH = 5.00): 5.04

NH_3 Audit (Ricca Chemical):
Lot No. 1107613
Recovery: 102%

Test Number	Reagent	Sample Volume (mL)	pH	Dilution Factor	Meter Reading (ppm NH_3)	Blank Corrected (ppm NH_3)	Average
Lab Blank (0.1 N HCl)		--	--	1	0.01 0.01	-- --	0.01
NH_3 Audit (10.00 ppm)		--	--	1	10.3 10.2	10.3 10.2	10.2
FB-NH_3	0.1 N HCl	263.3	1.56	1	0.02 0.02	-- --	< 0.5
1-NH_3	0.1 N HCl	434.1	1.70	1	2.76 2.81	2.74 2.79	2.76
2-NH_3	0.1 N HCl	430.5	1.69	1	2.62 2.63	2.60 2.61	2.60
3-NH_3	0.1 N HCl	466.7	1.72	1	4.43 4.50	4.41 4.48	4.44

NOTES: Reporting Limits: 0.5 ppm (mg/L) ammonia
Units: ppm = mg/L

Meter: Orion 4-Star, S/N G12980
Ammonia Probe: Orion TY1-18435

Analyzed by: Echetty
Esha Chetty
Laboratory Manager

Date: 12 / 16 / 2021

Reviewed by:
Katie Resch
QC/Reporting Specialist

Date: 12 / 16 / 2021

AMMONIA RESULTS

Client: Covanta Marion Inc

Project: PROJ - 010935

NH_3 Calibration:
Standards: 1.216 ppm, 12.16 ppm, 121.6 ppm NH_3
Slope: -57.5

NH_3 Audit (Ricca Chemical):
Lot No. 1107613
Recovery: 102%

pH Calibration Check (pH = 5.00): 5.04

Test Number	Reagent	Sample Volume (mL)	pH	Dilution Factor	Meter Reading (ppm NH_3)	Blank Corrected (ppm NH_3)	Average
Lab Blank (0.1 N HCl)		--	--	1	0.01 0.01	-- --	0.01
NH_3 Audit (10.00 ppm)		--	--	1	10.3 10.2	10.3 10.2	10.2
Lot E052-1145	0.1 N HCl	5.0	--	1	8.68 8.63	-- --	8.66

NOTES: Reporting Limits: 0.5 ppm (mg/L) ammonia
Units: ppm = mg/L

Meter: Orion 4-Star, S/N G12980
Ammonia Probe: Orion TY1-18435

Analyzed by: Echetty
Esha Chetty
Laboratory Manager

Date: 12 / 16 / 2021

Reviewed by:
Katie Resch
QC/Reporting Specialist

Date: 12 / 16 / 2021

LABORATORY NARRATIVE
BAAQMD METHOD ST-1B
Client: Covanta Marion, Inc
Project: PROJ - 010935

Custody

Three samples collected in 0.1 N HCl were received on December 10th, 2021. One field blank and a set of reagent blank were also received with ERA QC audit sample. According to the Chain of Custody, these samples were collected on December 8th, 2021. All samples were received in good condition with no signs of loss.

Sample Analysis Notes

Samples were analyzed for ammonia based on the analytical procedures in BAAQMD ST-1A (Determination of Ammonia Effluents Collected in Acid Media using the Specific Ion Electrode). These samples were analyzed on December 15th, 2021 (within 5 days of sample receipt). All samples had a pH measurement below 1.8. Immediately before ammonia analysis, the pH of each sample was raised above 11 using a pH/ionic strength adjusting solution.

Quality Assurance Notes

Prior to analysis, the calibration was checked with a 10.00 ppm audit sample. The measured value was within 5% of the certified concentration. ERA QC sample were prepared in accordance to the dilution instructions stated in the ERA catalogue 1145. Diluted sample was analyzed to the standard lab procedure.

MONTROSE
AIR QUALITY SERVICES

SAMPLE ACCEPTANCE CHECKLIST

Section 1
Client: Covanta Marion Inc
Project: PROJ-010935 Test Method: BAAQMD-ST3
Date Received: 12/10/21
Sampler's Name Present: ☑ Yes ☐ No

Section 2
Sample Temperature (°C) : Ambient
Testing: ☐ Compliance ☐ RATA ☐ Engineering ☐ NA

Section 3	Yes	No	NA
Was a COC included with the samples?	✓		
Are sample IDs present on the COC?	✓		
Are sampling dates present on the COC?	✓		
Is a relinquished signature present?	✓		
Are the test methods required clearly indicated on the COC?	✓		
Were the samples kept cold during transport?			✓
Were the samples placed under refrigeration for storage?			✓
Are the level of liquid marked on the sample bottle?	✓		
If the sample bottles are marked, was there in visible loss of sample?		✓	
Are the caps/seals intact?	✓		
Did all the bottle labels agree with the COC? (Sample IDs, content)	✓		
Did the samples labels include the project number?	✓		
Did the samples labels include the collection date?	✓		
Were the samples collected in the correct containers for the required tests.	✓		
Are the containers label with the correct preservatives?	✓		
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 4 Explanations/Comments
Analyse ERA QC sample with it

Section 5
For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials:_____ Date:_____
☐ Email (email sent to/on):_____/_____
Project Manager's response:

Completed By: Esha Date: 12/10/21

ERA
A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product:	Air and Emissions Ammonia in Impinger Solution
Catalog Number:	1145
Lot No.	E052-1145
Certificate Issue Date:	June 17, 2020
Expiration Date:	August 25, 2023
Revision Number:	Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #1145 revision 090119.

CERTIFICATION

Parameter	Certified Value[1]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/L	%	mg/L	mg/L
Ammonium	9.05	2.49	7.89 - 10.0	7.89 - 10.0

ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number[6]	Recovery
	mg/L	mg/L	%			%
Ammonium	9.05	9.02	99.7	7	-	-

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

MONTROSE AIR QUALITY SERVICES

CHAIN OF CUSTODY

Portland Location
13585 NE Whitaker Way
Portland, OR 97230
(503) 255-5050

Lab info:
Montrose Air Quality Services
Antioch, CA

Client / Project:	Project / Sample Location:	Test / Analytical Method:
Covanta Marion, Inc	Stack 2 Chronic	BAAQMD ST-1B (combine impingers)
Project No.: PROJ-010935	**Purchase Order No:**	**Special Analysis / Reporting Instructions:**
Send Analytical Report To: Portland QA/QC: : PortlandQA-QC@montrose-env.com pbecker@montrose-env.com / echetty@montrose	**Sampler or PM Signature:** Peter	

Run / Sample No.	Date	Time	Containers	Sample Fraction	Reagent	Lab / Sample ID No.
1-NH3	12/8/21		1	Container 1 - Impingers 1 & 2 contents and rinses	0.1N HCl	
2-NH3	"		1	Same as Run 1	"	
3-NH3	"		1	Same as Run 1	"	
FB-NH3	"		1	Field blank - same as Run 1	"	
RB-HCl	"		1	0.1N Reagent Blank	0.1N HCl	Hold
RB-DI	"		1	Dionized Water Reagent Blank	DI	Hold
Total Containers			6			

Relinquished by	Date	Time	Received by	Date	Time	Temp.
Peter Becker	12/8/21	1900	Esha	12/10/21	0900	
Relinquished by	Date	Time	Received by	Date	Time	Temp.
Relinquished by	Date	Time	Received by	Date	Time	Temp.

Key: FB = Field Blank

MAQS Chain of Custody Macro-R4 (version 1)

Appendix C.3
Aldehydes Analyses

Atmospheric Analysis & Consulting, Inc.

Client	: Montrose AQS
Client Project Name	: Covanta Marion Inc.
Client Project No.	: PROJ-010935
AAC Project No.	: 212323
Reporting Date	: 01/03/2022

On December 10, 2021, Atmospheric Analysis & Consulting, Inc. received nine (9) DNPH impinger contents for Formaldehyde, Acetaldehyde, and Acrolein analysis by CARB Method 430 Modified. Upon receipt, the samples were assigned unique Laboratory ID numbers as follows:

Client Sample ID	AAC Sample ID	Client Sample ID	AAC Sample ID
1FB-FORM	212323-26336	2B-FORM	212323-26341
1A-FORM	212323-26337	3FB-FORM	212323-26342
1B-FORM	212323-26338	3A-FORM	212323-26343
2FB-FORM	212323-26339	3B-FORM	212323-26344
2A-FORM	212323-26340		

This analysis is performed in accordance with AAC's Quality Manual. Test results apply to the sample(s) as received. For detailed information pertaining to specific EPA, NCASI, ASTM and SCAQMD accreditations (Methods & Analytes), please visit our website at www.aaclab.com.

The DNPH solution was certified on 12/06/2021 and recertified on 12/08/2021.

I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples. The Laboratory Director or his/her designee, as verified by the following signature, has authorized release of the data contained in this hardcopy report.

If you have any questions or require further explanation of data results, please contact the undersigned.

Dr. Sucha Parmar, PhD
Technical Director

This report consists of 6 pages.

2225 Sperry Ave., Ventura, CA 93003 www.aaclab.com • (805) 650-1642

Laboratory Analysis Report

CARB Method 430 Modified

Client	: Montrose AQS	Sampling Date	: 12/08/2021
Client Project Name	: Covanta Marion Inc.	Receiving Date	: 12/10/2021
AAC Project No.	: 212323	Analysis Date	: 12/22/2021
Analyst	: CH/RS	Reporting Date	: 01/03/2022
Units	: ug/sample		

Client Sample ID	AAC Sample ID	Formaldehyde (ug/sample)	Acetaldehyde (ug/sample)	Acrolein (ug/sample)	SRL (ug/sample)
1FB-FORM	212323-26336	<SRL	<SRL	<SRL	0.255
1A-FORM	212323-26337	0.567	0.399	<SRL	0.250
1B-FORM	212323-26338	<SRL	<SRL	<SRL	0.260
2FB-FORM	212323-26339	<SRL	<SRL	<SRL	0.250
2A-FORM	212323-26340	0.610	0.844	<SRL	0.250
2B-FORM	212323-26341	<SRL	0.427	<SRL	0.250
3FB-FORM	212323-26342	<SRL	<SRL	<SRL	0.250
3A-FORM	212323-26343	0.807	0.576	<SRL	0.250
3B-FORM	212323-26344	<SRL	<SRL	<SRL	0.250
AAC Trip Blank		<SRL	<SRL	<SRL	0.250
AAC Trip Spike		103 % Recovery	104 % Recovery	178 % Recovery	0.250

SRL - Sample Reporting Limit

<SRL-compound was analyzed for but not detected at or above the SRL

SRL (ug/sample) =MRL (0.025 ug/mL) x Sample Volume (mL) x Analysis Dilution Factor x Method Dilution Factor

2225 Sperry Ave., Ventura, CA 93003 www.aaclab.com • (805) 650-1642

Quality Control/Quality Assurance Report

CARB Method 430 Modified

HPLC Calibration Verification of the 06/11/2021 Calibration

Analysis Date : 12/22/2021 Instrument ID : HPLC 1200
Analyst : CH

Sample ID	Analyte	Target Concentration (ug/mL)	Measured Concentration (ug/mL)	Percent Recovery (%)*
Opening CV	Formaldehyde	2.50	2.47	98.7
	Acetaldehyde	2.50	2.55	102
	Acrolein	2.50	2.47	98.7
Continuing CV	Formaldehyde	2.50	2.55	102
	Acetaldehyde	2.50	2.67	107
	Acrolein	2.50	2.59	104
Continuing CV	Formaldehyde	2.50	2.45	98.0
	Acetaldehyde	2.50	2.57	103
	Acrolein	2.50	2.50	99.8
Continuing CV	Formaldehyde	2.50	2.39	95.5
	Acetaldehyde	2.50	2.50	100
	Acrolein	2.50	2.42	96.8
Closing CV	Formaldehyde	2.50	2.64	105
	Acetaldehyde	2.50	2.75	110
	Acrolein	2.50	2.68	107
Second Source	Formaldehyde	2.50	2.51	101
	Acetaldehyde	2.50	2.67	107
	Acrolein	2.50	2.59	103

* Must be 90 - 110 %
Second Source must be 85 - 115 %

Quality Control/Quality Assurance Report

CARB Method 430 Modified

Analysis Date : 12/22/2021 Analyst : CH Instrument ID : HPLC 1200

Laboratory Control Spike Analysis

Analyte	Sample Concentration (ug/mL)	Spike Concentration (ug/mL)	Measured Spike Concentration (ug/mL)	Measured Spike Dup Concentration (ug/mL)	Spike Recovery (%)*	Spike Dup Recovery (%)*	%RPD**
Formaldehyde	0.000	1.25	1.28	1.27	102	101	0.7
Acetaldehyde	0.000	1.25	1.38	1.38	110	111	0.5
Acrolein	0.000	1.25	1.34	1.34	107	107	0.4

* Must be 85-115%

** Must be ≤ 25%

Matrix Spike Analysis (212323-26341)

Analyte	Sample Concentration (ug/mL)	Spike Concentration (ug/mL)	Measured Spike Concentration (ug/mL)	Measured Spike Dup Concentration (ug/mL)	Spike Recovery (%)*	Spike Dup Recovery (%)*	%RPD**
Formaldehyde	0.000	1.25	1.21	1.26	96.8	101	4.0
Acetaldehyde	0.021	1.25	1.28	1.31	101	103	2.8
Acrolein	0.000	1.25	1.22	1.26	97.8	101	2.9

* Must be 75-125%

** Must be ≤ 25%

Quality Control/Quality Assurance Report

CARB Method 430 Modified

Analysis Date : 12/22/2021 Instrument ID : HPLC 1200
Analyst : CH

Duplicate Analysis

Sample ID	Analyte	Dilution Factor	Sample Concentration (ug/mL)	Duplicate Concentration (ug/mL)	%RPD*
212323-26338	Formaldehyde	1.0	<SRL	<SRL	NA
	Acetaldehyde	1.0	<SRL	<SRL	NA
	Acrolein	1.0	<SRL	<SRL	NA
212323-26344	Formaldehyde	1.0	<SRL	<SRL	NA
	Acetaldehyde	1.0	<SRL	<SRL	NA
	Acrolein	1.0	<SRL	<SRL	NA

* Must be <20%

System and Method Blank Analysis

Sample ID	Analyte	Concentration (ug/mL)	RL / SRL (ug/mL)
Opening Acetonitrile Blank	Formaldehyde	<RL	0.025
	Acetaldehyde	<RL	0.025
	Acrolein	<RL	0.025
Method Blank	Formaldehyde	0.046	0.025
	Acetaldehyde	<SRL	0.025
	Acrolein	<SRL	0.025
Closing Acetonitrile Blank	Formaldehyde	<RL	0.025
	Acetaldehyde	<RL	0.025
	Acrolein	<RL	0.025

RL - Reporting Limit
SRL - Sample Reporting Limit

2225 Sperry Ave., Ventura, CA 93003 www.aaclab.com • (805) 650-1642

212323

MONTROSE AIR QUALITY SERVICES

CHAIN OF CUSTODY

MAQS
Portland, OR
13585 NE Whitaker Way
Portland, OR 97230

Lab info: AAC
2225 Sperry Avenue
Ventura, CA 93003

Client / Project:	Project / Sample Location:	Test / Analytical Method:
Covanta Marion, Inc	Stack a Chronic	CARB 430
Project No.:	**Purchase Order No:**	**Special Analysis / Detection Limit / Reporting Instructions:**
PROJ-010935		Vol. of toluene added to 1FB, 1A-FORM, 1B-FORM was 10 ml
Send Analytical Report To:	**Sampler or PM Signature:**	
PortlandQA-QC@montrose-env.com pbecker@montrose-env.com	Peter Becker	

Run / Sample No.	Date	Time	Containers	Sample Fraction		Reagent	Lab / Sample ID No.
1FB-FORM	12/8/21	12:55	1	Field Blank	26336	DNPH / Toluene	
1A-FORM	"	13:00	1	1st impinger	26337	"	
1B-FORM	"	13:05	1	2nd impinger	26338	"	
2FB-FORM	"	15:25	1	Field Blank	26339	"	
2A-FORM	"	15:27	1	1st impinger	26340	"	
2B-FORM	"	15:30	1	2nd impinger	26341	"	
3FB-FORM	"	16:05	1	Field Blank	26342	"	
3A-FORM	"	16:07	1	1st impinger	26343	"	
3B-FORM	"	16:10	1	2nd impinger	26344	"	
Total Containers			9				

Relinquished by	Date	Time	Received by	Date	Time	Temp.
Peter Becker	12.9.21	16:00		12/10/21	1010	
Relinquished by	Date	Time	Received by	Date	Time	Temp.
Relinquished by	Date	Time	Received by	Date	Time	Temp.

Fx 5.8°C T10

MAQS Chain of Custody Macro-R3

Appendix C.4
VOST Analyses

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

Laboratory Job ID: 140-25698-1
Client Project/Site: Covanta Marion, Inc. - M0031

For:
Montrose Air Quality Services LLC
13585 NE Whitaker Way
Portland, Oregon 97230

Attn: Peter Becker

Authorized for release by:
1/4/2022 7:04:36 AM

Courtney Adkins, Project Manager II
(865)291-3019
courtney.adkins@eurofinset.com

Table of Contents

Definitions/Glossary

Client: Montrose Air Quality Services LLC
Job ID: 140-25698-1
Project/Site: Covanta Marion, Inc. - M0031

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS VOA TICs

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 140-25698-1

Laboratory: Eurofins TestAmerica, Knoxville

Narrative

Job Narrative
140-25698-1

Receipt

The samples were received on 12/10/2021 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 6.7º C and 7.3º C.

GC/MS VOA

Volatile Organic Sampling Train (VOST) Preparation and Analysis: VOST tubes and condensate samples were analyzed for the volatile organic target analytes by purge and trap GCMS using Eurofins TestAmerica Knoxville standard operating procedures KNOX-MS-0011 and KNOX-MS-0015, based on the following methods:

- SW-846 5041A, “Analysis for Desorption of Sorbent Cartridges from Volatile Organic Sampling Train (VOST)”
- SW-846 8260B, “Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS)”

Each tube or tube pair is prepared by spiking a known amount of surrogate onto the media using a flash vaporization device. Volatile compounds are introduced into the gas chromatograph by thermal desorption of the analytes from the VOST tube using a clamshell oven and a purge and trap device. VOST condensates are spiked with surrogates and purged directly. The components are separated using the chromatograph and detected using a mass spectrometer, which provides both qualitative and quantitative information.

Sample results were calculated using the following equations:

VOST result, µg = (On column concentration, µg/L) × (purge volume, L)

Condensate result, µg/sample = (On column concentration, µg/L) × (Condensate volume received, L) × Dilution Factor

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 140-56885. The laboratory analyzed the laboratory control spike and laboratory control spike duplicate (LCS/LCSD).

Method 8260B: The method requirement for no headspace was not met. The following volatile samples were analyzed with significant headspace in the sample container(s): M0031 RUN 1 CONDENSATE, M0031 RUN 2 CONDENSATE and M0031 RUN 3 CONDENSATE. Significant headspace is defined as a bubble greater than 6 mm in diameter.

Method 8260B: The following analyte(s) recovered outside control limits for the LCSD associated with analytical batch 140-57159: 1,3,5-Trimethylbenzene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Method 8260B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 140-57494 recovered outside control limits for the following analytes: 1,2-Dibromo-3-Chloropropane and 1,2,3-Trichlorobenzene.

Method 8260B: Several analytes were outside the recovery range for the client provided audit sample. The audit sample was reanalyzed for confirmation with similar results . Both sets of results were reported. All method criteria were met.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Analyte	1st ng/smp	2nd ng/smp	%D Between Runs	PT value ng/smp	PT Range	%D PT v. 1st	% Recovery
1,1,2,2-Tetrachloroethane	463	429	7.623318386	788	607-1010	-51.95843325	-41.24365482
1,1,2-Trichloroethane	18.8	18.5	1.608579088				
1,1-Dichloroethane	1440	1440	0				
1,1-Dichloroethene	1020	1020	0	776	no limit	27.1714922	31.44329897
1,2,3-Trichloropropane	146	130	11.5942029	240	149-324	-48.70466321	-39.16666667
1,2,4-Trimethylbenzene	1320	1350	-2.247191011	1190	912-1490	10.35856574	10.92436975
1,2-Dibromo-3-Chloropropane	297	268	10.26548673				
1,2-Dichlorobenzene	255	254	0.392927308				
1,3,5-Trimethylbenzene	790	837	-5.77750461	775	603-961	1.916932907	1.935483871
1,3-Dichlorobenzene	695	695	0				
1,4-Dichlorobenzene	1050	1040	0.956937799				
4-Methyl-2-pentanone (MIBK)	507	438	14.6031746	872	no limit	-52.9369108	-41.85779817
Acetone	345	345	0	1190	518-1640	-110.0977199	-71.00840336
Benzene	328	325	0.918836141	307	239-365	6.614173228	6.840390879
Bromoform	343	320	6.938159879	446	332-566	-26.10899873	-23.0941704
Carbon tetrachloride	846	850	-0.471698113	622	404-778	30.51771117	36.01286174
Chlorobenzene	720	721	-0.138792505	753	596-896	-4.480651731	-4.38247012
Chlorodibromomethane	586	547	6.884377758	708	554-878	-18.85625966	-17.23163842
Chloroform	698	676	3.202328967	669	527-816	4.242867593	4.334828102
cis-1,2-Dichloroethene	1340	1320	1.503759398	1220	no limit	9.375	9.836065574
cis-1,3-Dichloropropene	886	816	8.225616921	985	no limit	-10.58257616	-10.05076142
Dibromomethane	188	168	11.23595506				
Dichlorobromomethane	984	920	6.722689076	992	568-1400	-0.809716599	-0.806451613
Ethylbenzene	368	380	-3.20855615	344	no limit	6.741573034	6.976744186
Ethylene Dibromide	205	190	7.594936709				
Methylene Chloride	983	966	1.744484351	1010	no limit	-2.709483191	-2.673267327
m-Xylene & p-Xylene	610	626	-2.588996764	554	257-903	9.621993127	10.10830325
Naphthalene (not on list)	320	268	17.68707483	1170	no limit	-114.0939597	-72.64957265
o-Xylene	894	901	-0.77994429	854	396-1390	4.576659039	4.683840749
Styrene	845	844	0.118413262	855	666-1040	-1.176470588	-1.169590643
Tetrachloroethene	306	318	-3.846153846	262	165-314	15.49295775	16.79389313
Toluene	1130	1140	-0.881057269	1100	847-1310	2.69058296	2.727272727
trans-1,2-Dichloroethene	1040	1030	0.966183575	839	no limit	21.3943587	23.95709178
trans-1,3-Dichloropropene	321	297	7.766990291	445	no limit	-32.37597911	-27.86516854
Trichloroethene	1110	1090	1.818181818	923	682-1110	18.39645844	20.26002167

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 1-1 TRAP A/B
Date Collected: 12/08/21 10:17
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-1
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 18:07	1
Benzene	**0.190**		0.0100	0.00570	ug/Sample			12/18/21 18:07	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 18:07	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 18:07	1
Bromodichloromethane	**0.0435**		0.0100	0.00170	ug/Sample			12/18/21 18:07	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 18:07	1
Bromomethane	**0.0742**		0.0500	0.0110	ug/Sample			12/18/21 18:07	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 18:07	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 18:07	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 18:07	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 18:07	1
Carbon disulfide	**0.0626**		0.0250	0.0110	ug/Sample			12/18/21 18:07	1
Carbon tetrachloride	**0.0547**		0.0100	0.00240	ug/Sample			12/18/21 18:07	1
Chlorobenzene	**0.0105**	**B**	0.0100	0.00100	ug/Sample			12/18/21 18:07	1
Chlorodibromomethane	**0.0111**	**J**	0.0250	0.00370	ug/Sample			12/18/21 18:07	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 18:07	1
Chloroform	**0.101**		0.0100	0.00810	ug/Sample			12/18/21 18:07	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 18:07	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 18:07	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 18:07	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 18:07	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 18:07	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 18:07	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 18:07	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 18:07	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 18:07	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 18:07	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 18:07	1
1,2-Dichloroethane	**0.00376**	**J**	0.0100	0.00170	ug/Sample			12/18/21 18:07	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 18:07	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 18:07	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 18:07	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 18:07	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 18:07	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 18:07	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 18:07	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 18:07	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 18:07	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 18:07	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 18:07	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 18:07	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 18:07	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 18:07	1
Methylene Chloride	**0.127**		0.100	0.0860	ug/Sample			12/18/21 18:07	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 18:07	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 18:07	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 18:07	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 18:07	1

Client Sample ID: M0031 RUN 1-1 TRAP A/B

Lab Sample ID: 140-25698-1

Date Collected: 12/08/21 10:17
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 18:07	1
Tetrachloroethene	**0.0144**		0.0100	0.00100	ug/Sample			12/18/21 18:07	1
Toluene	**0.0624**		0.0250	0.0147	ug/Sample			12/18/21 18:07	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 18:07	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 18:07	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 18:07	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 18:07	1
Trichloroethene	**0.00777**	**J**	0.0100	0.00310	ug/Sample			12/18/21 18:07	1
Trichlorofluoromethane	**0.00939**	**J**	0.0500	0.00530	ug/Sample			12/18/21 18:07	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 18:07	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 18:07	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 18:07	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 18:07	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 18:07	1
m,p-Xylene	**0.0100**	**J**	0.0200	0.00700	ug/Sample			12/18/21 18:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methyl-	*0.0710*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/18/21 18:07*	*1*
Unknown	*0.0258*	*T J*	*ug/Sample*		*9.23*			*12/18/21 18:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*50 - 127*		*12/18/21 18:07*	*1*
4-Bromofluorobenzene (Surr)	*84*		*50 - 122*		*12/18/21 18:07*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/18/21 18:07*	*1*
Toluene-d8 (Surr)	*109*		*57 - 134*		*12/18/21 18:07*	*1*

Client Sample ID: M0031 RUN 1-1 TRAP C

Lab Sample ID: 140-25698-2

Date Collected: 12/08/21 10:17
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 18:32	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 18:32	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 18:32	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 18:32	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 18:32	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 18:32	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 18:32	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 18:32	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 18:32	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 18:32	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 18:32	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 18:32	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 18:32	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 18:32	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 18:32	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 18:32	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 1-1 TRAP C
Date Collected: 12/08/21 10:17
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-2
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 18:32	1
Chloromethane	**0.0592**		0.0500	0.0225	ug/Sample			12/18/21 18:32	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 18:32	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 18:32	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 18:32	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 18:32	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 18:32	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 18:32	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 18:32	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 18:32	1
Dichlorodifluoromethane	**0.0191**	**J**	0.0250	0.00620	ug/Sample			12/18/21 18:32	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 18:32	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 18:32	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 18:32	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 18:32	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 18:32	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 18:32	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 18:32	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 18:32	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 18:32	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 18:32	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 18:32	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 18:32	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 18:32	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 18:32	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 18:32	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 18:32	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 18:32	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 18:32	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 18:32	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 18:32	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 18:32	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 18:32	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 18:32	1
Toluene	**0.0370**		0.0250	0.0147	ug/Sample			12/18/21 18:32	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 18:32	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 18:32	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 18:32	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 18:32	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 18:32	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 18:32	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 18:32	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 18:32	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 18:32	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 18:32	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 18:32	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 18:32	1

Client Sample ID: M0031 RUN 1-1 TRAP C

Lab Sample ID: 140-25698-2

Date Collected: 12/08/21 10:17
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Cyclopentane	0.0995	T J N	ug/Sample		2.38	287-92-3		12/18/21 18:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		50 - 127		12/18/21 18:32	1
4-Bromofluorobenzene (Surr)	89		50 - 122		12/18/21 18:32	1
Dibromofluoromethane (Surr)	109		50 - 134		12/18/21 18:32	1
Toluene-d8 (Surr)	113		57 - 134		12/18/21 18:32	1

Client Sample ID: M0031 RUN 1-2 TRAP A/B

Lab Sample ID: 140-25698-3

Date Collected: 12/08/21 11:10
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 17:19	1
Benzene	**0.500**		0.0100	0.00570	ug/Sample			12/18/21 17:19	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 17:19	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 17:19	1
Bromodichloromethane	**0.0359**		0.0100	0.00170	ug/Sample			12/18/21 17:19	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 17:19	1
Bromomethane	**0.0791**		0.0500	0.0110	ug/Sample			12/18/21 17:19	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 17:19	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 17:19	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 17:19	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 17:19	1
Carbon disulfide	**0.0555**		0.0250	0.0110	ug/Sample			12/18/21 17:19	1
Carbon tetrachloride	**0.0464**		0.0100	0.00240	ug/Sample			12/18/21 17:19	1
Chlorobenzene	**0.00929**	**J B**	0.0100	0.00100	ug/Sample			12/18/21 17:19	1
Chlorodibromomethane	**0.00858**	**J**	0.0250	0.00370	ug/Sample			12/18/21 17:19	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 17:19	1
Chloroform	**0.0883**		0.0100	0.00810	ug/Sample			12/18/21 17:19	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 17:19	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 17:19	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 17:19	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 17:19	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 17:19	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 17:19	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 17:19	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 17:19	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 17:19	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 17:19	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 17:19	1
1,2-Dichloroethane	**0.00447**	**J**	0.0100	0.00170	ug/Sample			12/18/21 17:19	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 17:19	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 17:19	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 17:19	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 17:19	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 17:19	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 17:19	1

Client Sample ID: M0031 RUN 1-2 TRAP A/B
Date Collected: 12/08/21 11:10
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-3
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 17:19	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 17:19	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 17:19	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 17:19	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 17:19	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 17:19	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 17:19	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 17:19	1
Methylene Chloride	**0.248**		0.100	0.0860	ug/Sample			12/18/21 17:19	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 17:19	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 17:19	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 17:19	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 17:19	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 17:19	1
Tetrachloroethene	**0.0143**		0.0100	0.00100	ug/Sample			12/18/21 17:19	1
Toluene	**0.0631**		0.0250	0.0147	ug/Sample			12/18/21 17:19	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 17:19	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 17:19	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 17:19	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 17:19	1
Trichloroethene	**0.00825**	**J**	0.0100	0.00310	ug/Sample			12/18/21 17:19	1
Trichlorofluoromethane	**0.00847**	**J**	0.0500	0.00530	ug/Sample			12/18/21 17:19	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 17:19	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 17:19	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 17:19	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 17:19	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 17:19	1
m,p-Xylene	**0.00867**	**J**	0.0200	0.00700	ug/Sample			12/18/21 17:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.0339*	*T J*	*ug/Sample*		*1.22*			*12/18/21 17:19*	*1*
Butane, 2-methyl-	*0.0660*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/18/21 17:19*	*1*
Cyclopentane	*0.296*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 17:19*	*1*
Hexane, 2-methyl-	*0.0402*	*T J N*	*ug/Sample*		*3.72*	*591-76-4*		*12/18/21 17:19*	*1*
Pentane, 2,3,3-trimethyl-	*0.0349*	*T J N*	*ug/Sample*		*5.14*	*560-21-4*		*12/18/21 17:19*	*1*
Hexane, 2,2,4-trimethyl-	*0.0258*	*T J N*	*ug/Sample*		*5.49*	*16747-26-5*		*12/18/21 17:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*50 - 127*		*12/18/21 17:19*	*1*
4-Bromofluorobenzene (Surr)	*78*		*50 - 122*		*12/18/21 17:19*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 134*		*12/18/21 17:19*	*1*
Toluene-d8 (Surr)	*108*		*57 - 134*		*12/18/21 17:19*	*1*

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 1-2 TRAP C
Date Collected: 12/08/21 11:10
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-4
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 17:43	1
Benzene	**0.00598**	**J**	0.0100	0.00570	ug/Sample			12/18/21 17:43	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 17:43	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 17:43	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 17:43	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 17:43	1
Bromomethane	**0.0180**	**J**	0.0500	0.0110	ug/Sample			12/18/21 17:43	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 17:43	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 17:43	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 17:43	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 17:43	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 17:43	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 17:43	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 17:43	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 17:43	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 17:43	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 17:43	1
Chloromethane	**0.0394**	**J**	0.0500	0.0225	ug/Sample			12/18/21 17:43	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 17:43	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 17:43	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 17:43	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 17:43	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 17:43	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 17:43	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 17:43	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 17:43	1
Dichlorodifluoromethane	**0.0199**	**J**	0.0250	0.00620	ug/Sample			12/18/21 17:43	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 17:43	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 17:43	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 17:43	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 17:43	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 17:43	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 17:43	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 17:43	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 17:43	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 17:43	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 17:43	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 17:43	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 17:43	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 17:43	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 17:43	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 17:43	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 17:43	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 17:43	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 17:43	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 17:43	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 17:43	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 17:43	1

Client Sample ID: M0031 RUN 1-2 TRAP C

Lab Sample ID: 140-25698-4

Date Collected: 12/08/21 11:10
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 17:43	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 17:43	1
Toluene	**0.0313**		0.0250	0.0147	ug/Sample			12/18/21 17:43	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 17:43	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 17:43	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 17:43	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 17:43	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 17:43	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 17:43	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 17:43	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 17:43	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 17:43	1
Vinyl chloride	**0.00824**	**J**	0.0250	0.00640	ug/Sample			12/18/21 17:43	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 17:43	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 17:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*					*12/18/21 17:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*50 - 127*		*12/18/21 17:43*	*1*
4-Bromofluorobenzene (Surr)	*89*		*50 - 122*		*12/18/21 17:43*	*1*
Dibromofluoromethane (Surr)	*107*		*50 - 134*		*12/18/21 17:43*	*1*
Toluene-d8 (Surr)	*110*		*57 - 134*		*12/18/21 17:43*	*1*

Client Sample ID: M0031 RUN 1-3 TRAP A/B

Lab Sample ID: 140-25698-5

Date Collected: 12/08/21 12:09
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 16:29	1
Benzene	**0.360**		0.0100	0.00570	ug/Sample			12/18/21 16:29	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 16:29	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 16:29	1
Bromodichloromethane	**0.0336**		0.0100	0.00170	ug/Sample			12/18/21 16:29	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 16:29	1
Bromomethane	**0.125**		0.0500	0.0110	ug/Sample			12/18/21 16:29	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 16:29	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 16:29	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 16:29	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 16:29	1
Carbon disulfide	**0.0562**		0.0250	0.0110	ug/Sample			12/18/21 16:29	1
Carbon tetrachloride	**0.0444**		0.0100	0.00240	ug/Sample			12/18/21 16:29	1
Chlorobenzene	**0.0122**	**B**	0.0100	0.00100	ug/Sample			12/18/21 16:29	1
Chlorodibromomethane	**0.00871**	**J**	0.0250	0.00370	ug/Sample			12/18/21 16:29	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 16:29	1
Chloroform	**0.0821**		0.0100	0.00810	ug/Sample			12/18/21 16:29	1

Client Sample ID: M0031 RUN 1-3 TRAP A/B
Date Collected: 12/08/21 12:09
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-5
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 16:29	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 16:29	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 16:29	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 16:29	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 16:29	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 16:29	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 16:29	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 16:29	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 16:29	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 16:29	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 16:29	1
1,2-Dichloroethane	**0.00383**	**J**	0.0100	0.00170	ug/Sample			12/18/21 16:29	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 16:29	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 16:29	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 16:29	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 16:29	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 16:29	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 16:29	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 16:29	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 16:29	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 16:29	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 16:29	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 16:29	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 16:29	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 16:29	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 16:29	1
Methylene Chloride	**0.207**		0.100	0.0860	ug/Sample			12/18/21 16:29	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 16:29	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 16:29	1
Styrene	**0.00247**	**J**	0.0100	0.00210	ug/Sample			12/18/21 16:29	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 16:29	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 16:29	1
Tetrachloroethene	**0.0177**		0.0100	0.00100	ug/Sample			12/18/21 16:29	1
Toluene	**0.0586**		0.0250	0.0147	ug/Sample			12/18/21 16:29	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 16:29	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 16:29	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 16:29	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 16:29	1
Trichloroethene	**0.00850**	**J**	0.0100	0.00310	ug/Sample			12/18/21 16:29	1
Trichlorofluoromethane	**0.00754**	**J**	0.0500	0.00530	ug/Sample			12/18/21 16:29	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 16:29	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 16:29	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 16:29	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 16:29	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 16:29	1
m,p-Xylene	**0.00870**	**J**	0.0200	0.00700	ug/Sample			12/18/21 16:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methyl-	*0.0671*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/18/21 16:29*	*1*

Client Sample ID: M0031 RUN 1-3 TRAP A/B

Lab Sample ID: 140-25698-5

Date Collected: 12/08/21 12:09
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Cyclopentane	0.412	T J N	ug/Sample		2.38	287-92-3		12/18/21 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		50 - 127		12/18/21 16:29	1
4-Bromofluorobenzene (Surr)	82		50 - 122		12/18/21 16:29	1
Dibromofluoromethane (Surr)	101		50 - 134		12/18/21 16:29	1
Toluene-d8 (Surr)	108		57 - 134		12/18/21 16:29	1

Client Sample ID: M0031 RUN 1-3 TRAP C

Lab Sample ID: 140-25698-6

Date Collected: 12/08/21 12:09
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 16:54	1
Benzene	**0.00628**	**J**	0.0100	0.00570	ug/Sample			12/18/21 16:54	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 16:54	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 16:54	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 16:54	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 16:54	1
Bromomethane	**0.0410**	**J**	0.0500	0.0110	ug/Sample			12/18/21 16:54	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 16:54	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 16:54	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 16:54	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 16:54	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 16:54	1
Carbon tetrachloride	**0.00275**	**J**	0.0100	0.00240	ug/Sample			12/18/21 16:54	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 16:54	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 16:54	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 16:54	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 16:54	1
Chloromethane	**0.104**		0.0500	0.0225	ug/Sample			12/18/21 16:54	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 16:54	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 16:54	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 16:54	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 16:54	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 16:54	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 16:54	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 16:54	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 16:54	1
Dichlorodifluoromethane	**0.0198**	**J**	0.0250	0.00620	ug/Sample			12/18/21 16:54	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 16:54	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 16:54	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 16:54	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 16:54	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 16:54	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 16:54	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 16:54	1

Client Sample ID: M0031 RUN 1-3 TRAP C

Lab Sample ID: 140-25698-6

Date Collected: 12/08/21 12:09
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 16:54	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 16:54	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 16:54	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 16:54	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 16:54	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 16:54	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 16:54	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 16:54	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 16:54	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 16:54	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 16:54	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 16:54	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 16:54	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 16:54	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 16:54	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 16:54	1
Toluene	**0.0271**		0.0250	0.0147	ug/Sample			12/18/21 16:54	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 16:54	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 16:54	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 16:54	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 16:54	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 16:54	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 16:54	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 16:54	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 16:54	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 16:54	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 16:54	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 16:54	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 16:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*1.20*	*T J*	*ug/Sample*		*0.99*			*12/18/21 16:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*50 - 127*		*12/18/21 16:54*	*1*
4-Bromofluorobenzene (Surr)	*88*		*50 - 122*		*12/18/21 16:54*	*1*
Dibromofluoromethane (Surr)	*109*		*50 - 134*		*12/18/21 16:54*	*1*
Toluene-d8 (Surr)	*110*		*57 - 134*		*12/18/21 16:54*	*1*

Client Sample ID: M0031 RUN 1 CONDENSATE

Lab Sample ID: 140-25698-7

Date Collected: 12/08/21 12:14
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**0.293**	**J**	0.416	0.135	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Benzene	ND		0.0416	0.00790	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Bromobenzene	ND		0.0416	0.00666	ug/Sample		12/10/21 13:59	12/10/21 16:01	1

Client Sample ID: M0031 RUN 1 CONDENSATE
Lab Sample ID: 140-25698-7
Date Collected: 12/08/21 12:14
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Bromodichloromethane	ND		0.0416	0.00998	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Bromoform	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Bromomethane	ND		0.0832	0.0499	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
2-Butanone (MEK)	ND		0.208	0.0822	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
n-Butylbenzene	ND		0.0416	0.0156	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
sec-Butylbenzene	ND		0.0416	0.0125	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
tert-Butylbenzene	ND		0.0416	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Carbon disulfide	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Carbon tetrachloride	ND		0.0416	0.0302	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Chlorobenzene	ND		0.0416	0.00572	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Chlorodibromomethane	ND		0.0416	0.0135	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Chloroethane	ND		0.0832	0.0312	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Chloroform	ND		0.0416	0.00978	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Chloromethane	ND		0.0832	0.0302	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
2-Chlorotoluene	ND		0.0416	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
4-Chlorotoluene	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2-Dibromo-3-Chloropropane	ND		0.0832	0.0218	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2-Dibromoethane (EDB)	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Dibromomethane	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2-Dichlorobenzene	ND		0.0416	0.00707	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,3-Dichlorobenzene	ND		0.0416	0.00686	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,4-Dichlorobenzene	ND		0.0416	0.00676	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Dichlorodifluoromethane	ND		0.0832	0.0406	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,1-Dichloroethane	ND		0.0416	0.00988	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2-Dichloroethane	ND		0.0416	0.00998	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,1-Dichloroethene	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
cis-1,2-Dichloroethene	ND		0.0416	0.00811	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
trans-1,2-Dichloroethene	ND		0.0416	0.00770	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2-Dichloropropane	ND		0.0416	0.00853	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,3-Dichloropropane	ND		0.0416	0.00853	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
2,2-Dichloropropane	ND		0.0416	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,1-Dichloropropene	ND		0.0416	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
cis-1,3-Dichloropropene	ND		0.0416	0.00655	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
trans-1,3-Dichloropropene	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Ethylbenzene	ND		0.0416	0.00853	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Hexachlorobutadiene	ND		0.0832	0.0125	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
2-Hexanone	ND		0.208	0.0832	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Isopropylbenzene	ND		0.0416	0.00988	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
4-Isopropyltoluene	ND		0.0416	0.0125	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Methylene Chloride	ND		0.0832	0.0832	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
4-Methyl-2-pentanone (MIBK)	ND		0.208	0.0707	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
N-Propylbenzene	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Styrene	ND		0.0416	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,1,1,2-Tetrachloroethane	ND		0.0416	0.00770	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,1,2,2-Tetrachloroethane	ND		0.0416	0.0229	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Tetrachloroethene	ND		0.0416	0.00988	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Toluene	**0.0232**	**J**	0.0416	0.0166	ug/Sample		12/10/21 13:59	12/10/21 16:01	1

Client Sample ID: M0031 RUN 1 CONDENSATE

Lab Sample ID: 140-25698-7

Date Collected: 12/08/21 12:14
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		0.0416	0.0239	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2,4-Trichlorobenzene	ND		0.0416	0.0166	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,1,1-Trichloroethane	ND		0.0416	0.0125	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,1,2-Trichloroethane	ND		0.0416	0.00905	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Trichloroethene	ND		0.0416	0.00905	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Trichlorofluoromethane	ND		0.0832	0.0322	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2,3-Trichloropropane	ND		0.0416	0.0281	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,2,4-Trimethylbenzene	ND		0.0416	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
1,3,5-Trimethylbenzene	ND		0.0416	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
Vinyl chloride	ND		0.0832	0.0239	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
o-Xylene	ND		0.0416	0.00884	ug/Sample		12/10/21 13:59	12/10/21 16:01	1
m,p-Xylene	ND		0.0832	0.00936	ug/Sample		12/10/21 13:59	12/10/21 16:01	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*				*12/10/21 13:59*	*12/10/21 16:01*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*73 - 136*	*12/10/21 13:59*	*12/10/21 16:01*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*	*12/10/21 13:59*	*12/10/21 16:01*	*1*
Dibromofluoromethane (Surr)	*100*		*76 - 121*	*12/10/21 13:59*	*12/10/21 16:01*	*1*
Toluene-d8 (Surr)	*97*		*79 - 120*	*12/10/21 13:59*	*12/10/21 16:01*	*1*

Client Sample ID: M0031 RUN 1 FIELD BLANK TRAP A/8

Lab Sample ID: 140-25698-8

Date Collected: 12/07/21 09:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 15:41	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 15:41	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 15:41	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 15:41	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 15:41	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 15:41	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 15:41	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 15:41	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 15:41	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 15:41	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 15:41	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 15:41	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 15:41	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 15:41	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 15:41	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 15:41	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 15:41	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 15:41	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 15:41	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 15:41	1

Client Sample ID: M0031 RUN 1 FIELD BLANK TRAP A/8
Lab Sample ID: 140-25698-8
Date Collected: 12/07/21 09:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 15:41	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 15:41	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 15:41	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 15:41	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 15:41	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 15:41	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 15:41	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 15:41	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 15:41	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 15:41	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 15:41	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 15:41	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 15:41	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 15:41	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 15:41	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 15:41	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 15:41	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 15:41	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 15:41	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 15:41	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 15:41	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 15:41	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 15:41	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 15:41	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 15:41	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 15:41	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 15:41	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 15:41	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 15:41	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 15:41	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 15:41	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 15:41	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 15:41	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 15:41	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 15:41	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 15:41	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 15:41	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 15:41	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 15:41	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 15:41	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 15:41	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 15:41	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 15:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.144*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 15:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*50 - 127*		*12/18/21 15:41*	*1*

Client Sample ID: M0031 RUN 1 FIELD BLANK TRAP A/8

Lab Sample ID: 140-25698-8

Date Collected: 12/07/21 09:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*90*		*50 - 122*		*12/18/21 15:41*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/18/21 15:41*	*1*
Toluene-d8 (Surr)	*116*		*57 - 134*		*12/18/21 15:41*	*1*

Client Sample ID: M0031 RUN 1 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-9

Date Collected: 12/07/21 09:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 16:05	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 16:05	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 16:05	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 16:05	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 16:05	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 16:05	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 16:05	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 16:05	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 16:05	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 16:05	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 16:05	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 16:05	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 16:05	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 16:05	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 16:05	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 16:05	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 16:05	1
Chloromethane	**0.0495**	**J**	0.0500	0.0225	ug/Sample			12/18/21 16:05	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 16:05	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 16:05	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 16:05	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 16:05	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 16:05	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 16:05	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 16:05	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 16:05	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 16:05	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 16:05	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 16:05	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 16:05	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 16:05	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 16:05	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 16:05	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 16:05	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 16:05	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 16:05	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 16:05	1

Client Sample ID: M0031 RUN 1 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-9

Date Collected: 12/07/21 09:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 16:05	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 16:05	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 16:05	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 16:05	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 16:05	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 16:05	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 16:05	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 16:05	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 16:05	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 16:05	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 16:05	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 16:05	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 16:05	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 16:05	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 16:05	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 16:05	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 16:05	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 16:05	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 16:05	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 16:05	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 16:05	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 16:05	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 16:05	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 16:05	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 16:05	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 16:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.185*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 16:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*50 - 127*		*12/18/21 16:05*	*1*
4-Bromofluorobenzene (Surr)	*89*		*50 - 122*		*12/18/21 16:05*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/18/21 16:05*	*1*
Toluene-d8 (Surr)	*114*		*57 - 134*		*12/18/21 16:05*	*1*

Client Sample ID: M0031 RUN 2-1 TRAP A/B

Lab Sample ID: 140-25698-10

Date Collected: 12/08/21 13:25
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 14:08	1
Benzene	**0.259**		0.0100	0.00570	ug/Sample			12/20/21 14:08	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 14:08	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 14:08	1
Bromodichloromethane	**0.0381**		0.0100	0.00170	ug/Sample			12/20/21 14:08	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 14:08	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 2-1 TRAP A/B
Date Collected: 12/08/21 13:25
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-10
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	**0.126**		0.0500	0.0110	ug/Sample			12/20/21 14:08	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 14:08	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 14:08	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 14:08	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 14:08	1
Carbon disulfide	**0.105**		0.0250	0.0110	ug/Sample			12/20/21 14:08	1
Carbon tetrachloride	**0.0514**		0.0100	0.00240	ug/Sample			12/20/21 14:08	1
Chlorobenzene	**0.0110**		0.0100	0.00100	ug/Sample			12/20/21 14:08	1
Chlorodibromomethane	**0.00853**	J	0.0250	0.00370	ug/Sample			12/20/21 14:08	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 14:08	1
Chloroform	**0.0997**		0.0100	0.00810	ug/Sample			12/20/21 14:08	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 14:08	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 14:08	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 14:08	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 14:08	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 14:08	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 14:08	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 14:08	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 14:08	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 14:08	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 14:08	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 14:08	1
1,2-Dichloroethane	**0.00398**	J	0.0100	0.00170	ug/Sample			12/20/21 14:08	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 14:08	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 14:08	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 14:08	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 14:08	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 14:08	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 14:08	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 14:08	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 14:08	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 14:08	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 14:08	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 14:08	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 14:08	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 14:08	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 14:08	1
Methylene Chloride	**0.157**		0.100	0.0860	ug/Sample			12/20/21 14:08	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 14:08	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 14:08	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 14:08	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 14:08	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 14:08	1
Tetrachloroethene	**0.0148**		0.0100	0.00100	ug/Sample			12/20/21 14:08	1
Toluene	**0.0606**		0.0250	0.0147	ug/Sample			12/20/21 14:08	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 14:08	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 14:08	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 14:08	1

Client Sample ID: M0031 RUN 2-1 TRAP A/B

Lab Sample ID: 140-25698-10

Date Collected: 12/08/21 13:25
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 14:08	1
Trichloroethene	**0.00883**	**J**	0.0100	0.00310	ug/Sample			12/20/21 14:08	1
Trichlorofluoromethane	**0.00753**	**J**	0.0500	0.00530	ug/Sample			12/20/21 14:08	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 14:08	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 14:08	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 14:08	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 14:08	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 14:08	1
m,p-Xylene	**0.00927**	**J**	0.0200	0.00700	ug/Sample			12/20/21 14:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.0327*	*T J*	*ug/Sample*		*1.33*			*12/20/21 14:08*	*1*
Butane, 2-methyl-	*0.0257*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/20/21 14:08*	*1*
Cyclopentane	*0.136*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 14:08*	*1*
Unknown	*0.0293*	*T J*	*ug/Sample*		*9.23*			*12/20/21 14:08*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*50 - 127*		*12/20/21 14:08*	*1*
4-Bromofluorobenzene (Surr)	*72*		*50 - 122*		*12/20/21 14:08*	*1*
Dibromofluoromethane (Surr)	*108*		*50 - 134*		*12/20/21 14:08*	*1*
Toluene-d8 (Surr)	*103*		*57 - 134*		*12/20/21 14:08*	*1*

Client Sample ID: M0031 RUN 2-1 TRAP C

Lab Sample ID: 140-25698-11

Date Collected: 12/08/21 13:25
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 14:33	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/20/21 14:33	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 14:33	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 14:33	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 14:33	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 14:33	1
Bromomethane	**0.0422**	**J**	0.0500	0.0110	ug/Sample			12/20/21 14:33	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 14:33	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 14:33	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 14:33	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 14:33	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 14:33	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/20/21 14:33	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/20/21 14:33	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 14:33	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 14:33	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 14:33	1
Chloromethane	**0.147**		0.0500	0.0225	ug/Sample			12/20/21 14:33	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 14:33	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 14:33	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 2-1 TRAP C
Date Collected: 12/08/21 13:25
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-11
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 14:33	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 14:33	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 14:33	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 14:33	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 14:33	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 14:33	1
Dichlorodifluoromethane	**0.0202**	**J**	0.0250	0.00620	ug/Sample			12/20/21 14:33	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 14:33	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 14:33	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 14:33	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 14:33	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 14:33	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 14:33	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 14:33	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 14:33	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 14:33	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 14:33	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 14:33	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 14:33	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 14:33	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 14:33	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 14:33	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 14:33	1
Methylene Chloride	**0.0881**	**J**	0.100	0.0860	ug/Sample			12/20/21 14:33	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 14:33	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 14:33	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 14:33	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 14:33	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 14:33	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 14:33	1
Toluene	**0.0228**	**J**	0.0250	0.0147	ug/Sample			12/20/21 14:33	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 14:33	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 14:33	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 14:33	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 14:33	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 14:33	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 14:33	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 14:33	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 14:33	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 14:33	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 14:33	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 14:33	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 14:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.0303*	*T J*	*ug/Sample*		*1.14*			*12/20/21 14:33*	*1*
Cyclopentane	*0.105*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 14:33*	*1*

Client Sample ID: M0031 RUN 2-1 TRAP C

Lab Sample ID: 140-25698-11

Date Collected: 12/08/21 13:25
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		50 - 127		12/20/21 14:33	1
4-Bromofluorobenzene (Surr)	85		50 - 122		12/20/21 14:33	1
Dibromofluoromethane (Surr)	107		50 - 134		12/20/21 14:33	1
Toluene-d8 (Surr)	107		57 - 134		12/20/21 14:33	1

Client Sample ID: M0031 RUN 2-2 TRAP A/B

Lab Sample ID: 140-25698-12

Date Collected: 12/08/21 14:17
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 18:11	1
Benzene	**0.602**		0.0100	0.00570	ug/Sample			12/20/21 18:11	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 18:11	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 18:11	1
Bromodichloromethane	**0.0371**		0.0100	0.00170	ug/Sample			12/20/21 18:11	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 18:11	1
Bromomethane	**0.0568**		0.0500	0.0110	ug/Sample			12/20/21 18:11	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 18:11	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 18:11	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 18:11	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 18:11	1
Carbon disulfide	**0.0965**		0.0250	0.0110	ug/Sample			12/20/21 18:11	1
Carbon tetrachloride	**0.0450**		0.0100	0.00240	ug/Sample			12/20/21 18:11	1
Chlorobenzene	**0.0122**		0.0100	0.00100	ug/Sample			12/20/21 18:11	1
Chlorodibromomethane	**0.00905**	**J**	0.0250	0.00370	ug/Sample			12/20/21 18:11	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 18:11	1
Chloroform	**0.0983**		0.0100	0.00810	ug/Sample			12/20/21 18:11	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 18:11	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 18:11	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 18:11	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 18:11	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 18:11	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 18:11	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 18:11	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 18:11	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 18:11	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 18:11	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 18:11	1
1,2-Dichloroethane	**0.00460**	**J**	0.0100	0.00170	ug/Sample			12/20/21 18:11	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 18:11	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 18:11	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 18:11	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 18:11	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 18:11	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 18:11	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 18:11	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 18:11	1

Client Sample ID: M0031 RUN 2-2 TRAP A/B

Lab Sample ID: 140-25698-12

Date Collected: 12/08/21 14:17
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 18:11	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 18:11	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 18:11	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 18:11	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 18:11	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 18:11	1
Methylene Chloride	**0.188**		0.100	0.0860	ug/Sample			12/20/21 18:11	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 18:11	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 18:11	1
Styrene	**0.00248**	**J**	0.0100	0.00210	ug/Sample			12/20/21 18:11	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 18:11	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 18:11	1
Tetrachloroethene	**0.0154**		0.0100	0.00100	ug/Sample			12/20/21 18:11	1
Toluene	**0.0585**		0.0250	0.0147	ug/Sample			12/20/21 18:11	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 18:11	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 18:11	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 18:11	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 18:11	1
Trichloroethene	**0.00977**	**J**	0.0100	0.00310	ug/Sample			12/20/21 18:11	1
Trichlorofluoromethane	**0.00912**	**J**	0.0500	0.00530	ug/Sample			12/20/21 18:11	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 18:11	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 18:11	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 18:11	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 18:11	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 18:11	1
m,p-Xylene	**0.00752**	**J**	0.0200	0.00700	ug/Sample			12/20/21 18:11	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methyl-	*0.0358*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/20/21 18:11*	*1*
Cyclopentane	*0.190*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 18:11*	*1*
Unknown	*0.0282*	*T J*	*ug/Sample*		*9.24*			*12/20/21 18:11*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*50 - 127*		*12/20/21 18:11*	*1*
4-Bromofluorobenzene (Surr)	*75*		*50 - 122*		*12/20/21 18:11*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 134*		*12/20/21 18:11*	*1*
Toluene-d8 (Surr)	*102*		*57 - 134*		*12/20/21 18:11*	*1*

Client Sample ID: M0031 RUN 2-2 TRAP C

Lab Sample ID: 140-25698-13

Date Collected: 12/08/21 14:17
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 18:35	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/20/21 18:35	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 18:35	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 18:35	1

Client Sample ID: M0031 RUN 2-2 TRAP C
Date Collected: 12/08/21 14:17
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-13
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 18:35	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 18:35	1
Bromomethane	**0.0210**	**J**	0.0500	0.0110	ug/Sample			12/20/21 18:35	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 18:35	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 18:35	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 18:35	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 18:35	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 18:35	1
Carbon tetrachloride	**0.00272**	**J**	0.0100	0.00240	ug/Sample			12/20/21 18:35	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/20/21 18:35	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 18:35	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 18:35	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 18:35	1
Chloromethane	**0.103**		0.0500	0.0225	ug/Sample			12/20/21 18:35	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 18:35	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 18:35	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 18:35	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 18:35	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 18:35	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 18:35	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 18:35	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 18:35	1
Dichlorodifluoromethane	**0.0193**	**J**	0.0250	0.00620	ug/Sample			12/20/21 18:35	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 18:35	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 18:35	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 18:35	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 18:35	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 18:35	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 18:35	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 18:35	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 18:35	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 18:35	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 18:35	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 18:35	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 18:35	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 18:35	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 18:35	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 18:35	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 18:35	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/20/21 18:35	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 18:35	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 18:35	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 18:35	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 18:35	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 18:35	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 18:35	1
Toluene	**0.0157**	**J**	0.0250	0.0147	ug/Sample			12/20/21 18:35	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 18:35	1

Client Sample ID: M0031 RUN 2-2 TRAP C

Lab Sample ID: 140-25698-13

Date Collected: 12/08/21 14:17
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 18:35	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 18:35	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 18:35	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 18:35	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 18:35	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 18:35	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 18:35	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 18:35	1
Vinyl chloride	**0.00655**	**J**	0.0250	0.00640	ug/Sample			12/20/21 18:35	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 18:35	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 18:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0680*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 18:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*50 - 127*		*12/20/21 18:35*	*1*
4-Bromofluorobenzene (Surr)	*85*		*50 - 122*		*12/20/21 18:35*	*1*
Dibromofluoromethane (Surr)	*110*		*50 - 134*		*12/20/21 18:35*	*1*
Toluene-d8 (Surr)	*108*		*57 - 134*		*12/20/21 18:35*	*1*

Client Sample ID: M0031 RUN 2-3 TRAP A/B

Lab Sample ID: 140-25698-14

Date Collected: 12/08/21 15:14
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 17:22	1
Benzene	**1.31**		0.0100	0.00570	ug/Sample			12/20/21 17:22	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 17:22	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 17:22	1
Bromodichloromethane	**0.0360**		0.0100	0.00170	ug/Sample			12/20/21 17:22	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 17:22	1
Bromomethane	**0.0624**		0.0500	0.0110	ug/Sample			12/20/21 17:22	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 17:22	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 17:22	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 17:22	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 17:22	1
Carbon disulfide	**0.120**		0.0250	0.0110	ug/Sample			12/20/21 17:22	1
Carbon tetrachloride	**0.0487**		0.0100	0.00240	ug/Sample			12/20/21 17:22	1
Chlorobenzene	**0.0151**		0.0100	0.00100	ug/Sample			12/20/21 17:22	1
Chlorodibromomethane	**0.00897**	**J**	0.0250	0.00370	ug/Sample			12/20/21 17:22	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 17:22	1
Chloroform	**0.0907**		0.0100	0.00810	ug/Sample			12/20/21 17:22	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 17:22	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 17:22	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 17:22	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 17:22	1

Client Sample ID: M0031 RUN 2-3 TRAP A/B
Date Collected: 12/08/21 15:14
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-14
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 17:22	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 17:22	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 17:22	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 17:22	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 17:22	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 17:22	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 17:22	1
1,2-Dichloroethane	**0.00971**	**J**	0.0100	0.00170	ug/Sample			12/20/21 17:22	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 17:22	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 17:22	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 17:22	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 17:22	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 17:22	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 17:22	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 17:22	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 17:22	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 17:22	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 17:22	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 17:22	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 17:22	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 17:22	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 17:22	1
Methylene Chloride	**0.195**		0.100	0.0860	ug/Sample			12/20/21 17:22	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 17:22	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 17:22	1
Styrene	**0.00695**	**J**	0.0100	0.00210	ug/Sample			12/20/21 17:22	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 17:22	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 17:22	1
Tetrachloroethene	**0.0201**		0.0100	0.00100	ug/Sample			12/20/21 17:22	1
Toluene	**0.0957**		0.0250	0.0147	ug/Sample			12/20/21 17:22	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 17:22	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 17:22	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 17:22	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 17:22	1
Trichloroethene	**0.0124**		0.0100	0.00310	ug/Sample			12/20/21 17:22	1
Trichlorofluoromethane	**0.00854**	**J**	0.0500	0.00530	ug/Sample			12/20/21 17:22	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 17:22	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 17:22	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 17:22	1
Vinyl chloride	**0.00696**	**J**	0.0250	0.00640	ug/Sample			12/20/21 17:22	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 17:22	1
m,p-Xylene	**0.00798**	**J**	0.0200	0.00700	ug/Sample			12/20/21 17:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methyl-	*0.0293*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/20/21 17:22*	*1*
Furan	*0.0251*	*T J N*	*ug/Sample*		*1.87*	*110-00-9*		*12/20/21 17:22*	*1*
Allyl chloride	*0.0261*	*T J N*	*ug/Sample*		*2.30*	*107-05-1*		*12/20/21 17:22*	*1*
Cyclopentane	*0.172*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 17:22*	*1*

Client Sample ID: M0031 RUN 2-3 TRAP A/B

Lab Sample ID: 140-25698-14

Date Collected: 12/08/21 15:14
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*50 - 127*		*12/20/21 17:22*	*1*
4-Bromofluorobenzene (Surr)	*80*		*50 - 122*		*12/20/21 17:22*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/20/21 17:22*	*1*
Toluene-d8 (Surr)	*109*		*57 - 134*		*12/20/21 17:22*	*1*

Client Sample ID: M0031 RUN 2-3 TRAP C

Lab Sample ID: 140-25698-15

Date Collected: 12/08/21 15:14
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 17:47	1
Benzene	**0.00975**	**J**	0.0100	0.00570	ug/Sample			12/20/21 17:47	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 17:47	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 17:47	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 17:47	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 17:47	1
Bromomethane	**0.0196**	**J**	0.0500	0.0110	ug/Sample			12/20/21 17:47	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 17:47	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 17:47	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 17:47	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 17:47	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 17:47	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/20/21 17:47	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/20/21 17:47	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 17:47	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 17:47	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 17:47	1
Chloromethane	**0.0619**		0.0500	0.0225	ug/Sample			12/20/21 17:47	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 17:47	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 17:47	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 17:47	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 17:47	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 17:47	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 17:47	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 17:47	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 17:47	1
Dichlorodifluoromethane	**0.0161**	**J**	0.0250	0.00620	ug/Sample			12/20/21 17:47	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 17:47	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 17:47	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 17:47	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 17:47	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 17:47	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 17:47	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 17:47	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 17:47	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 17:47	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 17:47	1

Client Sample ID: M0031 RUN 2-3 TRAP C

Lab Sample ID: 140-25698-15

Date Collected: 12/08/21 15:14
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 17:47	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 17:47	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 17:47	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 17:47	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 17:47	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 17:47	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/20/21 17:47	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 17:47	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 17:47	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 17:47	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 17:47	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 17:47	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 17:47	1
Toluene	**0.0281**		0.0250	0.0147	ug/Sample			12/20/21 17:47	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 17:47	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 17:47	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 17:47	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 17:47	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 17:47	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 17:47	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 17:47	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 17:47	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 17:47	1
Vinyl chloride	**0.0151**	**J**	0.0250	0.00640	ug/Sample			12/20/21 17:47	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 17:47	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 17:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0530*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 17:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*50 - 127*		*12/20/21 17:47*	*1*
4-Bromofluorobenzene (Surr)	*82*		*50 - 122*		*12/20/21 17:47*	*1*
Dibromofluoromethane (Surr)	*105*		*50 - 134*		*12/20/21 17:47*	*1*
Toluene-d8 (Surr)	*104*		*57 - 134*		*12/20/21 17:47*	*1*

Client Sample ID: M0031 RUN 2 CONDENSATE

Lab Sample ID: 140-25698-16

Date Collected: 12/08/21 15:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**0.313**	**J**	0.420	0.137	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Benzene	ND		0.0420	0.00798	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Bromobenzene	ND		0.0420	0.00672	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Bromochloromethane	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Bromodichloromethane	ND		0.0420	0.0101	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Bromoform	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1

Client Sample ID: M0031 RUN 2 CONDENSATE
Lab Sample ID: 140-25698-16
Date Collected: 12/08/21 15:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		0.0840	0.0504	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
2-Butanone (MEK)	ND		0.210	0.0830	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
n-Butylbenzene	ND		0.0420	0.0158	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
sec-Butylbenzene	ND		0.0420	0.0126	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
tert-Butylbenzene	ND		0.0420	0.0105	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Carbon disulfide	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Carbon tetrachloride	ND		0.0420	0.0305	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Chlorobenzene	ND		0.0420	0.00578	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Chlorodibromomethane	ND		0.0420	0.0137	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Chloroethane	ND		0.0840	0.0315	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Chloroform	ND		0.0420	0.00987	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Chloromethane	ND		0.0840	0.0305	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
2-Chlorotoluene	ND		0.0420	0.0105	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
4-Chlorotoluene	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2-Dibromo-3-Chloropropane	ND		0.0840	0.0221	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2-Dibromoethane (EDB)	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Dibromomethane	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2-Dichlorobenzene	ND		0.0420	0.00714	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,3-Dichlorobenzene	ND		0.0420	0.00693	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,4-Dichlorobenzene	ND		0.0420	0.00683	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Dichlorodifluoromethane	ND		0.0840	0.0410	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,1-Dichloroethane	ND		0.0420	0.00998	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2-Dichloroethane	ND		0.0420	0.0101	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,1-Dichloroethene	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
cis-1,2-Dichloroethene	ND		0.0420	0.00819	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
trans-1,2-Dichloroethene	ND		0.0420	0.00777	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2-Dichloropropane	ND		0.0420	0.00861	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,3-Dichloropropane	ND		0.0420	0.00861	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
2,2-Dichloropropane	ND		0.0420	0.0105	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,1-Dichloropropene	ND		0.0420	0.0105	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
cis-1,3-Dichloropropene	ND		0.0420	0.00662	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
trans-1,3-Dichloropropene	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Ethylbenzene	ND		0.0420	0.00861	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Hexachlorobutadiene	ND		0.0840	0.0126	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
2-Hexanone	ND		0.210	0.0840	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Isopropylbenzene	ND		0.0420	0.00998	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
4-Isopropyltoluene	ND		0.0420	0.0126	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Methylene Chloride	ND		0.0840	0.0840	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
4-Methyl-2-pentanone (MIBK)	ND		0.210	0.0714	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
N-Propylbenzene	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Styrene	ND		0.0420	0.0105	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,1,1,2-Tetrachloroethane	ND		0.0420	0.00777	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,1,2,2-Tetrachloroethane	ND		0.0420	0.0231	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Tetrachloroethene	ND		0.0420	0.00998	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Toluene	ND		0.0420	0.0168	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2,3-Trichlorobenzene	ND		0.0420	0.0242	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2,4-Trichlorobenzene	ND		0.0420	0.0168	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,1,1-Trichloroethane	ND		0.0420	0.0126	ug/Sample		12/10/21 13:59	12/10/21 16:29	1

Client Sample ID: M0031 RUN 2 CONDENSATE

Lab Sample ID: 140-25698-16

Date Collected: 12/08/21 15:20
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		0.0420	0.00914	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Trichloroethene	ND		0.0420	0.00914	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Trichlorofluoromethane	ND		0.0840	0.0326	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2,3-Trichloropropane	ND		0.0420	0.0284	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,2,4-Trimethylbenzene	ND		0.0420	0.0116	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
1,3,5-Trimethylbenzene	ND		0.0420	0.0105	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
Vinyl chloride	ND		0.0840	0.0242	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
o-Xylene	ND		0.0420	0.00893	ug/Sample		12/10/21 13:59	12/10/21 16:29	1
m,p-Xylene	ND		0.0840	0.00945	ug/Sample		12/10/21 13:59	12/10/21 16:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*				*12/10/21 13:59*	*12/10/21 16:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*73 - 136*	*12/10/21 13:59*	*12/10/21 16:29*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*	*12/10/21 13:59*	*12/10/21 16:29*	*1*
Dibromofluoromethane (Surr)	*99*		*76 - 121*	*12/10/21 13:59*	*12/10/21 16:29*	*1*
Toluene-d8 (Surr)	*96*		*79 - 120*	*12/10/21 13:59*	*12/10/21 16:29*	*1*

Client Sample ID: M0031 RUN 2 FIELD BLANK TRAP A/B

Lab Sample ID: 140-25698-17

Date Collected: 12/07/21 12:38
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 14:52	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 14:52	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 14:52	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 14:52	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 14:52	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 14:52	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 14:52	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 14:52	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 14:52	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 14:52	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 14:52	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 14:52	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 14:52	1
Chlorobenzene	**0.00165**	**J B**	0.0100	0.00100	ug/Sample			12/18/21 14:52	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 14:52	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 14:52	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 14:52	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 14:52	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 14:52	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 14:52	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 14:52	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 14:52	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 14:52	1

Client Sample ID: M0031 RUN 2 FIELD BLANK TRAP A/B
Lab Sample ID: 140-25698-17
Date Collected: 12/07/21 12:38
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 14:52	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 14:52	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 14:52	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 14:52	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 14:52	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 14:52	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 14:52	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 14:52	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 14:52	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 14:52	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 14:52	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 14:52	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 14:52	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 14:52	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 14:52	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 14:52	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 14:52	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 14:52	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 14:52	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 14:52	1
Methylene Chloride	**0.398**		0.100	0.0860	ug/Sample			12/18/21 14:52	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 14:52	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 14:52	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 14:52	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 14:52	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 14:52	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 14:52	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 14:52	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 14:52	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 14:52	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 14:52	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 14:52	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 14:52	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 14:52	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 14:52	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 14:52	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 14:52	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 14:52	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 14:52	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 14:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methyl-	*0.0645*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/18/21 14:52*	*1*
Pentane	*0.0255*	*T J N*	*ug/Sample*		*1.67*	*109-66-0*		*12/18/21 14:52*	*1*
Cyclopentane	*0.353*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 14:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*50 - 127*		*12/18/21 14:52*	*1*
4-Bromofluorobenzene (Surr)	*92*		*50 - 122*		*12/18/21 14:52*	*1*

Client Sample ID: M0031 RUN 2 FIELD BLANK TRAP A/B

Lab Sample ID: 140-25698-17

Date Collected: 12/07/21 12:38
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*104*		*50 - 134*		*12/18/21 14:52*	*1*
Toluene-d8 (Surr)	*115*		*57 - 134*		*12/18/21 14:52*	*1*

Client Sample ID: M0031 RUN 2 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-18

Date Collected: 12/07/21 12:38
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 15:16	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 15:16	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 15:16	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 15:16	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 15:16	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 15:16	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 15:16	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 15:16	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 15:16	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 15:16	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 15:16	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 15:16	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 15:16	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 15:16	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 15:16	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 15:16	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 15:16	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 15:16	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 15:16	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 15:16	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 15:16	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 15:16	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 15:16	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 15:16	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 15:16	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 15:16	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 15:16	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 15:16	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 15:16	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 15:16	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 15:16	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 15:16	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 15:16	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 15:16	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 15:16	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 15:16	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 15:16	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 15:16	1

Client Sample ID: M0031 RUN 2 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-18

Date Collected: 12/07/21 12:38
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 15:16	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 15:16	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 15:16	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 15:16	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 15:16	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 15:16	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 15:16	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 15:16	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 15:16	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 15:16	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 15:16	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 15:16	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 15:16	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 15:16	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 15:16	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 15:16	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 15:16	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 15:16	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 15:16	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 15:16	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 15:16	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 15:16	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 15:16	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 15:16	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 15:16	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.138*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 15:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*50 - 127*		*12/18/21 15:16*	*1*
4-Bromofluorobenzene (Surr)	*93*		*50 - 122*		*12/18/21 15:16*	*1*
Dibromofluoromethane (Surr)	*105*		*50 - 134*		*12/18/21 15:16*	*1*
Toluene-d8 (Surr)	*115*		*57 - 134*		*12/18/21 15:16*	*1*

Client Sample ID: M0031 RUN 3-1 TRAP A/B

Lab Sample ID: 140-25698-19

Date Collected: 12/08/21 16:27
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 16:34	1
Benzene	**0.191**		0.0100	0.00570	ug/Sample			12/20/21 16:34	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 16:34	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 16:34	1
Bromodichloromethane	**0.0339**		0.0100	0.00170	ug/Sample			12/20/21 16:34	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 16:34	1
Bromomethane	**0.0454**	**J**	0.0500	0.0110	ug/Sample			12/20/21 16:34	1

Client Sample ID: M0031 RUN 3-1 TRAP A/B
Date Collected: 12/08/21 16:27
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-19
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 16:34	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 16:34	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 16:34	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 16:34	1
Carbon disulfide	**0.104**		0.0250	0.0110	ug/Sample			12/20/21 16:34	1
Carbon tetrachloride	**0.0468**		0.0100	0.00240	ug/Sample			12/20/21 16:34	1
Chlorobenzene	**0.0106**		0.0100	0.00100	ug/Sample			12/20/21 16:34	1
Chlorodibromomethane	**0.00871**	**J**	0.0250	0.00370	ug/Sample			12/20/21 16:34	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 16:34	1
Chloroform	**0.0848**		0.0100	0.00810	ug/Sample			12/20/21 16:34	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 16:34	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 16:34	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 16:34	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 16:34	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 16:34	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 16:34	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 16:34	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 16:34	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 16:34	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 16:34	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 16:34	1
1,2-Dichloroethane	**0.00406**	**J**	0.0100	0.00170	ug/Sample			12/20/21 16:34	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 16:34	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 16:34	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 16:34	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 16:34	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 16:34	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 16:34	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 16:34	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 16:34	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 16:34	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 16:34	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 16:34	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 16:34	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 16:34	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 16:34	1
Methylene Chloride	**0.319**		0.100	0.0860	ug/Sample			12/20/21 16:34	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 16:34	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 16:34	1
Styrene	**0.00311**	**J**	0.0100	0.00210	ug/Sample			12/20/21 16:34	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 16:34	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 16:34	1
Tetrachloroethene	**0.0158**		0.0100	0.00100	ug/Sample			12/20/21 16:34	1
Toluene	**0.175**		0.0250	0.0147	ug/Sample			12/20/21 16:34	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 16:34	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 16:34	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 16:34	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 16:34	1

Client Sample ID: M0031 RUN 3-1 TRAP A/B

Lab Sample ID: 140-25698-19

Date Collected: 12/08/21 16:27
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**0.00760**	**J**	0.0100	0.00310	ug/Sample			12/20/21 16:34	1
Trichlorofluoromethane	**0.00893**	**J**	0.0500	0.00530	ug/Sample			12/20/21 16:34	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 16:34	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 16:34	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 16:34	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 16:34	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 16:34	1
m,p-Xylene	**0.00719**	**J**	0.0200	0.00700	ug/Sample			12/20/21 16:34	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0798*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 16:34*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*50 - 127*		*12/20/21 16:34*	*1*
4-Bromofluorobenzene (Surr)	*83*		*50 - 122*		*12/20/21 16:34*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 134*		*12/20/21 16:34*	*1*
Toluene-d8 (Surr)	*105*		*57 - 134*		*12/20/21 16:34*	*1*

Client Sample ID: M0031 RUN 3-1 TRAP C

Lab Sample ID: 140-25698-20

Date Collected: 12/08/21 16:27
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 16:58	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/20/21 16:58	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 16:58	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 16:58	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 16:58	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 16:58	1
Bromomethane	**0.0304**	**J**	0.0500	0.0110	ug/Sample			12/20/21 16:58	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 16:58	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 16:58	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 16:58	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 16:58	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 16:58	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/20/21 16:58	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/20/21 16:58	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 16:58	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 16:58	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 16:58	1
Chloromethane	**0.115**		0.0500	0.0225	ug/Sample			12/20/21 16:58	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 16:58	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 16:58	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 16:58	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 16:58	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 16:58	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 16:58	1

Client Sample ID: M0031 RUN 3-1 TRAP C
Date Collected: 12/08/21 16:27
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-20
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 16:58	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 16:58	1
Dichlorodifluoromethane	**0.0173**	**J**	0.0250	0.00620	ug/Sample			12/20/21 16:58	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 16:58	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 16:58	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 16:58	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 16:58	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 16:58	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 16:58	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 16:58	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 16:58	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 16:58	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 16:58	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 16:58	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 16:58	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 16:58	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 16:58	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 16:58	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 16:58	1
Methylene Chloride	**0.114**		0.100	0.0860	ug/Sample			12/20/21 16:58	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 16:58	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 16:58	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 16:58	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 16:58	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 16:58	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 16:58	1
Toluene	**0.0193**	**J**	0.0250	0.0147	ug/Sample			12/20/21 16:58	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 16:58	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 16:58	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 16:58	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 16:58	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 16:58	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 16:58	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 16:58	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 16:58	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 16:58	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 16:58	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 16:58	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 16:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1-Pentene	*0.0419*	*T J N*	*ug/Sample*		*2.38*	*109-67-1*		*12/20/21 16:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*50 - 127*		*12/20/21 16:58*	*1*
4-Bromofluorobenzene (Surr)	*84*		*50 - 122*		*12/20/21 16:58*	*1*
Dibromofluoromethane (Surr)	*109*		*50 - 134*		*12/20/21 16:58*	*1*
Toluene-d8 (Surr)	*107*		*57 - 134*		*12/20/21 16:58*	*1*

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 3-2 TRAP A/B
Date Collected: 12/08/21 17:15
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-21
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 15:45	1
Benzene	**0.799**		0.0100	0.00570	ug/Sample			12/20/21 15:45	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 15:45	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 15:45	1
Bromodichloromethane	**0.0337**		0.0100	0.00170	ug/Sample			12/20/21 15:45	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 15:45	1
Bromomethane	**0.0423**	**J**	0.0500	0.0110	ug/Sample			12/20/21 15:45	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 15:45	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 15:45	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 15:45	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 15:45	1
Carbon disulfide	**0.0862**		0.0250	0.0110	ug/Sample			12/20/21 15:45	1
Carbon tetrachloride	**0.0509**		0.0100	0.00240	ug/Sample			12/20/21 15:45	1
Chlorobenzene	**0.00921**	**J**	0.0100	0.00100	ug/Sample			12/20/21 15:45	1
Chlorodibromomethane	**0.00781**	**J**	0.0250	0.00370	ug/Sample			12/20/21 15:45	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 15:45	1
Chloroform	**0.0900**		0.0100	0.00810	ug/Sample			12/20/21 15:45	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 15:45	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 15:45	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 15:45	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 15:45	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 15:45	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 15:45	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 15:45	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 15:45	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 15:45	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 15:45	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 15:45	1
1,2-Dichloroethane	**0.00743**	**J**	0.0100	0.00170	ug/Sample			12/20/21 15:45	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 15:45	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 15:45	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 15:45	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 15:45	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 15:45	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 15:45	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 15:45	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 15:45	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 15:45	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 15:45	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 15:45	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 15:45	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 15:45	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 15:45	1
Methylene Chloride	**0.156**		0.100	0.0860	ug/Sample			12/20/21 15:45	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 15:45	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 15:45	1
Styrene	**0.00310**	**J**	0.0100	0.00210	ug/Sample			12/20/21 15:45	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 15:45	1

Client Sample ID: M0031 RUN 3-2 TRAP A/B

Lab Sample ID: 140-25698-21

Date Collected: 12/08/21 17:15
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 15:45	1
Tetrachloroethene	**0.0182**		0.0100	0.00100	ug/Sample			12/20/21 15:45	1
Toluene	**0.0703**		0.0250	0.0147	ug/Sample			12/20/21 15:45	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 15:45	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 15:45	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 15:45	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 15:45	1
Trichloroethene	**0.0105**		0.0100	0.00310	ug/Sample			12/20/21 15:45	1
Trichlorofluoromethane	**0.00718**	**J**	0.0500	0.00530	ug/Sample			12/20/21 15:45	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 15:45	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 15:45	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 15:45	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 15:45	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 15:45	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 15:45	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,3-Butadiene	*0.0427*	*T J N*	*ug/Sample*		*1.25*	*106-99-0*		*12/20/21 15:45*	*1*
Cyclopentane	*0.0666*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 15:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*50 - 127*		*12/20/21 15:45*	*1*
4-Bromofluorobenzene (Surr)	*79*		*50 - 122*		*12/20/21 15:45*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/20/21 15:45*	*1*
Toluene-d8 (Surr)	*109*		*57 - 134*		*12/20/21 15:45*	*1*

Client Sample ID: M0031 RUN 3-2 TRAP C

Lab Sample ID: 140-25698-22

Date Collected: 12/08/21 17:15
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 16:10	1
Benzene	**0.0130**		0.0100	0.00570	ug/Sample			12/20/21 16:10	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 16:10	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 16:10	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 16:10	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 16:10	1
Bromomethane	**0.0228**	**J**	0.0500	0.0110	ug/Sample			12/20/21 16:10	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 16:10	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 16:10	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 16:10	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 16:10	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 16:10	1
Carbon tetrachloride	**0.00251**	**J**	0.0100	0.00240	ug/Sample			12/20/21 16:10	1
Chlorobenzene	**0.00113**	**J**	0.0100	0.00100	ug/Sample			12/20/21 16:10	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 16:10	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 16:10	1

Client Sample ID: M0031 RUN 3-2 TRAP C
Date Collected: 12/08/21 17:15
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-22
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 16:10	1
Chloromethane	**0.0892**		0.0500	0.0225	ug/Sample			12/20/21 16:10	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 16:10	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 16:10	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 16:10	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 16:10	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 16:10	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 16:10	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 16:10	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 16:10	1
Dichlorodifluoromethane	**0.0160**	**J**	0.0250	0.00620	ug/Sample			12/20/21 16:10	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 16:10	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 16:10	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 16:10	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 16:10	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 16:10	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 16:10	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 16:10	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 16:10	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 16:10	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 16:10	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 16:10	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 16:10	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 16:10	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 16:10	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 16:10	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 16:10	1
Methylene Chloride	**0.100**		0.100	0.0860	ug/Sample			12/20/21 16:10	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 16:10	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 16:10	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 16:10	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 16:10	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 16:10	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 16:10	1
Toluene	**0.0308**		0.0250	0.0147	ug/Sample			12/20/21 16:10	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 16:10	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 16:10	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 16:10	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 16:10	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 16:10	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 16:10	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 16:10	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 16:10	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 16:10	1
Vinyl chloride	**0.0164**	**J**	0.0250	0.00640	ug/Sample			12/20/21 16:10	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 16:10	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 16:10	1

Client Sample ID: M0031 RUN 3-2 TRAP C

Lab Sample ID: 140-25698-22

Date Collected: 12/08/21 17:15
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Cyclopentane	0.145	T J N	ug/Sample		2.37	287-92-3		12/20/21 16:10	1
Unknown	0.0472	T J	ug/Sample		9.23			12/20/21 16:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		50 - 127		12/20/21 16:10	1
4-Bromofluorobenzene (Surr)	92		50 - 122		12/20/21 16:10	1
Dibromofluoromethane (Surr)	114		50 - 134		12/20/21 16:10	1
Toluene-d8 (Surr)	113		57 - 134		12/20/21 16:10	1

Client Sample ID: M0031 RUN 3-3 TRAP A/B

Lab Sample ID: 140-25698-23

Date Collected: 12/08/21 18:06
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 14:57	1
Benzene	**0.769**		0.0100	0.00570	ug/Sample			12/20/21 14:57	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 14:57	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 14:57	1
Bromodichloromethane	**0.0394**		0.0100	0.00170	ug/Sample			12/20/21 14:57	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 14:57	1
Bromomethane	**0.0408**	**J**	0.0500	0.0110	ug/Sample			12/20/21 14:57	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 14:57	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 14:57	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 14:57	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 14:57	1
Carbon disulfide	**0.0707**		0.0250	0.0110	ug/Sample			12/20/21 14:57	1
Carbon tetrachloride	**0.0522**		0.0100	0.00240	ug/Sample			12/20/21 14:57	1
Chlorobenzene	**0.0125**		0.0100	0.00100	ug/Sample			12/20/21 14:57	1
Chlorodibromomethane	**0.00910**	**J**	0.0250	0.00370	ug/Sample			12/20/21 14:57	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 14:57	1
Chloroform	**0.104**		0.0100	0.00810	ug/Sample			12/20/21 14:57	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 14:57	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 14:57	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 14:57	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 14:57	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 14:57	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 14:57	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 14:57	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 14:57	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 14:57	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 14:57	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 14:57	1
1,2-Dichloroethane	**0.00749**	**J**	0.0100	0.00170	ug/Sample			12/20/21 14:57	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 14:57	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 14:57	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 14:57	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 14:57	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 14:57	1

Client Sample ID: M0031 RUN 3-3 TRAP A/B

Lab Sample ID: 140-25698-23

Date Collected: 12/08/21 18:06
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 14:57	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 14:57	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 14:57	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 14:57	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 14:57	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 14:57	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 14:57	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 14:57	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 14:57	1
Methylene Chloride	**0.166**		0.100	0.0860	ug/Sample			12/20/21 14:57	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 14:57	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 14:57	1
Styrene	**0.00298**	**J**	0.0100	0.00210	ug/Sample			12/20/21 14:57	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 14:57	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 14:57	1
Tetrachloroethene	**0.0211**		0.0100	0.00100	ug/Sample			12/20/21 14:57	1
Toluene	**0.0896**		0.0250	0.0147	ug/Sample			12/20/21 14:57	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 14:57	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 14:57	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 14:57	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 14:57	1
Trichloroethene	**0.0100**		0.0100	0.00310	ug/Sample			12/20/21 14:57	1
Trichlorofluoromethane	**0.00695**	**J**	0.0500	0.00530	ug/Sample			12/20/21 14:57	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 14:57	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 14:57	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 14:57	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 14:57	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 14:57	1
m,p-Xylene	**0.00745**	**J**	0.0200	0.00700	ug/Sample			12/20/21 14:57	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0538*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 14:57*	*1*
n-Hexane	*0.0261*	*T J N*	*ug/Sample*		*2.74*	*110-54-3*		*12/20/21 14:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*50 - 127*		*12/20/21 14:57*	*1*
4-Bromofluorobenzene (Surr)	*81*		*50 - 122*		*12/20/21 14:57*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 134*		*12/20/21 14:57*	*1*
Toluene-d8 (Surr)	*106*		*57 - 134*		*12/20/21 14:57*	*1*

Client Sample ID: M0031 RUN 3-3 TRAP C

Lab Sample ID: 140-25698-24

Date Collected: 12/08/21 18:06
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 15:21	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/20/21 15:21	1

Client Sample ID: M0031 RUN 3-3 TRAP C
Date Collected: 12/08/21 18:06
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-24
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 15:21	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 15:21	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 15:21	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 15:21	1
Bromomethane	**0.0468**	**J**	0.0500	0.0110	ug/Sample			12/20/21 15:21	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 15:21	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 15:21	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 15:21	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 15:21	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 15:21	1
Carbon tetrachloride	**0.00262**	**J**	0.0100	0.00240	ug/Sample			12/20/21 15:21	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/20/21 15:21	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 15:21	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 15:21	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 15:21	1
Chloromethane	**0.146**		0.0500	0.0225	ug/Sample			12/20/21 15:21	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 15:21	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 15:21	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 15:21	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 15:21	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 15:21	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 15:21	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 15:21	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 15:21	1
Dichlorodifluoromethane	**0.0224**	**J**	0.0250	0.00620	ug/Sample			12/20/21 15:21	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 15:21	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 15:21	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 15:21	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 15:21	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 15:21	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 15:21	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 15:21	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 15:21	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 15:21	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 15:21	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 15:21	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 15:21	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 15:21	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 15:21	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 15:21	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 15:21	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/20/21 15:21	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 15:21	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 15:21	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 15:21	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 15:21	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 15:21	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 15:21	1

Client Sample ID: M0031 RUN 3-3 TRAP C

Lab Sample ID: 140-25698-24
Matrix: Air

Date Collected: 12/08/21 18:06
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		0.0250	0.0147	ug/Sample			12/20/21 15:21	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 15:21	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 15:21	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 15:21	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 15:21	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 15:21	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 15:21	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 15:21	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 15:21	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 15:21	1
Vinyl chloride	**0.0109**	**J**	0.0250	0.00640	ug/Sample			12/20/21 15:21	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 15:21	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 15:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0271*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/20/21 15:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*50 - 127*		*12/20/21 15:21*	*1*
4-Bromofluorobenzene (Surr)	*84*		*50 - 122*		*12/20/21 15:21*	*1*
Dibromofluoromethane (Surr)	*108*		*50 - 134*		*12/20/21 15:21*	*1*
Toluene-d8 (Surr)	*109*		*57 - 134*		*12/20/21 15:21*	*1*

Client Sample ID: M0031 RUN 3 CONDENSATE

Lab Sample ID: 140-25698-25
Matrix: Air

Date Collected: 12/08/21 18:10
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**0.367**	**J**	0.414	0.135	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Benzene	ND		0.0414	0.00787	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Bromobenzene	ND		0.0414	0.00662	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Bromochloromethane	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Bromodichloromethane	ND		0.0414	0.00994	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Bromoform	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Bromomethane	ND		0.0828	0.0497	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
2-Butanone (MEK)	ND		0.207	0.0818	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
n-Butylbenzene	ND		0.0414	0.0155	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
sec-Butylbenzene	ND		0.0414	0.0124	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
tert-Butylbenzene	ND		0.0414	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Carbon disulfide	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Carbon tetrachloride	ND		0.0414	0.0300	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Chlorobenzene	ND		0.0414	0.00569	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Chlorodibromomethane	ND		0.0414	0.0135	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Chloroethane	ND		0.0828	0.0311	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Chloroform	ND		0.0414	0.00973	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Chloromethane	ND		0.0828	0.0300	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
2-Chlorotoluene	ND		0.0414	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:57	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 3 CONDENSATE
Lab Sample ID: 140-25698-25
Date Collected: 12/08/21 18:10
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2-Dibromo-3-Chloropropane	ND		0.0828	0.0217	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2-Dibromoethane (EDB)	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Dibromomethane	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2-Dichlorobenzene	ND		0.0414	0.00704	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,3-Dichlorobenzene	ND		0.0414	0.00683	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,4-Dichlorobenzene	ND		0.0414	0.00673	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Dichlorodifluoromethane	ND		0.0828	0.0404	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,1-Dichloroethane	ND		0.0414	0.00983	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2-Dichloroethane	ND		0.0414	0.00994	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,1-Dichloroethene	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
cis-1,2-Dichloroethene	ND		0.0414	0.00807	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
trans-1,2-Dichloroethene	ND		0.0414	0.00766	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2-Dichloropropane	ND		0.0414	0.00849	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,3-Dichloropropane	ND		0.0414	0.00849	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
2,2-Dichloropropane	ND		0.0414	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,1-Dichloropropene	ND		0.0414	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
cis-1,3-Dichloropropene	ND		0.0414	0.00652	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
trans-1,3-Dichloropropene	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Ethylbenzene	ND		0.0414	0.00849	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Hexachlorobutadiene	ND		0.0828	0.0124	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
2-Hexanone	ND		0.207	0.0828	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Isopropylbenzene	ND		0.0414	0.00983	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
4-Isopropyltoluene	ND		0.0414	0.0124	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Methylene Chloride	ND		0.0828	0.0828	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
4-Methyl-2-pentanone (MIBK)	ND		0.207	0.0704	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
N-Propylbenzene	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Styrene	ND		0.0414	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,1,1,2-Tetrachloroethane	ND		0.0414	0.00766	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,1,2,2-Tetrachloroethane	ND		0.0414	0.0228	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Tetrachloroethene	ND		0.0414	0.00983	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Toluene	ND		0.0414	0.0166	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2,3-Trichlorobenzene	ND		0.0414	0.0238	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2,4-Trichlorobenzene	ND		0.0414	0.0166	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,1,1-Trichloroethane	ND		0.0414	0.0124	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,1,2-Trichloroethane	ND		0.0414	0.00900	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Trichloroethene	ND		0.0414	0.00900	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Trichlorofluoromethane	ND		0.0828	0.0321	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2,3-Trichloropropane	ND		0.0414	0.0279	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,2,4-Trimethylbenzene	ND		0.0414	0.0114	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
1,3,5-Trimethylbenzene	ND		0.0414	0.0104	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
Vinyl chloride	ND		0.0828	0.0238	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
o-Xylene	ND		0.0414	0.00880	ug/Sample		12/10/21 13:59	12/10/21 16:57	1
m,p-Xylene	ND		0.0828	0.00932	ug/Sample		12/10/21 13:59	12/10/21 16:57	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*				*12/10/21 13:59*	*12/10/21 16:57*	*1*

Client Sample ID: M0031 RUN 3 CONDENSATE

Lab Sample ID: 140-25698-25

Date Collected: 12/08/21 18:10
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Voa Vial 40ml Amber - unpreserved

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		73 - 136	12/10/21 13:59	12/10/21 16:57	1
4-Bromofluorobenzene (Surr)	97		80 - 120	12/10/21 13:59	12/10/21 16:57	1
Dibromofluoromethane (Surr)	100		76 - 121	12/10/21 13:59	12/10/21 16:57	1
Toluene-d8 (Surr)	96		79 - 120	12/10/21 13:59	12/10/21 16:57	1

Client Sample ID: M0031 RUN 3 FIELD BLANK TRAP A/B

Lab Sample ID: 140-25698-26

Date Collected: 12/08/21 15:30
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 14:03	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 14:03	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 14:03	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 14:03	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 14:03	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 14:03	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 14:03	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 14:03	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 14:03	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 14:03	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 14:03	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 14:03	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 14:03	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 14:03	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 14:03	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 14:03	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 14:03	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 14:03	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 14:03	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 14:03	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 14:03	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 14:03	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 14:03	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 14:03	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 14:03	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 14:03	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 14:03	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 14:03	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 14:03	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 14:03	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 14:03	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 14:03	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 14:03	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 14:03	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 14:03	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 14:03	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 14:03	1

Client Sample ID: M0031 RUN 3 FIELD BLANK TRAP A/B

Lab Sample ID: 140-25698-26

Date Collected: 12/08/21 15:30
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 14:03	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 14:03	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 14:03	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 14:03	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 14:03	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 14:03	1
Methylene Chloride	**0.0929**	**J**	0.100	0.0860	ug/Sample			12/18/21 14:03	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 14:03	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 14:03	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 14:03	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 14:03	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 14:03	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 14:03	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 14:03	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 14:03	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 14:03	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 14:03	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 14:03	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 14:03	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 14:03	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 14:03	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 14:03	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 14:03	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 14:03	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 14:03	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 14:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0658*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 14:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*50 - 127*		*12/18/21 14:03*	*1*
4-Bromofluorobenzene (Surr)	*93*		*50 - 122*		*12/18/21 14:03*	*1*
Dibromofluoromethane (Surr)	*105*		*50 - 134*		*12/18/21 14:03*	*1*
Toluene-d8 (Surr)	*116*		*57 - 134*		*12/18/21 14:03*	*1*

Client Sample ID: M0031 RUN 3 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-27

Date Collected: 12/08/21 15:30
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 14:27	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 14:27	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 14:27	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 14:27	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 14:27	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 14:27	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN 3 FIELD BLANK TRAP C
Lab Sample ID: 140-25698-27
Date Collected: 12/08/21 15:30
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 14:27	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 14:27	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 14:27	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 14:27	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 14:27	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 14:27	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 14:27	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 14:27	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 14:27	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 14:27	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 14:27	1
Chloromethane	**0.0259**	**J**	0.0500	0.0225	ug/Sample			12/18/21 14:27	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 14:27	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 14:27	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 14:27	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 14:27	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 14:27	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 14:27	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 14:27	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 14:27	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 14:27	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 14:27	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 14:27	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 14:27	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 14:27	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 14:27	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 14:27	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 14:27	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 14:27	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 14:27	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 14:27	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 14:27	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 14:27	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 14:27	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 14:27	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 14:27	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 14:27	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 14:27	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 14:27	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 14:27	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 14:27	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 14:27	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 14:27	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 14:27	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 14:27	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 14:27	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 14:27	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 14:27	1

Client Sample ID: M0031 RUN 3 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-27

Date Collected: 12/08/21 15:30
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 14:27	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 14:27	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 14:27	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 14:27	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 14:27	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 14:27	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 14:27	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 14:27	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 14:27	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.103*	*T J N*	*ug/Sample*		*2.37*	*287-92-3*		*12/18/21 14:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*50 - 127*		*12/18/21 14:27*	*1*
4-Bromofluorobenzene (Surr)	*83*		*50 - 122*		*12/18/21 14:27*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/18/21 14:27*	*1*
Toluene-d8 (Surr)	*113*		*57 - 134*		*12/18/21 14:27*	*1*

Client Sample ID: M0031 RUN TRIP BLANK TRAP A/B

Lab Sample ID: 140-25698-28

Date Collected: 12/08/21 16:37
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 13:14	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 13:14	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 13:14	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 13:14	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 13:14	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 13:14	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 13:14	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 13:14	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 13:14	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 13:14	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 13:14	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 13:14	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 13:14	1
Chlorobenzene	**0.00166**	**J B**	0.0100	0.00100	ug/Sample			12/18/21 13:14	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 13:14	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 13:14	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 13:14	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 13:14	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 13:14	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 13:14	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 13:14	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 13:14	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 13:14	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: M0031 RUN TRIP BLANK TRAP A/B
Lab Sample ID: 140-25698-28
Date Collected: 12/08/21 16:37
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 13:14	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 13:14	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 13:14	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 13:14	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 13:14	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 13:14	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 13:14	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 13:14	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 13:14	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 13:14	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 13:14	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 13:14	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 13:14	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 13:14	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 13:14	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 13:14	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 13:14	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 13:14	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 13:14	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 13:14	1
Methylene Chloride	**0.221**		0.100	0.0860	ug/Sample			12/18/21 13:14	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 13:14	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 13:14	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 13:14	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 13:14	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 13:14	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 13:14	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 13:14	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 13:14	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 13:14	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 13:14	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 13:14	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 13:14	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 13:14	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 13:14	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 13:14	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 13:14	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 13:14	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 13:14	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 13:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methyl-	*0.0374*	*T J N*	*ug/Sample*		*1.51*	*78-78-4*		*12/18/21 13:14*	*1*
Cyclopentane	*0.267*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 13:14*	*1*
Unknown	*0.0382*	*T J*	*ug/Sample*		*9.24*			*12/18/21 13:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*50 - 127*		*12/18/21 13:14*	*1*
4-Bromofluorobenzene (Surr)	*94*		*50 - 122*		*12/18/21 13:14*	*1*

Client Sample ID: M0031 RUN TRIP BLANK TRAP A/B

Lab Sample ID: 140-25698-28

Date Collected: 12/08/21 16:37
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/18/21 13:14*	*1*
Toluene-d8 (Surr)	*115*		*57 - 134*		*12/18/21 13:14*	*1*

Client Sample ID: M0031 RUN TRIP BLANK TRAP C

Lab Sample ID: 140-25698-29

Date Collected: 12/08/21 16:37
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 13:39	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 13:39	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 13:39	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 13:39	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 13:39	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 13:39	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 13:39	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 13:39	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 13:39	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 13:39	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 13:39	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 13:39	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 13:39	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 13:39	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 13:39	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 13:39	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 13:39	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 13:39	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 13:39	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 13:39	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 13:39	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 13:39	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 13:39	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 13:39	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 13:39	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 13:39	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 13:39	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 13:39	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 13:39	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 13:39	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 13:39	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 13:39	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 13:39	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 13:39	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 13:39	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 13:39	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 13:39	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 13:39	1

Client Sample ID: M0031 RUN TRIP BLANK TRAP C

Lab Sample ID: 140-25698-29

Date Collected: 12/08/21 16:37
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 13:39	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 13:39	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 13:39	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 13:39	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 13:39	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 13:39	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 13:39	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 13:39	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 13:39	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 13:39	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 13:39	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 13:39	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 13:39	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 13:39	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 13:39	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 13:39	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 13:39	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 13:39	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 13:39	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 13:39	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 13:39	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 13:39	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 13:39	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 13:39	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 13:39	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0293*	*T J N*	*ug/Sample*		*2.37*	*287-92-3*		*12/18/21 13:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*50 - 127*		*12/18/21 13:39*	*1*
4-Bromofluorobenzene (Surr)	*92*		*50 - 122*		*12/18/21 13:39*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 134*		*12/18/21 13:39*	*1*
Toluene-d8 (Surr)	*114*		*57 - 134*		*12/18/21 13:39*	*1*

Client Sample ID: AUDIT SAMPLE

Lab Sample ID: 140-25698-30

Date Collected: 12/07/21 00:00
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Ampule (PT sample)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**0.345**		0.250	0.154	ug/Sample			12/20/21 13:20	1
Benzene	**0.328**		0.0100	0.00570	ug/Sample			12/20/21 13:20	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 13:20	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 13:20	1
Bromodichloromethane	**0.984**		0.0100	0.00170	ug/Sample			12/20/21 13:20	1
Bromoform	**0.343**		0.0250	0.00240	ug/Sample			12/20/21 13:20	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/20/21 13:20	1

Client Sample ID: AUDIT SAMPLE
Date Collected: 12/07/21 00:00
Date Received: 12/10/21 10:15
Sample Container: Ampule (PT sample)

Lab Sample ID: 140-25698-30
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 13:20	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 13:20	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 13:20	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 13:20	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 13:20	1
Carbon tetrachloride	**0.846**		0.0100	0.00240	ug/Sample			12/20/21 13:20	1
Chlorobenzene	**0.720**		0.0100	0.00100	ug/Sample			12/20/21 13:20	1
Chlorodibromomethane	**0.586**		0.0250	0.00370	ug/Sample			12/20/21 13:20	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 13:20	1
Chloroform	**0.698**		0.0100	0.00810	ug/Sample			12/20/21 13:20	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 13:20	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 13:20	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 13:20	1
1,2-Dibromo-3-Chloropropane	**0.297**		0.0500	0.0106	ug/Sample			12/20/21 13:20	1
1,2-Dibromoethane (EDB)	**0.205**		0.0250	0.00730	ug/Sample			12/20/21 13:20	1
Dibromomethane	**0.188**		0.0250	0.00420	ug/Sample			12/20/21 13:20	1
1,2-Dichlorobenzene	**0.255**		0.0100	0.00910	ug/Sample			12/20/21 13:20	1
1,3-Dichlorobenzene	**0.695**		0.0100	0.00730	ug/Sample			12/20/21 13:20	1
1,4-Dichlorobenzene	**1.05**		0.0100	0.00900	ug/Sample			12/20/21 13:20	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 13:20	1
1,1-Dichloroethane	**1.44**		0.0100	0.00270	ug/Sample			12/20/21 13:20	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 13:20	1
1,1-Dichloroethene	**1.02**		0.0100	0.00430	ug/Sample			12/20/21 13:20	1
cis-1,2-Dichloroethene	**1.34**		0.0100	0.00320	ug/Sample			12/20/21 13:20	1
trans-1,2-Dichloroethene	**1.04**		0.0100	0.00370	ug/Sample			12/20/21 13:20	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 13:20	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 13:20	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 13:20	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 13:20	1
cis-1,3-Dichloropropene	**0.886**		0.0100	0.00250	ug/Sample			12/20/21 13:20	1
trans-1,3-Dichloropropene	**0.321**		0.0100	0.00340	ug/Sample			12/20/21 13:20	1
Ethylbenzene	**0.368**		0.0100	0.00780	ug/Sample			12/20/21 13:20	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 13:20	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 13:20	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 13:20	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 13:20	1
Methylene Chloride	**0.983**		0.100	0.0860	ug/Sample			12/20/21 13:20	1
4-Methyl-2-pentanone (MIBK)	**0.507**		0.100	0.0361	ug/Sample			12/20/21 13:20	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 13:20	1
Styrene	**0.845**		0.0100	0.00210	ug/Sample			12/20/21 13:20	1
1,1,1,2-Tetrachloroethane	**0.00497**	**J**	0.0100	0.00180	ug/Sample			12/20/21 13:20	1
1,1,2,2-Tetrachloroethane	**0.463**		0.0250	0.0104	ug/Sample			12/20/21 13:20	1
Tetrachloroethene	**0.306**		0.0100	0.00100	ug/Sample			12/20/21 13:20	1
Toluene	**1.13**		0.0250	0.0147	ug/Sample			12/20/21 13:20	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 13:20	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 13:20	1
1,1,1-Trichloroethane	**0.0161**	**J**	0.0250	0.00480	ug/Sample			12/20/21 13:20	1
1,1,2-Trichloroethane	**0.0188**	**J**	0.0250	0.00760	ug/Sample			12/20/21 13:20	1

Client Sample ID: AUDIT SAMPLE
Date Collected: 12/07/21 00:00
Date Received: 12/10/21 10:15
Sample Container: Ampule (PT sample)

Lab Sample ID: 140-25698-30
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**1.11**		0.0100	0.00310	ug/Sample			12/20/21 13:20	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 13:20	1
1,2,3-Trichloropropane	**0.146**		0.0250	0.0104	ug/Sample			12/20/21 13:20	1
1,2,4-Trimethylbenzene	**1.32**		0.0100	0.00710	ug/Sample			12/20/21 13:20	1
1,3,5-Trimethylbenzene	**0.790**		0.0100	0.00200	ug/Sample			12/20/21 13:20	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 13:20	1
o-Xylene	**0.894**		0.0100	0.00740	ug/Sample			12/20/21 13:20	1
m,p-Xylene	**0.610**		0.0200	0.00700	ug/Sample			12/20/21 13:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*					*12/20/21 13:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*50 - 127*		*12/20/21 13:20*	*1*
4-Bromofluorobenzene (Surr)	*88*		*50 - 122*		*12/20/21 13:20*	*1*
Dibromofluoromethane (Surr)	*105*		*50 - 134*		*12/20/21 13:20*	*1*
Toluene-d8 (Surr)	*101*		*57 - 134*		*12/20/21 13:20*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**0.345**		0.250	0.154	ug/Sample			12/29/21 13:14	1
Benzene	**0.325**		0.0100	0.00570	ug/Sample			12/29/21 13:14	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/29/21 13:14	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/29/21 13:14	1
Bromodichloromethane	**0.920**		0.0100	0.00170	ug/Sample			12/29/21 13:14	1
Bromoform	**0.320**		0.0250	0.00240	ug/Sample			12/29/21 13:14	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/29/21 13:14	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/29/21 13:14	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/29/21 13:14	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/29/21 13:14	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/29/21 13:14	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/29/21 13:14	1
Carbon tetrachloride	**0.850**		0.0100	0.00240	ug/Sample			12/29/21 13:14	1
Chlorobenzene	**0.721**		0.0100	0.00100	ug/Sample			12/29/21 13:14	1
Chlorodibromomethane	**0.547**		0.0250	0.00370	ug/Sample			12/29/21 13:14	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/29/21 13:14	1
Chloroform	**0.676**		0.0100	0.00810	ug/Sample			12/29/21 13:14	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/29/21 13:14	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/29/21 13:14	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/29/21 13:14	1
1,2-Dibromo-3-Chloropropane	**0.268**	*1	0.0500	0.0106	ug/Sample			12/29/21 13:14	1
1,2-Dibromoethane (EDB)	**0.190**		0.0250	0.00730	ug/Sample			12/29/21 13:14	1
Dibromomethane	**0.168**		0.0250	0.00420	ug/Sample			12/29/21 13:14	1
1,2-Dichlorobenzene	**0.254**		0.0100	0.00910	ug/Sample			12/29/21 13:14	1
1,3-Dichlorobenzene	**0.695**		0.0100	0.00730	ug/Sample			12/29/21 13:14	1
1,4-Dichlorobenzene	**1.04**		0.0100	0.00900	ug/Sample			12/29/21 13:14	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/29/21 13:14	1
1,1-Dichloroethane	**1.44**		0.0100	0.00270	ug/Sample			12/29/21 13:14	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/29/21 13:14	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: AUDIT SAMPLE
Date Collected: 12/07/21 00:00
Date Received: 12/10/21 10:15
Sample Container: Ampule (PT sample)

Lab Sample ID: 140-25698-30
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS) - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	**1.02**		0.0100	0.00430	ug/Sample			12/29/21 13:14	1
cis-1,2-Dichloroethene	**1.32**		0.0100	0.00320	ug/Sample			12/29/21 13:14	1
trans-1,2-Dichloroethene	**1.03**		0.0100	0.00370	ug/Sample			12/29/21 13:14	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/29/21 13:14	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/29/21 13:14	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/29/21 13:14	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/29/21 13:14	1
cis-1,3-Dichloropropene	**0.816**		0.0100	0.00250	ug/Sample			12/29/21 13:14	1
trans-1,3-Dichloropropene	**0.297**		0.0100	0.00340	ug/Sample			12/29/21 13:14	1
Ethylbenzene	**0.380**		0.0100	0.00780	ug/Sample			12/29/21 13:14	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/29/21 13:14	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/29/21 13:14	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/29/21 13:14	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/29/21 13:14	1
Methylene Chloride	**0.966**		0.100	0.0860	ug/Sample			12/29/21 13:14	1
4-Methyl-2-pentanone (MIBK)	**0.438**		0.100	0.0361	ug/Sample			12/29/21 13:14	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/29/21 13:14	1
Styrene	**0.844**		0.0100	0.00210	ug/Sample			12/29/21 13:14	1
1,1,1,2-Tetrachloroethane	**0.00498**	**J**	0.0100	0.00180	ug/Sample			12/29/21 13:14	1
1,1,2,2-Tetrachloroethane	**0.429**		0.0250	0.0104	ug/Sample			12/29/21 13:14	1
Tetrachloroethene	**0.318**		0.0100	0.00100	ug/Sample			12/29/21 13:14	1
Toluene	**1.14**		0.0250	0.0147	ug/Sample			12/29/21 13:14	1
1,2,3-Trichlorobenzene	ND	*1	0.0250	0.0222	ug/Sample			12/29/21 13:14	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/29/21 13:14	1
1,1,1-Trichloroethane	**0.0161**	**J**	0.0250	0.00480	ug/Sample			12/29/21 13:14	1
1,1,2-Trichloroethane	**0.0185**	**J**	0.0250	0.00760	ug/Sample			12/29/21 13:14	1
Trichloroethene	**1.09**		0.0100	0.00310	ug/Sample			12/29/21 13:14	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/29/21 13:14	1
1,2,3-Trichloropropane	**0.130**		0.0250	0.0104	ug/Sample			12/29/21 13:14	1
1,2,4-Trimethylbenzene	**1.35**		0.0100	0.00710	ug/Sample			12/29/21 13:14	1
1,3,5-Trimethylbenzene	**0.837**		0.0100	0.00200	ug/Sample			12/29/21 13:14	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/29/21 13:14	1
o-Xylene	**0.901**		0.0100	0.00740	ug/Sample			12/29/21 13:14	1
m,p-Xylene	**0.626**		0.0200	0.00700	ug/Sample			12/29/21 13:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*	*H*	*ug/Sample*					*12/29/21 13:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*50 - 127*		*12/29/21 13:14*	*1*
4-Bromofluorobenzene (Surr)	*89*		*50 - 122*		*12/29/21 13:14*	*1*
Dibromofluoromethane (Surr)	*97*		*50 - 134*		*12/29/21 13:14*	*1*
Toluene-d8 (Surr)	*100*		*57 - 134*		*12/29/21 13:14*	*1*

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: C-2492 MEDIA CHECK TENAX
Date Collected: 12/07/21 00:00
Date Received: 12/10/21 10:15
Sample Container: Tube

Lab Sample ID: 140-25698-31
Matrix: Air

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 12:50	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 12:50	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 12:50	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 12:50	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 12:50	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 12:50	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 12:50	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 12:50	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 12:50	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 12:50	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 12:50	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 12:50	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 12:50	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/18/21 12:50	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 12:50	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 12:50	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 12:50	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 12:50	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 12:50	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 12:50	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 12:50	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 12:50	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 12:50	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 12:50	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 12:50	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 12:50	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 12:50	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 12:50	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 12:50	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 12:50	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 12:50	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 12:50	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 12:50	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 12:50	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 12:50	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 12:50	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 12:50	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 12:50	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 12:50	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 12:50	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 12:50	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 12:50	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 12:50	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 12:50	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 12:50	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 12:50	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 12:50	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 12:50	1

Client Sample ID: C-2492 MEDIA CHECK TENAX

Lab Sample ID: 140-25698-31

Date Collected: 12/07/21 00:00
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 12:50	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 12:50	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 12:50	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 12:50	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 12:50	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 12:50	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 12:50	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 12:50	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 12:50	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 12:50	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 12:50	1
1,3,5-Trimethylbenzene	ND	*+	0.0100	0.00200	ug/Sample			12/18/21 12:50	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 12:50	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 12:50	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 12:50	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0421*	*T J N*	*ug/Sample*		*2.38*	*287-92-3*		*12/18/21 12:50*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*50 - 127*		*12/18/21 12:50*	*1*
4-Bromofluorobenzene (Surr)	*91*		*50 - 122*		*12/18/21 12:50*	*1*
Dibromofluoromethane (Surr)	*105*		*50 - 134*		*12/18/21 12:50*	*1*
Toluene-d8 (Surr)	*116*		*57 - 134*		*12/18/21 12:50*	*1*

Client Sample ID: C-2493 MEDIA CHECK TENAX/CHARCOAL

Lab Sample ID: 140-25698-32

Date Collected: 12/07/21 00:00
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 13:44	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/20/21 13:44	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 13:44	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 13:44	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 13:44	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 13:44	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/20/21 13:44	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 13:44	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 13:44	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 13:44	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 13:44	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 13:44	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/20/21 13:44	1
Chlorobenzene	**0.00225**	**J**	0.0100	0.00100	ug/Sample			12/20/21 13:44	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 13:44	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 13:44	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 13:44	1

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: C-2493 MEDIA CHECK TENAX/CHARCOAL **Lab Sample ID: 140-25698-32**
Date Collected: 12/07/21 00:00 **Matrix: Air**
Date Received: 12/10/21 10:15
Sample Container: Tube

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 13:44	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 13:44	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 13:44	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 13:44	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 13:44	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 13:44	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 13:44	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 13:44	1
1,4-Dichlorobenzene	**0.0103**		0.0100	0.00900	ug/Sample			12/20/21 13:44	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 13:44	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 13:44	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 13:44	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 13:44	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 13:44	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 13:44	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 13:44	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 13:44	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 13:44	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 13:44	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 13:44	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 13:44	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 13:44	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 13:44	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 13:44	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 13:44	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 13:44	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/20/21 13:44	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 13:44	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 13:44	1
Styrene	**0.00324**	**J**	0.0100	0.00210	ug/Sample			12/20/21 13:44	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 13:44	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 13:44	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 13:44	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/20/21 13:44	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 13:44	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 13:44	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 13:44	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 13:44	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 13:44	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 13:44	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 13:44	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 13:44	1
1,3,5-Trimethylbenzene	**0.00234**	**J**	0.0100	0.00200	ug/Sample			12/20/21 13:44	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 13:44	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 13:44	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 13:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane	*0.0943*	*T J N*	*ug/Sample*		*2.37*	*287-92-3*		*12/20/21 13:44*	*1*

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Client Sample ID: C-2493 MEDIA CHECK TENAX/CHARCOAL
Lab Sample ID: 140-25698-32
Date Collected: 12/07/21 00:00
Matrix: Air
Date Received: 12/10/21 10:15
Sample Container: Tube

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		50 - 127		12/20/21 13:44	1
4-Bromofluorobenzene (Surr)	80		50 - 122		12/20/21 13:44	1
Dibromofluoromethane (Surr)	108		50 - 134		12/20/21 13:44	1
Toluene-d8 (Surr)	111		57 - 134		12/20/21 13:44	1

Default Detection Limits

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	RL	MDL	Units
1,1,1,2-Tetrachloroethane	0.0100	0.00180	ug/Sample
1,1,1-Trichloroethane	0.0250	0.00480	ug/Sample
1,1,2,2-Tetrachloroethane	0.0250	0.0104	ug/Sample
1,1,2-Trichloroethane	0.0250	0.00760	ug/Sample
1,1-Dichloroethane	0.0100	0.00270	ug/Sample
1,1-Dichloroethene	0.0100	0.00430	ug/Sample
1,1-Dichloropropene	0.0100	0.00210	ug/Sample
1,2,3-Trichlorobenzene	0.0250	0.0222	ug/Sample
1,2,3-Trichloropropane	0.0250	0.0104	ug/Sample
1,2,4-Trichlorobenzene	0.0250	0.0205	ug/Sample
1,2,4-Trimethylbenzene	0.0100	0.00710	ug/Sample
1,2-Dibromo-3-Chloropropane	0.0500	0.0106	ug/Sample
1,2-Dibromoethane (EDB)	0.0250	0.00730	ug/Sample
1,2-Dichlorobenzene	0.0100	0.00910	ug/Sample
1,2-Dichloroethane	0.0100	0.00170	ug/Sample
1,2-Dichloropropane	0.0100	0.00410	ug/Sample
1,3,5-Trimethylbenzene	0.0100	0.00200	ug/Sample
1,3-Dichlorobenzene	0.0100	0.00730	ug/Sample
1,3-Dichloropropane	0.0100	0.00200	ug/Sample
1,4-Dichlorobenzene	0.0100	0.00900	ug/Sample
2,2-Dichloropropane	0.0100	0.00230	ug/Sample
2-Butanone (MEK)	0.100	0.0650	ug/Sample
2-Chlorotoluene	0.0100	0.00330	ug/Sample
2-Hexanone	0.100	0.0265	ug/Sample
4-Chlorotoluene	0.0100	0.00440	ug/Sample
4-Isopropyltoluene	0.0100	0.0100	ug/Sample
4-Methyl-2-pentanone (MIBK)	0.100	0.0361	ug/Sample
Acetone	0.250	0.154	ug/Sample
Benzene	0.0100	0.00570	ug/Sample
Bromobenzene	0.0100	0.00190	ug/Sample
Bromochloromethane	0.0250	0.00810	ug/Sample
Bromodichloromethane	0.0100	0.00170	ug/Sample
Bromoform	0.0250	0.00240	ug/Sample
Bromomethane	0.0500	0.0110	ug/Sample
Carbon disulfide	0.0250	0.0110	ug/Sample
Carbon tetrachloride	0.0100	0.00240	ug/Sample
Chlorobenzene	0.0100	0.00100	ug/Sample
Chlorodibromomethane	0.0250	0.00370	ug/Sample
Chloroethane	0.0500	0.0101	ug/Sample
Chloroform	0.0100	0.00810	ug/Sample
Chloromethane	0.0500	0.0225	ug/Sample
cis-1,2-Dichloroethene	0.0100	0.00320	ug/Sample
cis-1,3-Dichloropropene	0.0100	0.00250	ug/Sample
Dibromomethane	0.0250	0.00420	ug/Sample
Dichlorodifluoromethane	0.0250	0.00620	ug/Sample
Ethylbenzene	0.0100	0.00780	ug/Sample
Hexachlorobutadiene	0.0250	0.0180	ug/Sample
Isopropylbenzene	0.0100	0.00950	ug/Sample
m,p-Xylene	0.0200	0.00700	ug/Sample
Methylene Chloride	0.100	0.0860	ug/Sample
n-Butylbenzene	0.0250	0.0130	ug/Sample
N-Propylbenzene	0.0100	0.00920	ug/Sample
o-Xylene	0.0100	0.00740	ug/Sample

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	RL	MDL	Units
sec-Butylbenzene	0.0250	0.0110	ug/Sample
Styrene	0.0100	0.00210	ug/Sample
tert-Butylbenzene	0.0100	0.00510	ug/Sample
Tetrachloroethene	0.0100	0.00100	ug/Sample
Toluene	0.0250	0.0147	ug/Sample
trans-1,2-Dichloroethene	0.0100	0.00370	ug/Sample
trans-1,3-Dichloropropene	0.0100	0.00340	ug/Sample
Trichloroethene	0.0100	0.00310	ug/Sample
Trichlorofluoromethane	0.0500	0.00530	ug/Sample
Vinyl chloride	0.0250	0.00640	ug/Sample

Method: 8260B - Volatile Organic Compounds (GC/MS)

Prep: 0031/5030B

Analyte	RL	MDL	Units
1,1,1,2-Tetrachloroethane	0.0400	0.00740	ug/Sample
1,1,1-Trichloroethane	0.0400	0.0120	ug/Sample
1,1,2,2-Tetrachloroethane	0.0400	0.0220	ug/Sample
1,1,2-Trichloroethane	0.0400	0.00870	ug/Sample
1,1-Dichloroethane	0.0400	0.00950	ug/Sample
1,1-Dichloroethene	0.0400	0.0110	ug/Sample
1,1-Dichloropropene	0.0400	0.0100	ug/Sample
1,2,3-Trichlorobenzene	0.0400	0.0230	ug/Sample
1,2,3-Trichloropropane	0.0400	0.0270	ug/Sample
1,2,4-Trichlorobenzene	0.0400	0.0160	ug/Sample
1,2,4-Trimethylbenzene	0.0400	0.0110	ug/Sample
1,2-Dibromo-3-Chloropropane	0.0800	0.0210	ug/Sample
1,2-Dibromoethane (EDB)	0.0400	0.0110	ug/Sample
1,2-Dichlorobenzene	0.0400	0.00680	ug/Sample
1,2-Dichloroethane	0.0400	0.00960	ug/Sample
1,2-Dichloropropane	0.0400	0.00820	ug/Sample
1,3,5-Trimethylbenzene	0.0400	0.0100	ug/Sample
1,3-Dichlorobenzene	0.0400	0.00660	ug/Sample
1,3-Dichloropropane	0.0400	0.00820	ug/Sample
1,4-Dichlorobenzene	0.0400	0.00650	ug/Sample
2,2-Dichloropropane	0.0400	0.0100	ug/Sample
2-Butanone (MEK)	0.200	0.0790	ug/Sample
2-Chlorotoluene	0.0400	0.0100	ug/Sample
2-Hexanone	0.200	0.0800	ug/Sample
4-Chlorotoluene	0.0400	0.0110	ug/Sample
4-Isopropyltoluene	0.0400	0.0120	ug/Sample
4-Methyl-2-pentanone (MIBK)	0.200	0.0680	ug/Sample
Acetone	0.400	0.130	ug/Sample
Benzene	0.0400	0.00760	ug/Sample
Bromobenzene	0.0400	0.00640	ug/Sample
Bromochloromethane	0.0400	0.0110	ug/Sample
Bromodichloromethane	0.0400	0.00960	ug/Sample
Bromoform	0.0400	0.0110	ug/Sample
Bromomethane	0.0800	0.0480	ug/Sample
Carbon disulfide	0.0400	0.0110	ug/Sample
Carbon tetrachloride	0.0400	0.0290	ug/Sample
Chlorobenzene	0.0400	0.00550	ug/Sample
Chlorodibromomethane	0.0400	0.0130	ug/Sample

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Prep: 0031/5030B

Analyte	RL	MDL	Units
Chloroethane	0.0800	0.0300	ug/Sample
Chloroform	0.0400	0.00940	ug/Sample
Chloromethane	0.0800	0.0290	ug/Sample
cis-1,2-Dichloroethene	0.0400	0.00780	ug/Sample
cis-1,3-Dichloropropene	0.0400	0.00630	ug/Sample
Dibromomethane	0.0400	0.0110	ug/Sample
Dichlorodifluoromethane	0.0800	0.0390	ug/Sample
Ethylbenzene	0.0400	0.00820	ug/Sample
Hexachlorobutadiene	0.0800	0.0120	ug/Sample
Isopropylbenzene	0.0400	0.00950	ug/Sample
m,p-Xylene	0.0800	0.00900	ug/Sample
Methylene Chloride	0.0800	0.0800	ug/Sample
n-Butylbenzene	0.0400	0.0150	ug/Sample
N-Propylbenzene	0.0400	0.0110	ug/Sample
o-Xylene	0.0400	0.00850	ug/Sample
sec-Butylbenzene	0.0400	0.0120	ug/Sample
Styrene	0.0400	0.0100	ug/Sample
tert-Butylbenzene	0.0400	0.0100	ug/Sample
Tetrachloroethene	0.0400	0.00950	ug/Sample
Toluene	0.0400	0.0160	ug/Sample
trans-1,2-Dichloroethene	0.0400	0.00740	ug/Sample
trans-1,3-Dichloropropene	0.0400	0.0110	ug/Sample
Trichloroethene	0.0400	0.00870	ug/Sample
Trichlorofluoromethane	0.0800	0.0310	ug/Sample
Vinyl chloride	0.0800	0.0230	ug/Sample

Surrogate Summary

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Air

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (50-127)	BFB (50-122)	DBFM (50-134)	TOL (57-134)
140-25698-1	M0031 RUN 1-1 TRAP A/B	93	84	106	109
140-25698-2	M0031 RUN 1-1 TRAP C	94	89	109	113
140-25698-3	M0031 RUN 1-2 TRAP A/B	90	78	102	108
140-25698-4	M0031 RUN 1-2 TRAP C	94	89	107	110
140-25698-5	M0031 RUN 1-3 TRAP A/B	87	82	101	108
140-25698-6	M0031 RUN 1-3 TRAP C	96	88	109	110
140-25698-8	M0031 RUN 1 FIELD BLANK TRAP A/8	91	90	106	116
140-25698-9	M0031 RUN 1 FIELD BLANK TRAP C	94	89	106	114
140-25698-10	M0031 RUN 2-1 TRAP A/B	87	72	108	103
140-25698-11	M0031 RUN 2-1 TRAP C	91	85	107	107
140-25698-12	M0031 RUN 2-2 TRAP A/B	89	75	102	102
140-25698-13	M0031 RUN 2-2 TRAP C	94	85	110	108
140-25698-14	M0031 RUN 2-3 TRAP A/B	91	80	106	109
140-25698-15	M0031 RUN 2-3 TRAP C	88	82	105	104
140-25698-17	M0031 RUN 2 FIELD BLANK TRAP A/B	89	92	104	115
140-25698-18	M0031 RUN 2 FIELD BLANK TRAP C	90	93	105	115
140-25698-19	M0031 RUN 3-1 TRAP A/B	87	83	102	105
140-25698-20	M0031 RUN 3-1 TRAP C	91	84	109	107
140-25698-21	M0031 RUN 3-2 TRAP A/B	91	79	106	109
140-25698-22	M0031 RUN 3-2 TRAP C	98	92	114	113
140-25698-23	M0031 RUN 3-3 TRAP A/B	87	81	102	106
140-25698-24	M0031 RUN 3-3 TRAP C	89	84	108	109
140-25698-26	M0031 RUN 3 FIELD BLANK TRAP A/B	92	93	105	116
140-25698-27	M0031 RUN 3 FIELD BLANK TRAP C	95	83	106	113
140-25698-28	M0031 RUN TRIP BLANK TRAF A/B	94	94	106	115
140-25698-29	M0031 RUN TRIP BLANK TRAF C	92	92	106	114
140-25698-30	AUDIT SAMPLE	93	88	105	101
140-25698-30 - RA	AUDIT SAMPLE	82	89	97	100
140-25698-31	C-2492 MEDIA CHECK TENAX	91	91	105	116
140-25698-32	C-2493 MEDIA CHECK TENAX/CHARCOAL	95	80	108	111
LCS 140-57159/3	Lab Control Sample	94	96	108	112
LCS 140-57160/3	Lab Control Sample	95	93	109	110
LCS 140-57494/3	Lab Control Sample	82	88	97	105
LCSD 140-57159/4	Lab Control Sample Dup	95	99	107	111
LCSD 140-57160/4	Lab Control Sample Dup	91	93	105	110
LCSD 140-57494/4	Lab Control Sample Dup	78	81	98	106
MB 140-57159/5	Method Blank	99	94	107	114
MB 140-57160/6	Method Blank	78	78	92	100
MB 140-57494/6	Method Blank	82	82	103	107

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Surrogate Summary

Client: Montrose Air Quality Services LLC
Job ID: 140-25698-1
Project/Site: Covanta Marion, Inc. - M0031

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Air **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(73-136)	(80-120)	(76-121)	(79-120)
140-25698-7	M0031 RUN 1 CONDENSATE	104	96	100	97
140-25698-16	M0031 RUN 2 CONDENSATE	103	97	99	96
140-25698-25	M0031 RUN 3 CONDENSATE	104	97	100	96
LCS 140-56885/3	Lab Control Sample	103	101	102	95
LCSD 140-56885/4	Lab Control Sample Dup	103	100	102	95
MB 140-56760/1-A	Method Blank	106	95	102	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 140-56760/1-A
Matrix: Air
Analysis Batch: 56885

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56760

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.426	0.138	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Benzene	ND		0.0426	0.00809	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Bromobenzene	ND		0.0426	0.00682	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Bromochloromethane	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Bromodichloromethane	ND		0.0426	0.0102	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Bromoform	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Bromomethane	ND		0.0852	0.0511	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
2-Butanone (MEK)	ND		0.213	0.0841	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
n-Butylbenzene	ND		0.0426	0.0160	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
sec-Butylbenzene	ND		0.0426	0.0128	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
tert-Butylbenzene	ND		0.0426	0.0107	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Carbon disulfide	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Carbon tetrachloride	ND		0.0426	0.0309	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Chlorobenzene	ND		0.0426	0.00586	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Chlorodibromomethane	ND		0.0426	0.0138	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Chloroethane	ND		0.0852	0.0320	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Chloroform	ND		0.0426	0.0100	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Chloromethane	ND		0.0852	0.0309	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
2-Chlorotoluene	ND		0.0426	0.0107	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
4-Chlorotoluene	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2-Dibromo-3-Chloropropane	ND		0.0852	0.0224	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2-Dibromoethane (EDB)	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Dibromomethane	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2-Dichlorobenzene	ND		0.0426	0.00724	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,3-Dichlorobenzene	ND		0.0426	0.00703	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,4-Dichlorobenzene	ND		0.0426	0.00692	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Dichlorodifluoromethane	ND		0.0852	0.0415	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,1-Dichloroethane	ND		0.0426	0.0101	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2-Dichloroethane	ND		0.0426	0.0102	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,1-Dichloroethene	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
cis-1,2-Dichloroethene	ND		0.0426	0.00831	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
trans-1,2-Dichloroethene	ND		0.0426	0.00788	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2-Dichloropropane	ND		0.0426	0.00873	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,3-Dichloropropane	ND		0.0426	0.00873	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
2,2-Dichloropropane	ND		0.0426	0.0107	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,1-Dichloropropene	ND		0.0426	0.0107	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
cis-1,3-Dichloropropene	ND		0.0426	0.00671	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
trans-1,3-Dichloropropene	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Ethylbenzene	ND		0.0426	0.00873	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Hexachlorobutadiene	ND		0.0852	0.0128	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
2-Hexanone	ND		0.213	0.0852	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Isopropylbenzene	ND		0.0426	0.0101	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
4-Isopropyltoluene	ND		0.0426	0.0128	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Methylene Chloride	ND		0.0852	0.0852	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
4-Methyl-2-pentanone (MIBK)	ND		0.213	0.0724	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
N-Propylbenzene	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Styrene	ND		0.0426	0.0107	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,1,1,2-Tetrachloroethane	ND		0.0426	0.00788	ug/Sample		12/07/21 10:50	12/10/21 10:57	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 140-56760/1-A
Matrix: Air
Analysis Batch: 56885

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56760

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0426	0.0234	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Tetrachloroethene	ND		0.0426	0.0101	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Toluene	ND		0.0426	0.0170	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2,3-Trichlorobenzene	ND		0.0426	0.0245	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2,4-Trichlorobenzene	ND		0.0426	0.0170	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,1,1-Trichloroethane	ND		0.0426	0.0128	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,1,2-Trichloroethane	ND		0.0426	0.00927	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Trichloroethene	ND		0.0426	0.00927	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Trichlorofluoromethane	ND		0.0852	0.0330	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2,3-Trichloropropane	ND		0.0426	0.0288	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,2,4-Trimethylbenzene	ND		0.0426	0.0117	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
1,3,5-Trimethylbenzene	ND		0.0426	0.0107	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
Vinyl chloride	ND		0.0852	0.0245	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
o-Xylene	ND		0.0426	0.00905	ug/Sample		12/07/21 10:50	12/10/21 10:57	1
m,p-Xylene	ND		0.0852	0.00959	ug/Sample		12/07/21 10:50	12/10/21 10:57	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*				*12/07/21 10:50*	*12/10/21 10:57*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*73 - 136*	*12/07/21 10:50*	*12/10/21 10:57*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*	*12/07/21 10:50*	*12/10/21 10:57*	*1*
Dibromofluoromethane (Surr)	*102*		*76 - 121*	*12/07/21 10:50*	*12/10/21 10:57*	*1*
Toluene-d8 (Surr)	*97*		*79 - 120*	*12/07/21 10:50*	*12/10/21 10:57*	*1*

Lab Sample ID: LCS 140-56885/3
Matrix: Air
Analysis Batch: 56885

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	40.0	40.08		ug/Sample		100	62 - 131
Benzene	10.0	10.67		ug/Sample		107	75 - 120
Bromobenzene	10.0	10.03		ug/Sample		100	73 - 120
Bromochloromethane	10.0	10.71		ug/Sample		107	76 - 127
Bromodichloromethane	10.0	10.70		ug/Sample		107	80 - 125
Bromoform	10.0	10.31		ug/Sample		103	74 - 124
Bromomethane	10.0	11.30		ug/Sample		113	50 - 147
2-Butanone (MEK)	40.0	41.92		ug/Sample		105	71 - 123
n-Butylbenzene	10.0	10.25		ug/Sample		102	63 - 130
sec-Butylbenzene	10.0	9.669		ug/Sample		97	67 - 121
tert-Butylbenzene	10.0	9.418		ug/Sample		94	72 - 120
Carbon disulfide	10.0	10.20		ug/Sample		102	35 - 126
Carbon tetrachloride	10.0	11.37		ug/Sample		114	73 - 135
Chlorobenzene	10.0	10.01		ug/Sample		100	77 - 120
Chlorodibromomethane	10.0	10.13		ug/Sample		101	79 - 121
Chloroethane	10.0	9.680		ug/Sample		97	65 - 122
Chloroform	10.0	9.962		ug/Sample		100	80 - 121
Chloromethane	10.0	8.278		ug/Sample		83	54 - 133

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-56885/3
Matrix: Air
Analysis Batch: 56885

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chlorotoluene	10.0	9.899		ug/Sample		99	72 - 120
4-Chlorotoluene	10.0	9.797		ug/Sample		98	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	9.889		ug/Sample		99	65 - 120
1,2-Dibromoethane (EDB)	10.0	9.613		ug/Sample		96	77 - 120
Dibromomethane	10.0	10.32		ug/Sample		103	79 - 123
1,2-Dichlorobenzene	10.0	10.01		ug/Sample		100	78 - 120
1,3-Dichlorobenzene	10.0	10.21		ug/Sample		102	77 - 120
1,4-Dichlorobenzene	10.0	10.08		ug/Sample		101	78 - 120
Dichlorodifluoromethane	10.0	8.114		ug/Sample		81	45 - 140
1,1-Dichloroethane	10.0	10.42		ug/Sample		104	78 - 130
1,2-Dichloroethane	10.0	10.15		ug/Sample		101	74 - 139
1,1-Dichloroethene	10.0	10.50		ug/Sample		105	70 - 126
cis-1,2-Dichloroethene	10.0	10.33		ug/Sample		103	78 - 120
trans-1,2-Dichloroethene	10.0	10.59		ug/Sample		106	74 - 123
1,2-Dichloropropane	10.0	10.47		ug/Sample		105	78 - 127
1,3-Dichloropropane	10.0	9.792		ug/Sample		98	73 - 120
2,2-Dichloropropane	10.0	10.48		ug/Sample		105	76 - 129
1,1-Dichloropropene	10.0	10.88		ug/Sample		109	77 - 123
cis-1,3-Dichloropropene	10.0	10.57		ug/Sample		106	76 - 121
trans-1,3-Dichloropropene	10.0	9.828		ug/Sample		98	79 - 120
Ethylbenzene	10.0	10.11		ug/Sample		101	75 - 120
Hexachlorobutadiene	10.0	10.22		ug/Sample		102	60 - 137
2-Hexanone	40.0	39.92		ug/Sample		100	70 - 126
Isopropylbenzene	10.0	10.06		ug/Sample		101	76 - 120
4-Isopropyltoluene	10.0	9.883		ug/Sample		99	70 - 122
Methylene Chloride	10.0	10.58		ug/Sample		106	67 - 120
4-Methyl-2-pentanone (MIBK)	40.0	41.75		ug/Sample		104	72 - 132
N-Propylbenzene	10.0	9.904		ug/Sample		99	69 - 120
Styrene	10.0	9.958		ug/Sample		100	78 - 120
1,1,1,2-Tetrachloroethane	10.0	10.25		ug/Sample		103	80 - 120
1,1,2,2-Tetrachloroethane	10.0	9.533		ug/Sample		95	76 - 120
Tetrachloroethene	10.0	10.31		ug/Sample		103	77 - 121
Toluene	10.0	10.18		ug/Sample		102	72 - 120
1,2,3-Trichlorobenzene	10.0	11.60		ug/Sample		116	60 - 132
1,2,4-Trichlorobenzene	10.0	11.59		ug/Sample		116	60 - 140
1,1,1-Trichloroethane	10.0	10.87		ug/Sample		109	77 - 131
1,1,2-Trichloroethane	10.0	9.803		ug/Sample		98	76 - 120
Trichloroethene	10.0	10.71		ug/Sample		107	80 - 120
Trichlorofluoromethane	10.0	10.01		ug/Sample		100	62 - 128
1,2,3-Trichloropropane	10.0	9.441		ug/Sample		94	79 - 121
1,2,4-Trimethylbenzene	10.0	10.41		ug/Sample		104	71 - 120
1,3,5-Trimethylbenzene	10.0	10.35		ug/Sample		104	72 - 120
Vinyl chloride	10.0	9.395		ug/Sample		94	64 - 129
o-Xylene	10.0	9.896		ug/Sample		99	78 - 120
m,p-Xylene	10.0	9.891		ug/Sample		99	76 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*73 - 136*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-56885/3
Matrix: Air
Analysis Batch: 56885

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*76 - 121*
Toluene-d8 (Surr)	*95*		*79 - 120*

Lab Sample ID: LCSD 140-56885/4
Matrix: Air
Analysis Batch: 56885

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone			40.0	42.98		ug/Sample		107	62 - 131	7	50
Benzene			10.0	10.99		ug/Sample		110	75 - 120	3	20
Bromobenzene			10.0	10.11		ug/Sample		101	73 - 120	1	20
Bromochloromethane			10.0	10.81		ug/Sample		108	76 - 127	1	21
Bromodichloromethane			10.0	11.14		ug/Sample		111	80 - 125	4	22
Bromoform			10.0	10.42		ug/Sample		104	74 - 124	1	27
Bromomethane			10.0	10.96		ug/Sample		110	50 - 147	3	29
2-Butanone (MEK)			40.0	42.44		ug/Sample		106	71 - 123	1	37
n-Butylbenzene			10.0	10.50		ug/Sample		105	63 - 130	2	21
sec-Butylbenzene			10.0	9.801		ug/Sample		98	67 - 121	1	20
tert-Butylbenzene			10.0	9.596		ug/Sample		96	72 - 120	2	20
Carbon disulfide			10.0	10.44		ug/Sample		104	35 - 126	2	20
Carbon tetrachloride			10.0	11.53		ug/Sample		115	73 - 135	1	29
Chlorobenzene			10.0	10.10		ug/Sample		101	77 - 120	1	20
Chlorodibromomethane			10.0	10.22		ug/Sample		102	79 - 121	1	27
Chloroethane			10.0	9.907		ug/Sample		99	65 - 122	2	20
Chloroform			10.0	10.10		ug/Sample		101	80 - 121	1	20
Chloromethane			10.0	7.980		ug/Sample		80	54 - 133	4	20
2-Chlorotoluene			10.0	10.17		ug/Sample		102	72 - 120	3	20
4-Chlorotoluene			10.0	10.02		ug/Sample		100	74 - 120	2	20
1,2-Dibromo-3-Chloropropane			10.0	10.40		ug/Sample		104	65 - 120	5	38
1,2-Dibromoethane (EDB)			10.0	9.778		ug/Sample		98	77 - 120	2	20
Dibromomethane			10.0	10.53		ug/Sample		105	79 - 123	2	21
1,2-Dichlorobenzene			10.0	10.08		ug/Sample		101	78 - 120	1	20
1,3-Dichlorobenzene			10.0	10.32		ug/Sample		103	77 - 120	1	20
1,4-Dichlorobenzene			10.0	10.19		ug/Sample		102	78 - 120	1	20
Dichlorodifluoromethane			10.0	8.292		ug/Sample		83	45 - 140	2	25
1,1-Dichloroethane			10.0	10.78		ug/Sample		108	78 - 130	3	20
1,2-Dichloroethane			10.0	10.47		ug/Sample		105	74 - 139	3	20
1,1-Dichloroethene			10.0	10.54		ug/Sample		105	70 - 126	0	26
cis-1,2-Dichloroethene			10.0	11.14		ug/Sample		111	78 - 120	8	20
trans-1,2-Dichloroethene			10.0	10.93		ug/Sample		109	74 - 123	3	20
1,2-Dichloropropane			10.0	10.67		ug/Sample		107	78 - 127	2	20
1,3-Dichloropropane			10.0	9.980		ug/Sample		100	73 - 120	2	20
2,2-Dichloropropane			10.0	10.68		ug/Sample		107	76 - 129	2	32
1,1-Dichloropropene			10.0	11.08		ug/Sample		111	77 - 123	2	20
cis-1,3-Dichloropropene			10.0	10.92		ug/Sample		109	76 - 121	3	24
trans-1,3-Dichloropropene			10.0	10.13		ug/Sample		101	79 - 120	3	27
Ethylbenzene			10.0	10.32		ug/Sample		103	75 - 120	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 140-56885/4
Matrix: Air
Analysis Batch: 56885

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorobutadiene			10.0	10.36		ug/Sample		104	60 - 137	1	25
2-Hexanone			40.0	41.60		ug/Sample		104	70 - 126	4	50
Isopropylbenzene			10.0	10.22		ug/Sample		102	76 - 120	2	20
4-Isopropyltoluene			10.0	10.11		ug/Sample		101	70 - 122	2	20
Methylene Chloride			10.0	10.83		ug/Sample		108	67 - 120	2	20
4-Methyl-2-pentanone (MIBK)			40.0	43.00		ug/Sample		107	72 - 132	3	23
N-Propylbenzene			10.0	9.915		ug/Sample		99	69 - 120	0	20
Styrene			10.0	10.04		ug/Sample		100	78 - 120	1	20
1,1,1,2-Tetrachloroethane			10.0	10.37		ug/Sample		104	80 - 120	1	25
1,1,2,2-Tetrachloroethane			10.0	9.591		ug/Sample		96	76 - 120	1	20
Tetrachloroethene			10.0	10.52		ug/Sample		105	77 - 121	2	20
Toluene			10.0	10.34		ug/Sample		103	72 - 120	2	20
1,2,3-Trichlorobenzene			10.0	11.30		ug/Sample		113	60 - 132	3	36
1,2,4-Trichlorobenzene			10.0	11.89		ug/Sample		119	60 - 140	3	28
1,1,1-Trichloroethane			10.0	11.14		ug/Sample		111	77 - 131	2	24
1,1,2-Trichloroethane			10.0	10.00		ug/Sample		100	76 - 120	2	20
Trichloroethene			10.0	11.10		ug/Sample		111	80 - 120	4	20
Trichlorofluoromethane			10.0	10.26		ug/Sample		103	62 - 128	2	20
1,2,3-Trichloropropane			10.0	10.07		ug/Sample		101	79 - 121	6	32
1,2,4-Trimethylbenzene			10.0	10.51		ug/Sample		105	71 - 120	1	20
1,3,5-Trimethylbenzene			10.0	10.56		ug/Sample		106	72 - 120	2	20
Vinyl chloride			10.0	9.554		ug/Sample		96	64 - 129	2	21
o-Xylene			10.0	10.04		ug/Sample		100	78 - 120	1	20
m,p-Xylene			10.0	10.08		ug/Sample		101	76 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*73 - 136*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*76 - 121*
Toluene-d8 (Surr)	*95*		*79 - 120*

Lab Sample ID: MB 140-57159/5
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/18/21 12:25	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/18/21 12:25	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/18/21 12:25	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/18/21 12:25	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/18/21 12:25	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/18/21 12:25	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/18/21 12:25	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/18/21 12:25	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/18/21 12:25	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/18/21 12:25	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/18/21 12:25	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/18/21 12:25	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 140-57159/5
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/18/21 12:25	1
Chlorobenzene	0.001141	J	0.0100	0.00100	ug/Sample			12/18/21 12:25	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/18/21 12:25	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/18/21 12:25	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/18/21 12:25	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/18/21 12:25	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/18/21 12:25	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/18/21 12:25	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/18/21 12:25	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/18/21 12:25	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/18/21 12:25	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/18/21 12:25	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/18/21 12:25	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/18/21 12:25	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/18/21 12:25	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/18/21 12:25	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/18/21 12:25	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/18/21 12:25	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/18/21 12:25	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/18/21 12:25	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/18/21 12:25	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/18/21 12:25	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/18/21 12:25	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/18/21 12:25	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/18/21 12:25	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/18/21 12:25	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/18/21 12:25	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/18/21 12:25	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/18/21 12:25	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/18/21 12:25	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/18/21 12:25	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/18/21 12:25	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/18/21 12:25	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/18/21 12:25	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/18/21 12:25	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/18/21 12:25	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/18/21 12:25	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/18/21 12:25	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/18/21 12:25	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/18/21 12:25	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/18/21 12:25	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/18/21 12:25	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/18/21 12:25	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/18/21 12:25	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/18/21 12:25	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/18/21 12:25	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/18/21 12:25	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/18/21 12:25	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/18/21 12:25	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 140-57159/5
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/18/21 12:25	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/18/21 12:25	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*					*12/18/21 12:25*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*50 - 127*		*12/18/21 12:25*	*1*
4-Bromofluorobenzene (Surr)	*94*		*50 - 122*		*12/18/21 12:25*	*1*
Dibromofluoromethane (Surr)	*107*		*50 - 134*		*12/18/21 12:25*	*1*
Toluene-d8 (Surr)	*114*		*57 - 134*		*12/18/21 12:25*	*1*

Lab Sample ID: LCS 140-57159/3
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	1.20	0.5352		ug/Sample		45	20 - 191
Benzene	0.310	0.3296		ug/Sample		106	68 - 128
Bromobenzene	0.310	0.2673		ug/Sample		86	53 - 120
Bromochloromethane	0.310	0.2744		ug/Sample		89	53 - 120
Bromodichloromethane	0.310	0.2763		ug/Sample		89	52 - 122
Bromoform	0.310	0.2314		ug/Sample		75	40 - 120
Bromomethane	0.620	0.7161		ug/Sample		115	40 - 187
2-Butanone (MEK)	1.20	0.6055		ug/Sample		50	20 - 150
n-Butylbenzene	0.310	0.3964		ug/Sample		128	57 - 140
sec-Butylbenzene	0.310	0.3527		ug/Sample		114	70 - 128
tert-Butylbenzene	0.310	0.3312		ug/Sample		107	67 - 122
Carbon disulfide	0.310	0.3825		ug/Sample		123	40 - 157
Carbon tetrachloride	0.310	0.3978		ug/Sample		128	67 - 135
Chlorobenzene	0.310	0.2960		ug/Sample		95	65 - 120
Chlorodibromomethane	0.310	0.2463		ug/Sample		79	50 - 120
Chloroethane	0.620	0.8161		ug/Sample		132	43 - 163
Chloroform	0.310	0.2946		ug/Sample		95	63 - 123
Chloromethane	0.620	0.5937		ug/Sample		96	44 - 176
2-Chlorotoluene	0.310	0.3015		ug/Sample		97	59 - 120
4-Chlorotoluene	0.310	0.3068		ug/Sample		99	57 - 120
1,2-Dibromo-3-Chloropropane	0.310	0.1244		ug/Sample		40	10 - 120
1,2-Dibromoethane (EDB)	0.310	0.2111		ug/Sample		68	20 - 120
Dibromomethane	0.310	0.2328		ug/Sample		75	50 - 120
1,2-Dichlorobenzene	0.310	0.2545		ug/Sample		82	20 - 124
1,3-Dichlorobenzene	0.310	0.2948		ug/Sample		95	30 - 132
1,4-Dichlorobenzene	0.310	0.2875		ug/Sample		93	30 - 129
Dichlorodifluoromethane	0.620	0.8185		ug/Sample		132	25 - 146
1,1-Dichloroethane	0.310	0.3330		ug/Sample		107	66 - 128
1,2-Dichloroethane	0.310	0.2375		ug/Sample		77	36 - 124
1,1-Dichloroethene	0.310	0.3715		ug/Sample		120	77 - 131
cis-1,2-Dichloroethene	0.310	0.3183		ug/Sample		103	67 - 123

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-57159/3
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,2-Dichloroethene	0.310	0.3601		ug/Sample		116	78 - 128
1,2-Dichloropropane	0.310	0.2768		ug/Sample		89	55 - 124
1,3-Dichloropropane	0.310	0.2236		ug/Sample		72	50 - 120
2,2-Dichloropropane	0.310	0.3514		ug/Sample		113	59 - 141
1,1-Dichloropropene	0.310	0.3656		ug/Sample		118	70 - 136
cis-1,3-Dichloropropene	0.310	0.2679		ug/Sample		86	45 - 125
trans-1,3-Dichloropropene	0.310	0.2474		ug/Sample		80	40 - 120
Ethylbenzene	0.310	0.3287		ug/Sample		106	72 - 127
Hexachlorobutadiene	0.310	0.3945		ug/Sample		127	52 - 167
2-Hexanone	1.20	0.6198		ug/Sample		52	30 - 151
Isopropylbenzene	0.310	0.3366		ug/Sample		109	40 - 152
4-Isopropyltoluene	0.310	0.3767		ug/Sample		122	66 - 126
Methylene Chloride	0.310	0.2782		ug/Sample		90	60 - 134
4-Methyl-2-pentanone (MIBK)	1.20	0.6721		ug/Sample		56	30 - 175
N-Propylbenzene	0.310	0.3376		ug/Sample		109	69 - 123
Styrene	0.310	0.2779		ug/Sample		90	57 - 120
1,1,1,2-Tetrachloroethane	0.310	0.2666		ug/Sample		86	53 - 120
1,1,2,2-Tetrachloroethane	0.310	0.1909		ug/Sample		62	30 - 120
Tetrachloroethene	0.310	0.3718		ug/Sample		120	80 - 133
Toluene	0.310	0.3248		ug/Sample		105	70 - 120
1,2,3-Trichlorobenzene	0.310	0.1899		ug/Sample		61	20 - 123
1,2,4-Trichlorobenzene	0.310	0.2551		ug/Sample		82	20 - 140
1,1,1-Trichloroethane	0.310	0.3593		ug/Sample		116	65 - 131
1,1,2-Trichloroethane	0.310	0.2276		ug/Sample		73	41 - 120
Trichloroethene	0.310	0.3522		ug/Sample		114	80 - 141
Trichlorofluoromethane	0.620	0.7308		ug/Sample		118	58 - 147
1,2,3-Trichloropropane	0.310	0.1826		ug/Sample		59	30 - 120
1,2,4-Trimethylbenzene	0.310	0.3567		ug/Sample		115	56 - 120
1,3,5-Trimethylbenzene	0.310	0.3736		ug/Sample		121	62 - 121
Vinyl chloride	0.620	0.6772		ug/Sample		109	64 - 142
o-Xylene	0.310	0.2982		ug/Sample		96	64 - 120
m,p-Xylene	0.310	0.3219		ug/Sample		104	74 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*50 - 127*
4-Bromofluorobenzene (Surr)	*96*		*50 - 122*
Dibromofluoromethane (Surr)	*108*		*50 - 134*
Toluene-d8 (Surr)	*112*		*57 - 134*

Lab Sample ID: LCSD 140-57159/4
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	1.20	0.4859		ug/Sample		40	20 - 191	10	50
Benzene	0.320	0.3405		ug/Sample		106	68 - 128	3	22
Bromobenzene	0.320	0.2731		ug/Sample		85	53 - 120	2	38
Bromochloromethane	0.320	0.2782		ug/Sample		87	53 - 120	1	36

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 140-57159/4
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromodichloromethane	0.320	0.2866		ug/Sample		90	52 - 122	4	35
Bromoform	0.320	0.2258		ug/Sample		71	40 - 120	2	50
Bromomethane	0.640	0.8230		ug/Sample		129	40 - 187	14	35
2-Butanone (MEK)	1.20	0.5767		ug/Sample		48	20 - 150	5	50
n-Butylbenzene	0.320	0.4233		ug/Sample		132	57 - 140	7	31
sec-Butylbenzene	0.320	0.3765		ug/Sample		118	70 - 128	7	26
tert-Butylbenzene	0.320	0.3539		ug/Sample		111	67 - 122	7	26
Carbon disulfide	0.320	0.3982		ug/Sample		124	40 - 157	4	23
Carbon tetrachloride	0.320	0.4186		ug/Sample		131	67 - 135	5	23
Chlorobenzene	0.320	0.3024		ug/Sample		95	65 - 120	2	26
Chlorodibromomethane	0.320	0.2444		ug/Sample		76	50 - 120	1	43
Chloroethane	0.640	0.8741		ug/Sample		137	43 - 163	7	32
Chloroform	0.320	0.3049		ug/Sample		95	63 - 123	3	27
Chloromethane	0.640	0.5891		ug/Sample		92	44 - 176	1	50
2-Chlorotoluene	0.320	0.3217		ug/Sample		101	59 - 120	6	29
4-Chlorotoluene	0.320	0.3283		ug/Sample		103	57 - 120	7	30
1,2-Dibromo-3-Chloropropane	0.320	0.1279		ug/Sample		40	10 - 120	3	50
1,2-Dibromoethane (EDB)	0.320	0.2130		ug/Sample		67	20 - 120	1	43
Dibromomethane	0.320	0.2382		ug/Sample		74	50 - 120	2	42
1,2-Dichlorobenzene	0.320	0.2706		ug/Sample		85	20 - 124	6	49
1,3-Dichlorobenzene	0.320	0.3147		ug/Sample		98	30 - 132	7	39
1,4-Dichlorobenzene	0.320	0.3043		ug/Sample		95	30 - 129	6	42
Dichlorodifluoromethane	0.640	0.8719		ug/Sample		136	25 - 146	6	42
1,1-Dichloroethane	0.320	0.3447		ug/Sample		108	66 - 128	3	24
1,2-Dichloroethane	0.320	0.2383		ug/Sample		74	36 - 124	0	37
1,1-Dichloroethene	0.320	0.3799		ug/Sample		119	77 - 131	2	22
cis-1,2-Dichloroethene	0.320	0.3300		ug/Sample		103	67 - 123	4	27
trans-1,2-Dichloroethene	0.320	0.3738		ug/Sample		117	78 - 128	4	23
1,2-Dichloropropane	0.320	0.2843		ug/Sample		89	55 - 124	3	31
1,3-Dichloropropane	0.320	0.2236		ug/Sample		70	50 - 120	0	38
2,2-Dichloropropane	0.320	0.3870		ug/Sample		121	59 - 141	10	25
1,1-Dichloropropene	0.320	0.3804		ug/Sample		119	70 - 136	4	21
cis-1,3-Dichloropropene	0.320	0.2753		ug/Sample		86	45 - 125	3	36
trans-1,3-Dichloropropene	0.320	0.2478		ug/Sample		77	40 - 120	0	40
Ethylbenzene	0.320	0.3321		ug/Sample		104	72 - 127	1	23
Hexachlorobutadiene	0.320	0.4461		ug/Sample		139	52 - 167	12	50
2-Hexanone	1.20	0.5776		ug/Sample		48	30 - 151	7	50
Isopropylbenzene	0.320	0.3456		ug/Sample		108	40 - 152	3	28
4-Isopropyltoluene	0.320	0.4001		ug/Sample		125	66 - 126	6	28
Methylene Chloride	0.320	0.2968		ug/Sample		93	60 - 134	6	41
4-Methyl-2-pentanone (MIBK)	1.20	0.6566		ug/Sample		55	30 - 175	2	50
N-Propylbenzene	0.320	0.3563		ug/Sample		111	69 - 123	5	25
Styrene	0.320	0.2844		ug/Sample		89	57 - 120	2	39
1,1,1,2-Tetrachloroethane	0.320	0.2782		ug/Sample		87	53 - 120	4	35
1,1,2,2-Tetrachloroethane	0.320	0.1794		ug/Sample		56	30 - 120	6	50
Tetrachloroethene	0.320	0.3768		ug/Sample		118	80 - 133	1	24
Toluene	0.320	0.3332		ug/Sample		104	70 - 120	3	22
1,2,3-Trichlorobenzene	0.320	0.2103		ug/Sample		66	20 - 123	10	50
1,2,4-Trichlorobenzene	0.320	0.2848		ug/Sample		89	20 - 140	11	50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 140-57159/4
Matrix: Air
Analysis Batch: 57159

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.320	0.3844		ug/Sample		120	65 - 131	7	23
1,1,2-Trichloroethane			0.320	0.2229		ug/Sample		70	41 - 120	2	38
Trichloroethene			0.320	0.3765		ug/Sample		118	80 - 141	7	32
Trichlorofluoromethane			0.640	0.8210		ug/Sample		128	58 - 147	12	26
1,2,3-Trichloropropane			0.320	0.1936		ug/Sample		61	30 - 120	6	50
1,2,4-Trimethylbenzene			0.320	0.3832		ug/Sample		120	56 - 120	7	35
1,3,5-Trimethylbenzene			0.320	0.3977	*+	ug/Sample		124	62 - 121	6	30
Vinyl chloride			0.640	0.7137		ug/Sample		112	64 - 142	5	33
o-Xylene			0.320	0.3091		ug/Sample		97	64 - 120	4	37
m,p-Xylene			0.320	0.3258		ug/Sample		102	74 - 126	1	38

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*50 - 127*
4-Bromofluorobenzene (Surr)	*99*		*50 - 122*
Dibromofluoromethane (Surr)	*107*		*50 - 134*
Toluene-d8 (Surr)	*111*		*57 - 134*

Lab Sample ID: MB 140-57160/6
Matrix: Air
Analysis Batch: 57160

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/20/21 11:58	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/20/21 11:58	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/20/21 11:58	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/20/21 11:58	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/20/21 11:58	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/20/21 11:58	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/20/21 11:58	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/20/21 11:58	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/20/21 11:58	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/20/21 11:58	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/20/21 11:58	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/20/21 11:58	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/20/21 11:58	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/20/21 11:58	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/20/21 11:58	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/20/21 11:58	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/20/21 11:58	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/20/21 11:58	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/20/21 11:58	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/20/21 11:58	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/20/21 11:58	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/20/21 11:58	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/20/21 11:58	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/20/21 11:58	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/20/21 11:58	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/20/21 11:58	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 140-57160/6
Matrix: Air
Analysis Batch: 57160

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/20/21 11:58	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/20/21 11:58	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/20/21 11:58	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/20/21 11:58	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/20/21 11:58	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/20/21 11:58	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/20/21 11:58	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/20/21 11:58	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/20/21 11:58	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/20/21 11:58	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/20/21 11:58	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/20/21 11:58	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/20/21 11:58	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/20/21 11:58	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/20/21 11:58	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/20/21 11:58	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/20/21 11:58	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/20/21 11:58	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/20/21 11:58	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/20/21 11:58	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/20/21 11:58	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/20/21 11:58	1
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/20/21 11:58	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/20/21 11:58	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/20/21 11:58	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/20/21 11:58	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/20/21 11:58	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/20/21 11:58	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/20/21 11:58	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/20/21 11:58	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/20/21 11:58	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/20/21 11:58	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/20/21 11:58	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/20/21 11:58	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/20/21 11:58	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/20/21 11:58	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/20/21 11:58	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*					*12/20/21 11:58*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*50 - 127*		*12/20/21 11:58*	*1*
4-Bromofluorobenzene (Surr)	*78*		*50 - 122*		*12/20/21 11:58*	*1*
Dibromofluoromethane (Surr)	*92*		*50 - 134*		*12/20/21 11:58*	*1*
Toluene-d8 (Surr)	*100*		*57 - 134*		*12/20/21 11:58*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-57160/3
Matrix: Air
Analysis Batch: 57160

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	1.20	0.4781		ug/Sample		40	20 - 191
Benzene	0.300	0.3199		ug/Sample		107	68 - 128
Bromobenzene	0.300	0.2661		ug/Sample		89	53 - 120
Bromochloromethane	0.300	0.2743		ug/Sample		91	53 - 120
Bromodichloromethane	0.300	0.2782		ug/Sample		93	52 - 122
Bromoform	0.300	0.2290		ug/Sample		76	40 - 120
Bromomethane	0.600	0.7447		ug/Sample		124	40 - 187
2-Butanone (MEK)	1.20	0.6358		ug/Sample		53	20 - 150
n-Butylbenzene	0.300	0.3613		ug/Sample		120	57 - 140
sec-Butylbenzene	0.300	0.3237		ug/Sample		108	70 - 128
tert-Butylbenzene	0.300	0.3043		ug/Sample		101	67 - 122
Carbon disulfide	0.300	0.3613		ug/Sample		120	40 - 157
Carbon tetrachloride	0.300	0.3917		ug/Sample		131	67 - 135
Chlorobenzene	0.300	0.2835		ug/Sample		94	65 - 120
Chlorodibromomethane	0.300	0.2422		ug/Sample		81	50 - 120
Chloroethane	0.600	0.7891		ug/Sample		132	43 - 163
Chloroform	0.300	0.2894		ug/Sample		96	63 - 123
Chloromethane	0.600	0.5578		ug/Sample		93	44 - 176
2-Chlorotoluene	0.300	0.2880		ug/Sample		96	59 - 120
4-Chlorotoluene	0.300	0.2937		ug/Sample		98	57 - 120
1,2-Dibromo-3-Chloropropane	0.300	0.1188		ug/Sample		40	10 - 120
1,2-Dibromoethane (EDB)	0.300	0.2116		ug/Sample		71	20 - 120
Dibromomethane	0.300	0.2351		ug/Sample		78	50 - 120
1,2-Dichlorobenzene	0.300	0.2492		ug/Sample		83	20 - 124
1,3-Dichlorobenzene	0.300	0.2863		ug/Sample		95	30 - 132
1,4-Dichlorobenzene	0.300	0.2779		ug/Sample		93	30 - 129
Dichlorodifluoromethane	0.600	0.7802		ug/Sample		130	25 - 146
1,1-Dichloroethane	0.300	0.3178		ug/Sample		106	66 - 128
1,2-Dichloroethane	0.300	0.2367		ug/Sample		79	36 - 124
1,1-Dichloroethene	0.300	0.3519		ug/Sample		117	77 - 131
cis-1,2-Dichloroethene	0.300	0.3153		ug/Sample		105	67 - 123
trans-1,2-Dichloroethene	0.300	0.3406		ug/Sample		114	78 - 128
1,2-Dichloropropane	0.300	0.2735		ug/Sample		91	55 - 124
1,3-Dichloropropane	0.300	0.2147		ug/Sample		72	50 - 120
2,2-Dichloropropane	0.300	0.3538		ug/Sample		118	59 - 141
1,1-Dichloropropene	0.300	0.3487		ug/Sample		116	70 - 136
cis-1,3-Dichloropropene	0.300	0.2667		ug/Sample		89	45 - 125
trans-1,3-Dichloropropene	0.300	0.2427		ug/Sample		81	40 - 120
Ethylbenzene	0.300	0.3119		ug/Sample		104	72 - 127
Hexachlorobutadiene	0.300	0.3493		ug/Sample		116	52 - 167
2-Hexanone	1.20	0.6320		ug/Sample		53	30 - 151
Isopropylbenzene	0.300	0.3253		ug/Sample		108	40 - 152
4-Isopropyltoluene	0.300	0.3459		ug/Sample		115	66 - 126
Methylene Chloride	0.300	0.2752		ug/Sample		92	60 - 134
4-Methyl-2-pentanone (MIBK)	1.20	0.7155		ug/Sample		60	30 - 175
N-Propylbenzene	0.300	0.3120		ug/Sample		104	69 - 123
Styrene	0.300	0.2794		ug/Sample		93	57 - 120
1,1,1,2-Tetrachloroethane	0.300	0.2717		ug/Sample		91	53 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-57160/3
Matrix: Air
Analysis Batch: 57160

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,2,2-Tetrachloroethane			0.300	0.1682		ug/Sample		56	30 - 120		
Tetrachloroethene			0.300	0.3451		ug/Sample		115	80 - 133		
Toluene			0.300	0.3104		ug/Sample		103	70 - 120		
1,2,3-Trichlorobenzene			0.300	0.1848		ug/Sample		62	20 - 123		
1,2,4-Trichlorobenzene			0.300	0.2436		ug/Sample		81	20 - 140		
1,1,1-Trichloroethane			0.300	0.3491		ug/Sample		116	65 - 131		
1,1,2-Trichloroethane			0.300	0.2197		ug/Sample		73	41 - 120		
Trichloroethene			0.300	0.3697		ug/Sample		123	80 - 141		
Trichlorofluoromethane			0.600	0.7465		ug/Sample		124	58 - 147		
1,2,3-Trichloropropane			0.300	0.1823		ug/Sample		61	30 - 120		
1,2,4-Trimethylbenzene			0.300	0.3358		ug/Sample		112	56 - 120		
1,3,5-Trimethylbenzene			0.300	0.3492		ug/Sample		116	62 - 121		
Vinyl chloride			0.600	0.6734		ug/Sample		112	64 - 142		
o-Xylene			0.300	0.2966		ug/Sample		99	64 - 120		
m,p-Xylene			0.300	0.3129		ug/Sample		104	74 - 126		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*50 - 127*
4-Bromofluorobenzene (Surr)	*93*		*50 - 122*
Dibromofluoromethane (Surr)	*109*		*50 - 134*
Toluene-d8 (Surr)	*110*		*57 - 134*

Lab Sample ID: LCSD 140-57160/4
Matrix: Air
Analysis Batch: 57160

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone			1.16	0.3246		ug/Sample		28	20 - 191	38	50
Benzene			0.300	0.3111		ug/Sample		104	68 - 128	3	22
Bromobenzene			0.300	0.2505		ug/Sample		83	53 - 120	6	38
Bromochloromethane			0.300	0.2506		ug/Sample		84	53 - 120	9	36
Bromodichloromethane			0.300	0.2580		ug/Sample		86	52 - 122	8	35
Bromoform			0.300	0.2049		ug/Sample		68	40 - 120	11	50
Bromomethane			0.600	0.7279		ug/Sample		121	40 - 187	2	35
2-Butanone (MEK)			1.16	0.5340		ug/Sample		46	20 - 150	17	50
n-Butylbenzene			0.300	0.3711		ug/Sample		124	57 - 140	3	31
sec-Butylbenzene			0.300	0.3287		ug/Sample		110	70 - 128	2	26
tert-Butylbenzene			0.300	0.3094		ug/Sample		103	67 - 122	2	26
Carbon disulfide			0.300	0.3593		ug/Sample		120	40 - 157	1	23
Carbon tetrachloride			0.300	0.3804		ug/Sample		127	67 - 135	3	23
Chlorobenzene			0.300	0.2736		ug/Sample		91	65 - 120	4	26
Chlorodibromomethane			0.300	0.2260		ug/Sample		75	50 - 120	7	43
Chloroethane			0.600	0.7582		ug/Sample		126	43 - 163	4	32
Chloroform			0.300	0.2780		ug/Sample		93	63 - 123	4	27
Chloromethane			0.600	0.4989		ug/Sample		83	44 - 176	11	50
2-Chlorotoluene			0.300	0.2869		ug/Sample		96	59 - 120	0	29
4-Chlorotoluene			0.300	0.2869		ug/Sample		96	57 - 120	2	30
1,2-Dibromo-3-Chloropropane			0.300	0.1077		ug/Sample		36	10 - 120	10	50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 140-57160/4
Matrix: Air
Analysis Batch: 57160

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)			0.300	0.1931		ug/Sample		64	20 - 120	9	43
Dibromomethane			0.300	0.2145		ug/Sample		71	50 - 120	9	42
1,2-Dichlorobenzene			0.300	0.2374		ug/Sample		79	20 - 124	5	49
1,3-Dichlorobenzene			0.300	0.2765		ug/Sample		92	30 - 132	3	39
1,4-Dichlorobenzene			0.300	0.2645		ug/Sample		88	30 - 129	5	42
Dichlorodifluoromethane			0.600	0.7583		ug/Sample		126	25 - 146	3	42
1,1-Dichloroethane			0.300	0.3112		ug/Sample		104	66 - 128	2	24
1,2-Dichloroethane			0.300	0.2175		ug/Sample		72	36 - 124	8	37
1,1-Dichloroethene			0.300	0.3454		ug/Sample		115	77 - 131	2	22
cis-1,2-Dichloroethene			0.300	0.3005		ug/Sample		100	67 - 123	5	27
trans-1,2-Dichloroethene			0.300	0.3362		ug/Sample		112	78 - 128	1	23
1,2-Dichloropropane			0.300	0.2571		ug/Sample		86	55 - 124	6	31
1,3-Dichloropropane			0.300	0.2034		ug/Sample		68	50 - 120	5	38
2,2-Dichloropropane			0.300	0.3420		ug/Sample		114	59 - 141	3	25
1,1-Dichloropropene			0.300	0.3452		ug/Sample		115	70 - 136	1	21
cis-1,3-Dichloropropene			0.300	0.2471		ug/Sample		82	45 - 125	8	36
trans-1,3-Dichloropropene			0.300	0.2248		ug/Sample		75	40 - 120	8	40
Ethylbenzene			0.300	0.3087		ug/Sample		103	72 - 127	1	23
Hexachlorobutadiene			0.300	0.3545		ug/Sample		118	52 - 167	1	50
2-Hexanone			1.16	0.5455		ug/Sample		47	30 - 151	15	50
Isopropylbenzene			0.300	0.3254		ug/Sample		108	40 - 152	0	28
4-Isopropyltoluene			0.300	0.3507		ug/Sample		117	66 - 126	1	28
Methylene Chloride			0.300	0.2557		ug/Sample		85	60 - 134	7	41
4-Methyl-2-pentanone (MIBK)			1.16	0.6097		ug/Sample		53	30 - 175	16	50
N-Propylbenzene			0.300	0.3181		ug/Sample		106	69 - 123	2	25
Styrene			0.300	0.2678		ug/Sample		89	57 - 120	4	39
1,1,1,2-Tetrachloroethane			0.300	0.2546		ug/Sample		85	53 - 120	7	35
1,1,2,2-Tetrachloroethane			0.300	0.1695		ug/Sample		57	30 - 120	1	50
Tetrachloroethene			0.300	0.3451		ug/Sample		115	80 - 133	0	24
Toluene			0.300	0.3049		ug/Sample		102	70 - 120	2	22
1,2,3-Trichlorobenzene			0.300	0.1634		ug/Sample		54	20 - 123	12	50
1,2,4-Trichlorobenzene			0.300	0.2216		ug/Sample		74	20 - 140	9	50
1,1,1-Trichloroethane			0.300	0.3449		ug/Sample		115	65 - 131	1	23
1,1,2-Trichloroethane			0.300	0.2062		ug/Sample		69	41 - 120	6	38
Trichloroethene			0.300	0.3338		ug/Sample		111	80 - 141	10	32
Trichlorofluoromethane			0.600	0.7113		ug/Sample		119	58 - 147	5	26
1,2,3-Trichloropropane			0.300	0.1614		ug/Sample		54	30 - 120	12	50
1,2,4-Trimethylbenzene			0.300	0.3358		ug/Sample		112	56 - 120	0	35
1,3,5-Trimethylbenzene			0.300	0.3518		ug/Sample		117	62 - 121	1	30
Vinyl chloride			0.600	0.6504		ug/Sample		108	64 - 142	3	33
o-Xylene			0.300	0.2896		ug/Sample		97	64 - 120	2	37
m,p-Xylene			0.300	0.3115		ug/Sample		104	74 - 126	0	38

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*50 - 127*
4-Bromofluorobenzene (Surr)	*93*		*50 - 122*
Dibromofluoromethane (Surr)	*105*		*50 - 134*
Toluene-d8 (Surr)	*110*		*57 - 134*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 140-57494/6
Matrix: Air
Analysis Batch: 57494

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.250	0.154	ug/Sample			12/29/21 11:28	1
Benzene	ND		0.0100	0.00570	ug/Sample			12/29/21 11:28	1
Bromobenzene	ND		0.0100	0.00190	ug/Sample			12/29/21 11:28	1
Bromochloromethane	ND		0.0250	0.00810	ug/Sample			12/29/21 11:28	1
Bromodichloromethane	ND		0.0100	0.00170	ug/Sample			12/29/21 11:28	1
Bromoform	ND		0.0250	0.00240	ug/Sample			12/29/21 11:28	1
Bromomethane	ND		0.0500	0.0110	ug/Sample			12/29/21 11:28	1
2-Butanone (MEK)	ND		0.100	0.0650	ug/Sample			12/29/21 11:28	1
n-Butylbenzene	ND		0.0250	0.0130	ug/Sample			12/29/21 11:28	1
sec-Butylbenzene	ND		0.0250	0.0110	ug/Sample			12/29/21 11:28	1
tert-Butylbenzene	ND		0.0100	0.00510	ug/Sample			12/29/21 11:28	1
Carbon disulfide	ND		0.0250	0.0110	ug/Sample			12/29/21 11:28	1
Carbon tetrachloride	ND		0.0100	0.00240	ug/Sample			12/29/21 11:28	1
Chlorobenzene	ND		0.0100	0.00100	ug/Sample			12/29/21 11:28	1
Chlorodibromomethane	ND		0.0250	0.00370	ug/Sample			12/29/21 11:28	1
Chloroethane	ND		0.0500	0.0101	ug/Sample			12/29/21 11:28	1
Chloroform	ND		0.0100	0.00810	ug/Sample			12/29/21 11:28	1
Chloromethane	ND		0.0500	0.0225	ug/Sample			12/29/21 11:28	1
2-Chlorotoluene	ND		0.0100	0.00330	ug/Sample			12/29/21 11:28	1
4-Chlorotoluene	ND		0.0100	0.00440	ug/Sample			12/29/21 11:28	1
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0106	ug/Sample			12/29/21 11:28	1
1,2-Dibromoethane (EDB)	ND		0.0250	0.00730	ug/Sample			12/29/21 11:28	1
Dibromomethane	ND		0.0250	0.00420	ug/Sample			12/29/21 11:28	1
1,2-Dichlorobenzene	ND		0.0100	0.00910	ug/Sample			12/29/21 11:28	1
1,3-Dichlorobenzene	ND		0.0100	0.00730	ug/Sample			12/29/21 11:28	1
1,4-Dichlorobenzene	ND		0.0100	0.00900	ug/Sample			12/29/21 11:28	1
Dichlorodifluoromethane	ND		0.0250	0.00620	ug/Sample			12/29/21 11:28	1
1,1-Dichloroethane	ND		0.0100	0.00270	ug/Sample			12/29/21 11:28	1
1,2-Dichloroethane	ND		0.0100	0.00170	ug/Sample			12/29/21 11:28	1
1,1-Dichloroethene	ND		0.0100	0.00430	ug/Sample			12/29/21 11:28	1
cis-1,2-Dichloroethene	ND		0.0100	0.00320	ug/Sample			12/29/21 11:28	1
trans-1,2-Dichloroethene	ND		0.0100	0.00370	ug/Sample			12/29/21 11:28	1
1,2-Dichloropropane	ND		0.0100	0.00410	ug/Sample			12/29/21 11:28	1
1,3-Dichloropropane	ND		0.0100	0.00200	ug/Sample			12/29/21 11:28	1
2,2-Dichloropropane	ND		0.0100	0.00230	ug/Sample			12/29/21 11:28	1
1,1-Dichloropropene	ND		0.0100	0.00210	ug/Sample			12/29/21 11:28	1
cis-1,3-Dichloropropene	ND		0.0100	0.00250	ug/Sample			12/29/21 11:28	1
trans-1,3-Dichloropropene	ND		0.0100	0.00340	ug/Sample			12/29/21 11:28	1
Ethylbenzene	ND		0.0100	0.00780	ug/Sample			12/29/21 11:28	1
Hexachlorobutadiene	ND		0.0250	0.0180	ug/Sample			12/29/21 11:28	1
2-Hexanone	ND		0.100	0.0265	ug/Sample			12/29/21 11:28	1
Isopropylbenzene	ND		0.0100	0.00950	ug/Sample			12/29/21 11:28	1
4-Isopropyltoluene	ND		0.0100	0.0100	ug/Sample			12/29/21 11:28	1
Methylene Chloride	ND		0.100	0.0860	ug/Sample			12/29/21 11:28	1
4-Methyl-2-pentanone (MIBK)	ND		0.100	0.0361	ug/Sample			12/29/21 11:28	1
N-Propylbenzene	ND		0.0100	0.00920	ug/Sample			12/29/21 11:28	1
Styrene	ND		0.0100	0.00210	ug/Sample			12/29/21 11:28	1
1,1,1,2-Tetrachloroethane	ND		0.0100	0.00180	ug/Sample			12/29/21 11:28	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 140-57494/6
Matrix: Air
Analysis Batch: 57494

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0250	0.0104	ug/Sample			12/29/21 11:28	1
Tetrachloroethene	ND		0.0100	0.00100	ug/Sample			12/29/21 11:28	1
Toluene	ND		0.0250	0.0147	ug/Sample			12/29/21 11:28	1
1,2,3-Trichlorobenzene	ND		0.0250	0.0222	ug/Sample			12/29/21 11:28	1
1,2,4-Trichlorobenzene	ND		0.0250	0.0205	ug/Sample			12/29/21 11:28	1
1,1,1-Trichloroethane	ND		0.0250	0.00480	ug/Sample			12/29/21 11:28	1
1,1,2-Trichloroethane	ND		0.0250	0.00760	ug/Sample			12/29/21 11:28	1
Trichloroethene	ND		0.0100	0.00310	ug/Sample			12/29/21 11:28	1
Trichlorofluoromethane	ND		0.0500	0.00530	ug/Sample			12/29/21 11:28	1
1,2,3-Trichloropropane	ND		0.0250	0.0104	ug/Sample			12/29/21 11:28	1
1,2,4-Trimethylbenzene	ND		0.0100	0.00710	ug/Sample			12/29/21 11:28	1
1,3,5-Trimethylbenzene	ND		0.0100	0.00200	ug/Sample			12/29/21 11:28	1
Vinyl chloride	ND		0.0250	0.00640	ug/Sample			12/29/21 11:28	1
o-Xylene	ND		0.0100	0.00740	ug/Sample			12/29/21 11:28	1
m,p-Xylene	ND		0.0200	0.00700	ug/Sample			12/29/21 11:28	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Sample*					*12/29/21 11:28*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*50 - 127*		*12/29/21 11:28*	*1*
4-Bromofluorobenzene (Surr)	*82*		*50 - 122*		*12/29/21 11:28*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 134*		*12/29/21 11:28*	*1*
Toluene-d8 (Surr)	*107*		*57 - 134*		*12/29/21 11:28*	*1*

Lab Sample ID: LCS 140-57494/3
Matrix: Air
Analysis Batch: 57494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	1.20	0.5370		ug/Sample		45	20 - 191
Benzene	0.300	0.3106		ug/Sample		104	68 - 128
Bromobenzene	0.300	0.2681		ug/Sample		89	53 - 120
Bromochloromethane	0.300	0.2697		ug/Sample		90	53 - 120
Bromodichloromethane	0.300	0.2586		ug/Sample		86	52 - 122
Bromoform	0.300	0.2260		ug/Sample		75	40 - 120
Bromomethane	0.600	0.7262		ug/Sample		121	40 - 187
2-Butanone (MEK)	1.20	0.5998		ug/Sample		50	20 - 150
n-Butylbenzene	0.300	0.3630		ug/Sample		121	57 - 140
sec-Butylbenzene	0.300	0.3225		ug/Sample		107	70 - 128
tert-Butylbenzene	0.300	0.3045		ug/Sample		101	67 - 122
Carbon disulfide	0.300	0.3344		ug/Sample		111	40 - 157
Carbon tetrachloride	0.300	0.3801		ug/Sample		127	67 - 135
Chlorobenzene	0.300	0.2907		ug/Sample		97	65 - 120
Chlorodibromomethane	0.300	0.2440		ug/Sample		81	50 - 120
Chloroethane	0.600	0.7166		ug/Sample		119	43 - 163
Chloroform	0.300	0.2766		ug/Sample		92	63 - 123
Chloromethane	0.600	0.4656		ug/Sample		78	44 - 176

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-57494/3
Matrix: Air
Analysis Batch: 57494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chlorotoluene	0.300	0.2897		ug/Sample		97	59 - 120
4-Chlorotoluene	0.300	0.2934		ug/Sample		98	57 - 120
1,2-Dibromo-3-Chloropropane	0.300	0.1146		ug/Sample		38	10 - 120
1,2-Dibromoethane (EDB)	0.300	0.2039		ug/Sample		68	20 - 120
Dibromomethane	0.300	0.2243		ug/Sample		75	50 - 120
1,2-Dichlorobenzene	0.300	0.2420		ug/Sample		81	20 - 124
1,3-Dichlorobenzene	0.300	0.2824		ug/Sample		94	30 - 132
1,4-Dichlorobenzene	0.300	0.2735		ug/Sample		91	30 - 129
Dichlorodifluoromethane	0.600	0.5502		ug/Sample		92	25 - 146
1,1-Dichloroethane	0.300	0.3038		ug/Sample		101	66 - 128
1,2-Dichloroethane	0.300	0.2338		ug/Sample		78	36 - 124
1,1-Dichloroethene	0.300	0.3356		ug/Sample		112	77 - 131
cis-1,2-Dichloroethene	0.300	0.3077		ug/Sample		103	67 - 123
trans-1,2-Dichloroethene	0.300	0.3299		ug/Sample		110	78 - 128
1,2-Dichloropropane	0.300	0.2619		ug/Sample		87	55 - 124
1,3-Dichloropropane	0.300	0.2131		ug/Sample		71	50 - 120
2,2-Dichloropropane	0.300	0.3345		ug/Sample		111	59 - 141
1,1-Dichloropropene	0.300	0.3403		ug/Sample		113	70 - 136
cis-1,3-Dichloropropene	0.300	0.2558		ug/Sample		85	45 - 125
trans-1,3-Dichloropropene	0.300	0.2424		ug/Sample		81	40 - 120
Ethylbenzene	0.300	0.3224		ug/Sample		107	72 - 127
Hexachlorobutadiene	0.300	0.3355		ug/Sample		112	52 - 167
2-Hexanone	1.20	0.5922		ug/Sample		49	30 - 151
Isopropylbenzene	0.300	0.3345		ug/Sample		112	40 - 152
4-Isopropyltoluene	0.300	0.3465		ug/Sample		116	66 - 126
Methylene Chloride	0.300	0.3807		ug/Sample		127	60 - 134
4-Methyl-2-pentanone (MIBK)	1.20	0.6540		ug/Sample		54	30 - 175
N-Propylbenzene	0.300	0.3149		ug/Sample		105	69 - 123
Styrene	0.300	0.2881		ug/Sample		96	57 - 120
1,1,1,2-Tetrachloroethane	0.300	0.2761		ug/Sample		92	53 - 120
1,1,2,2-Tetrachloroethane	0.300	0.1858		ug/Sample		62	30 - 120
Tetrachloroethene	0.300	0.3490		ug/Sample		116	80 - 133
Toluene	0.300	0.3312		ug/Sample		110	70 - 120
1,2,3-Trichlorobenzene	0.300	0.1741		ug/Sample		58	20 - 123
1,2,4-Trichlorobenzene	0.300	0.2302		ug/Sample		77	20 - 140
1,1,1-Trichloroethane	0.300	0.3397		ug/Sample		113	65 - 131
1,1,2-Trichloroethane	0.300	0.2205		ug/Sample		74	41 - 120
Trichloroethene	0.300	0.3346		ug/Sample		112	80 - 141
Trichlorofluoromethane	0.600	0.6891		ug/Sample		115	58 - 147
1,2,3-Trichloropropane	0.300	0.1691		ug/Sample		56	30 - 120
1,2,4-Trimethylbenzene	0.300	0.3345		ug/Sample		112	56 - 120
1,3,5-Trimethylbenzene	0.300	0.3493		ug/Sample		116	62 - 121
Vinyl chloride	0.600	0.6030		ug/Sample		101	64 - 142
o-Xylene	0.300	0.3074		ug/Sample		102	64 - 120
m,p-Xylene	0.300	0.3238		ug/Sample		108	74 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*82*		*50 - 127*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-57494/3
Matrix: Air
Analysis Batch: 57494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*88*		*50 - 122*
Dibromofluoromethane (Surr)	*97*		*50 - 134*
Toluene-d8 (Surr)	*105*		*57 - 134*

Lab Sample ID: LCSD 140-57494/4
Matrix: Air
Analysis Batch: 57494

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone			1.20	0.3784		ug/Sample		32	20 - 191	35	50
Benzene			0.300	0.2937		ug/Sample		98	68 - 128	6	22
Bromobenzene			0.300	0.2102		ug/Sample		70	53 - 120	24	38
Bromochloromethane			0.300	0.2388		ug/Sample		80	53 - 120	12	36
Bromodichloromethane			0.300	0.2341		ug/Sample		78	52 - 122	10	35
Bromoform			0.300	0.1670		ug/Sample		56	40 - 120	30	50
Bromomethane			0.600	0.7348		ug/Sample		122	40 - 187	1	35
2-Butanone (MEK)			1.20	0.4909		ug/Sample		41	20 - 150	20	50
n-Butylbenzene			0.300	0.3451		ug/Sample		115	57 - 140	5	31
sec-Butylbenzene			0.300	0.3129		ug/Sample		104	70 - 128	3	26
tert-Butylbenzene			0.300	0.2876		ug/Sample		96	67 - 122	6	26
Carbon disulfide			0.300	0.3185		ug/Sample		106	40 - 157	5	23
Carbon tetrachloride			0.300	0.3621		ug/Sample		121	67 - 135	5	23
Chlorobenzene			0.300	0.2523		ug/Sample		84	65 - 120	14	26
Chlorodibromomethane			0.300	0.1967		ug/Sample		66	50 - 120	21	43
Chloroethane			0.600	0.6937		ug/Sample		116	43 - 163	3	32
Chloroform			0.300	0.2618		ug/Sample		87	63 - 123	6	27
Chloromethane			0.600	0.4493		ug/Sample		75	44 - 176	4	50
2-Chlorotoluene			0.300	0.2574		ug/Sample		86	59 - 120	12	29
4-Chlorotoluene			0.300	0.2604		ug/Sample		87	57 - 120	12	30
1,2-Dibromo-3-Chloropropane			0.300	0.06573	*1	ug/Sample		22	10 - 120	54	50
1,2-Dibromoethane (EDB)			0.300	0.1637		ug/Sample		55	20 - 120	22	43
Dibromomethane			0.300	0.1890		ug/Sample		63	50 - 120	17	42
1,2-Dichlorobenzene			0.300	0.1793		ug/Sample		60	20 - 124	30	49
1,3-Dichlorobenzene			0.300	0.2320		ug/Sample		77	30 - 132	20	39
1,4-Dichlorobenzene			0.300	0.2168		ug/Sample		72	30 - 129	23	42
Dichlorodifluoromethane			0.600	0.5378		ug/Sample		90	25 - 146	2	42
1,1-Dichloroethane			0.300	0.2924		ug/Sample		97	66 - 128	4	24
1,2-Dichloroethane			0.300	0.2039		ug/Sample		68	36 - 124	14	37
1,1-Dichloroethene			0.300	0.3208		ug/Sample		107	77 - 131	5	22
cis-1,2-Dichloroethene			0.300	0.2834		ug/Sample		94	67 - 123	8	27
trans-1,2-Dichloroethene			0.300	0.3131		ug/Sample		104	78 - 128	5	23
1,2-Dichloropropane			0.300	0.2336		ug/Sample		78	55 - 124	11	31
1,3-Dichloropropane			0.300	0.1773		ug/Sample		59	50 - 120	18	38
2,2-Dichloropropane			0.300	0.3233		ug/Sample		108	59 - 141	3	25
1,1-Dichloropropene			0.300	0.3288		ug/Sample		110	70 - 136	3	21
cis-1,3-Dichloropropene			0.300	0.2205		ug/Sample		73	45 - 125	15	36
trans-1,3-Dichloropropene			0.300	0.2021		ug/Sample		67	40 - 120	18	40
Ethylbenzene			0.300	0.2938		ug/Sample		98	72 - 127	9	23

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 140-57494/4
Matrix: Air
Analysis Batch: 57494

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorobutadiene			0.300	0.2685		ug/Sample		90	52 - 167	22	50
2-Hexanone			1.20	0.4520		ug/Sample		38	30 - 151	27	50
Isopropylbenzene			0.300	0.3073		ug/Sample		102	40 - 152	8	28
4-Isopropyltoluene			0.300	0.3304		ug/Sample		110	66 - 126	5	28
Methylene Chloride			0.300	0.2825		ug/Sample		94	60 - 134	30	41
4-Methyl-2-pentanone (MIBK)			1.20	0.5370		ug/Sample		45	30 - 175	20	50
N-Propylbenzene			0.300	0.3041		ug/Sample		101	69 - 123	3	25
Styrene			0.300	0.2351		ug/Sample		78	57 - 120	20	39
1,1,1,2-Tetrachloroethane			0.300	0.2258		ug/Sample		75	53 - 120	20	35
1,1,2,2-Tetrachloroethane			0.300	0.1252		ug/Sample		42	30 - 120	39	50
Tetrachloroethene			0.300	0.3326		ug/Sample		111	80 - 133	5	24
Toluene			0.300	0.2929		ug/Sample		98	70 - 120	12	22
1,2,3-Trichlorobenzene			0.300	0.08765	*1	ug/Sample		29	20 - 123	66	50
1,2,4-Trichlorobenzene			0.300	0.1400		ug/Sample		47	20 - 140	49	50
1,1,1-Trichloroethane			0.300	0.3273		ug/Sample		109	65 - 131	4	23
1,1,2-Trichloroethane			0.300	0.1845		ug/Sample		61	41 - 120	18	38
Trichloroethene			0.300	0.3278		ug/Sample		109	80 - 141	2	32
Trichlorofluoromethane			0.600	0.6605		ug/Sample		110	58 - 147	4	26
1,2,3-Trichloropropane			0.300	0.1296		ug/Sample		43	30 - 120	26	50
1,2,4-Trimethylbenzene			0.300	0.2975		ug/Sample		99	56 - 120	12	35
1,3,5-Trimethylbenzene			0.300	0.3293		ug/Sample		110	62 - 121	6	30
Vinyl chloride			0.600	0.5805		ug/Sample		97	64 - 142	4	33
o-Xylene			0.300	0.2620		ug/Sample		87	64 - 120	16	37
m,p-Xylene			0.300	0.2926		ug/Sample		98	74 - 126	10	38

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*78*		*50 - 127*
4-Bromofluorobenzene (Surr)	*81*		*50 - 122*
Dibromofluoromethane (Surr)	*98*		*50 - 134*
Toluene-d8 (Surr)	*106*		*57 - 134*

GC/MS VOA

Prep Batch: 56760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-25698-7	M0031 RUN 1 CONDENSATE	Total/NA	Air	0031/5030B	
140-25698-16	M0031 RUN 2 CONDENSATE	Total/NA	Air	0031/5030B	
140-25698-25	M0031 RUN 3 CONDENSATE	Total/NA	Air	0031/5030B	
MB 140-56760/1-A	Method Blank	Total/NA	Air	0031/5030B	

Analysis Batch: 56885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-25698-7	M0031 RUN 1 CONDENSATE	Total/NA	Air	8260B	56760
140-25698-16	M0031 RUN 2 CONDENSATE	Total/NA	Air	8260B	56760
140-25698-25	M0031 RUN 3 CONDENSATE	Total/NA	Air	8260B	56760
MB 140-56760/1-A	Method Blank	Total/NA	Air	8260B	56760
LCS 140-56885/3	Lab Control Sample	Total/NA	Air	8260B	
LCSD 140-56885/4	Lab Control Sample Dup	Total/NA	Air	8260B	

Analysis Batch: 57159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-25698-1	M0031 RUN 1-1 TRAP A/B	Total/NA	Air	8260B	
140-25698-2	M0031 RUN 1-1 TRAP C	Total/NA	Air	8260B	
140-25698-3	M0031 RUN 1-2 TRAP A/B	Total/NA	Air	8260B	
140-25698-4	M0031 RUN 1-2 TRAP C	Total/NA	Air	8260B	
140-25698-5	M0031 RUN 1-3 TRAP A/B	Total/NA	Air	8260B	
140-25698-6	M0031 RUN 1-3 TRAP C	Total/NA	Air	8260B	
140-25698-8	M0031 RUN 1 FIELD BLANK TRAP A/8	Total/NA	Air	8260B	
140-25698-9	M0031 RUN 1 FIELD BLANK TRAP C	Total/NA	Air	8260B	
140-25698-17	M0031 RUN 2 FIELD BLANK TRAP A/B	Total/NA	Air	8260B	
140-25698-18	M0031 RUN 2 FIELD BLANK TRAP C	Total/NA	Air	8260B	
140-25698-26	M0031 RUN 3 FIELD BLANK TRAP A/B	Total/NA	Air	8260B	
140-25698-27	M0031 RUN 3 FIELD BLANK TRAP C	Total/NA	Air	8260B	
140-25698-28	M0031 RUN TRIP BLANK TRAP A/B	Total/NA	Air	8260B	
140-25698-29	M0031 RUN TRIP BLANK TRAP C	Total/NA	Air	8260B	
140-25698-31	C-2492 MEDIA CHECK TENAX	Total/NA	Air	8260B	
MB 140-57159/5	Method Blank	Total/NA	Air	8260B	
LCS 140-57159/3	Lab Control Sample	Total/NA	Air	8260B	
LCSD 140-57159/4	Lab Control Sample Dup	Total/NA	Air	8260B	

Analysis Batch: 57160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-25698-10	M0031 RUN 2-1 TRAP A/B	Total/NA	Air	8260B	
140-25698-11	M0031 RUN 2-1 TRAP C	Total/NA	Air	8260B	
140-25698-12	M0031 RUN 2-2 TRAP A/B	Total/NA	Air	8260B	
140-25698-13	M0031 RUN 2-2 TRAP C	Total/NA	Air	8260B	
140-25698-14	M0031 RUN 2-3 TRAP A/B	Total/NA	Air	8260B	
140-25698-15	M0031 RUN 2-3 TRAP C	Total/NA	Air	8260B	
140-25698-19	M0031 RUN 3-1 TRAP A/B	Total/NA	Air	8260B	
140-25698-20	M0031 RUN 3-1 TRAP C	Total/NA	Air	8260B	
140-25698-21	M0031 RUN 3-2 TRAP A/B	Total/NA	Air	8260B	
140-25698-22	M0031 RUN 3-2 TRAP C	Total/NA	Air	8260B	
140-25698-23	M0031 RUN 3-3 TRAP A/B	Total/NA	Air	8260B	
140-25698-24	M0031 RUN 3-3 TRAP C	Total/NA	Air	8260B	
140-25698-30	AUDIT SAMPLE	Total/NA	Air	8260B	
140-25698-32	C-2493 MEDIA CHECK TENAX/CHARCOAL	Total/NA	Air	8260B	

GC/MS VOA (Continued)

Analysis Batch: 57160 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 140-57160/6	Method Blank	Total/NA	Air	8260B	
LCS 140-57160/3	Lab Control Sample	Total/NA	Air	8260B	
LCSD 140-57160/4	Lab Control Sample Dup	Total/NA	Air	8260B	

Analysis Batch: 57494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-25698-30 - RA	AUDIT SAMPLE	Total/NA	Air	8260B	
MB 140-57494/6	Method Blank	Total/NA	Air	8260B	
LCS 140-57494/3	Lab Control Sample	Total/NA	Air	8260B	
LCSD 140-57494/4	Lab Control Sample Dup	Total/NA	Air	8260B	

Client Sample ID: M0031 RUN 1-1 TRAP A/B

Lab Sample ID: 140-25698-1
Matrix: Air
Date Collected: 12/08/21 10:17
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 18:07	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1-1 TRAP C

Lab Sample ID: 140-25698-2
Matrix: Air
Date Collected: 12/08/21 10:17
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 18:32	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1-2 TRAP A/B

Lab Sample ID: 140-25698-3
Matrix: Air
Date Collected: 12/08/21 11:10
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 17:19	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1-2 TRAP C

Lab Sample ID: 140-25698-4
Matrix: Air
Date Collected: 12/08/21 11:10
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 17:43	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1-3 TRAP A/B

Lab Sample ID: 140-25698-5
Matrix: Air
Date Collected: 12/08/21 12:09
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 16:29	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1-3 TRAP C

Lab Sample ID: 140-25698-6
Matrix: Air
Date Collected: 12/08/21 12:09
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 16:54	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1 CONDENSATE

Lab Sample ID: 140-25698-7
Date Collected: 12/08/21 12:14
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	0031/5030B			1 Sample	41.6 mL	56760	12/10/21 13:59	JJC	TAL KNX
Total/NA	Analysis	8260B		1	25 mL	25 mL	56885	12/10/21 16:01	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1 FIELD BLANK TRAP A/8

Lab Sample ID: 140-25698-8
Date Collected: 12/07/21 09:20
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 15:41	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 1 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-9
Date Collected: 12/07/21 09:20
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 16:05	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2-1 TRAP A/B

Lab Sample ID: 140-25698-10
Date Collected: 12/08/21 13:25
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 14:08	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2-1 TRAP C

Lab Sample ID: 140-25698-11
Date Collected: 12/08/21 13:25
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 14:33	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2-2 TRAP A/B

Lab Sample ID: 140-25698-12
Date Collected: 12/08/21 14:17
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 18:11	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2-2 TRAP C

Lab Sample ID: 140-25698-13
Date Collected: 12/08/21 14:17
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 18:35	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2-3 TRAP A/B

Lab Sample ID: 140-25698-14
Date Collected: 12/08/21 15:14
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 17:22	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2-3 TRAP C

Lab Sample ID: 140-25698-15
Date Collected: 12/08/21 15:14
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 17:47	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2 CONDENSATE

Lab Sample ID: 140-25698-16
Date Collected: 12/08/21 15:20
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	0031/5030B			1 Sample	42 mL	56760	12/10/21 13:59	JJC	TAL KNX
Total/NA	Analysis	8260B		1	25 mL	25 mL	56885	12/10/21 16:29	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2 FIELD BLANK TRAP A/B

Lab Sample ID: 140-25698-17
Date Collected: 12/07/21 12:38
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 14:52	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 2 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-18
Date Collected: 12/07/21 12:38
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 15:16	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3-1 TRAP A/B

Lab Sample ID: 140-25698-19
Matrix: Air
Date Collected: 12/08/21 16:27
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 16:34	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3-1 TRAP C

Lab Sample ID: 140-25698-20
Matrix: Air
Date Collected: 12/08/21 16:27
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 16:58	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3-2 TRAP A/B

Lab Sample ID: 140-25698-21
Matrix: Air
Date Collected: 12/08/21 17:15
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 15:45	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3-2 TRAP C

Lab Sample ID: 140-25698-22
Matrix: Air
Date Collected: 12/08/21 17:15
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 16:10	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3-3 TRAP A/B

Lab Sample ID: 140-25698-23
Matrix: Air
Date Collected: 12/08/21 18:06
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 14:57	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3-3 TRAP C

Lab Sample ID: 140-25698-24
Matrix: Air
Date Collected: 12/08/21 18:06
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 15:21	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3 CONDENSATE

Lab Sample ID: 140-25698-25
Date Collected: 12/08/21 18:10
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	0031/5030B			1 Sample	41.4 mL	56760	12/10/21 13:59	JJC	TAL KNX
Total/NA	Analysis	8260B		1	25 mL	25 mL	56885	12/10/21 16:57	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3 FIELD BLANK TRAP A/B

Lab Sample ID: 140-25698-26
Date Collected: 12/08/21 15:30
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 14:03	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN 3 FIELD BLANK TRAP C

Lab Sample ID: 140-25698-27
Date Collected: 12/08/21 15:30
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 14:27	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN TRIP BLANK TRAP A/B

Lab Sample ID: 140-25698-28
Date Collected: 12/08/21 16:37
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 13:14	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: M0031 RUN TRIP BLANK TRAP C

Lab Sample ID: 140-25698-29
Date Collected: 12/08/21 16:37
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 13:39	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: AUDIT SAMPLE

Lab Sample ID: 140-25698-30
Date Collected: 12/07/21 00:00
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 13:20	AFB	TAL KNX
	Instrument ID: MX									
Total/NA	Analysis	8260B	RA	1	1 Sample	25 mL	57494	12/29/21 13:14	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: C-2492 MEDIA CHECK TENAX

Lab Sample ID: 140-25698-31

Date Collected: 12/07/21 00:00
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 12:50	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: C-2493 MEDIA CHECK TENAX/CHARCOAL

Lab Sample ID: 140-25698-32

Date Collected: 12/07/21 00:00
Matrix: Air
Date Received: 12/10/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 13:44	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-56760/1-A

Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	0031/5030B			1 Sample	42.6 mL	56760	12/07/21 10:50	JJC	TAL KNX
Total/NA	Analysis	8260B		1	25 mL	25 mL	56885	12/10/21 10:57	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-57159/5

Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 12:25	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-57160/6

Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 11:58	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-57494/6

Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57494	12/29/21 11:28	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-56885/3
Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	25 mL	25 mL	56885	12/10/21 09:06	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-57159/3
Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 11:37	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-57160/3
Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 10:41	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-57494/3
Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57494	12/29/21 10:12	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample Dup
Lab Sample ID: LCSD 140-56885/4
Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	25 mL	25 mL	56885	12/10/21 09:34	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample Dup
Lab Sample ID: LCSD 140-57159/4
Date Collected: N/A
Matrix: Air
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57159	12/18/21 12:01	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample Dup — **Lab Sample ID: LCSD 140-57160/4**
Date Collected: N/A — **Matrix: Air**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57160	12/20/21 11:05	AFB	TAL KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample Dup — **Lab Sample ID: LCSD 140-57494/4**
Date Collected: N/A — **Matrix: Air**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	57494	12/29/21 10:37	AFB	TAL KNX
	Instrument ID: MX									

Laboratory References:
TAL KNX = Eurofins TestAmerica, Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: Montrose Air Quality Services LLC
Job ID: 140-25698-1
Project/Site: Covanta Marion, Inc. - M0031

Laboratory: Eurofins TestAmerica, Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-22
ANAB	Dept. of Energy	L2311.01	02-13-22
ANAB	ISO/IEC 17025	L2311	02-13-22
Arkansas DEQ	State	88-0688	06-17-22
California	State	2423	06-30-22
Colorado	State	TN00009	02-28-22
Connecticut	State	PH-0223	02-28-22
Florida	NELAP	E87177	06-30-22
Georgia (DW)	State	906	12-11-22
Hawaii	State	NA	12-11-22
Kansas	NELAP	E-10349	10-31-22
Kentucky (DW)	State	90101	12-31-21
Louisiana	NELAP	83979	06-30-22
Louisiana (DW)	State	LA019	12-31-21
Maryland	State	277	03-31-22
Michigan	State	9933	12-11-22
Nevada	State	TN00009	07-31-22
New Hampshire	NELAP	299919	01-17-22
New Jersey	NELAP	TN001	06-30-22
New York	NELAP	10781	03-31-22
North Carolina (DW)	State	21705	07-31-22
North Carolina (WW/SW)	State	64	12-31-21
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-22
Oregon	NELAP	TNI0189	12-31-21
Pennsylvania	NELAP	68-00576	12-31-21
Tennessee	State	02014	12-11-22
Texas	NELAP	T104704380-18-12	08-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-19-00236	08-20-22
Utah	NELAP	TN00009	07-31-22
Virginia	NELAP	460176	09-14-22
Washington	State	C593	01-19-22
West Virginia (DW)	State	9955C	01-02-22
West Virginia DEP	State	345	04-30-22
Wisconsin	State	998044300	08-31-22

Method Summary

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL KNX
0031/5030B	Purge and Trap	SW846	TAL KNX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL KNX = Eurofins TestAmerica, Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: Montrose Air Quality Services LLC
Project/Site: Covanta Marion, Inc. - M0031

Job ID: 140-25698-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-25698-1	M0031 RUN 1-1 TRAP A/B	Air	12/08/21 10:17	12/10/21 10:15
140-25698-2	M0031 RUN 1-1 TRAP C	Air	12/08/21 10:17	12/10/21 10:15
140-25698-3	M0031 RUN 1-2 TRAP A/B	Air	12/08/21 11:10	12/10/21 10:15
140-25698-4	M0031 RUN 1-2 TRAP C	Air	12/08/21 11:10	12/10/21 10:15
140-25698-5	M0031 RUN 1-3 TRAP A/B	Air	12/08/21 12:09	12/10/21 10:15
140-25698-6	M0031 RUN 1-3 TRAP C	Air	12/08/21 12:09	12/10/21 10:15
140-25698-7	M0031 RUN 1 CONDENSATE	Air	12/08/21 12:14	12/10/21 10:15
140-25698-8	M0031 RUN 1 FIELD BLANK TRAP A/8	Air	12/07/21 09:20	12/10/21 10:15
140-25698-9	M0031 RUN 1 FIELD BLANK TRAP C	Air	12/07/21 09:20	12/10/21 10:15
140-25698-10	M0031 RUN 2-1 TRAP A/B	Air	12/08/21 13:25	12/10/21 10:15
140-25698-11	M0031 RUN 2-1 TRAP C	Air	12/08/21 13:25	12/10/21 10:15
140-25698-12	M0031 RUN 2-2 TRAP A/B	Air	12/08/21 14:17	12/10/21 10:15
140-25698-13	M0031 RUN 2-2 TRAP C	Air	12/08/21 14:17	12/10/21 10:15
140-25698-14	M0031 RUN 2-3 TRAP A/B	Air	12/08/21 15:14	12/10/21 10:15
140-25698-15	M0031 RUN 2-3 TRAP C	Air	12/08/21 15:14	12/10/21 10:15
140-25698-16	M0031 RUN 2 CONDENSATE	Air	12/08/21 15:20	12/10/21 10:15
140-25698-17	M0031 RUN 2 FIELD BLANK TRAP A/B	Air	12/07/21 12:38	12/10/21 10:15
140-25698-18	M0031 RUN 2 FIELD BLANK TRAP C	Air	12/07/21 12:38	12/10/21 10:15
140-25698-19	M0031 RUN 3-1 TRAP A/B	Air	12/08/21 16:27	12/10/21 10:15
140-25698-20	M0031 RUN 3-1 TRAP C	Air	12/08/21 16:27	12/10/21 10:15
140-25698-21	M0031 RUN 3-2 TRAP A/B	Air	12/08/21 17:15	12/10/21 10:15
140-25698-22	M0031 RUN 3-2 TRAP C	Air	12/08/21 17:15	12/10/21 10:15
140-25698-23	M0031 RUN 3-3 TRAP A/B	Air	12/08/21 18:06	12/10/21 10:15
140-25698-24	M0031 RUN 3-3 TRAP C	Air	12/08/21 18:06	12/10/21 10:15
140-25698-25	M0031 RUN 3 CONDENSATE	Air	12/08/21 18:10	12/10/21 10:15
140-25698-26	M0031 RUN 3 FIELD BLANK TRAP A/B	Air	12/08/21 15:30	12/10/21 10:15
140-25698-27	M0031 RUN 3 FIELD BLANK TRAP C	Air	12/08/21 15:30	12/10/21 10:15
140-25698-28	M0031 RUN TRIP BLANK TRAP A/B	Air	12/08/21 16:37	12/10/21 10:15
140-25698-29	M0031 RUN TRIP BLANK TRAP C	Air	12/08/21 16:37	12/10/21 10:15
140-25698-30	AUDIT SAMPLE	Air	12/07/21 00:00	12/10/21 10:15
140-25698-31	C-2492 MEDIA CHECK TENAX	Air	12/07/21 00:00	12/10/21 10:15
140-25698-32	C-2493 MEDIA CHECK TENAX/CHARCOAL	Air	12/07/21 00:00	12/10/21 10:15

MONTROSE AIR QUALITY SERVICES

CHAIN OF CUSTODY

Portland Location
13585 NE Whitaker Way
Portland, OR 97230
(503) 255-5050

Lab info:
Eurofins Test America
Knoxsvill, TN

1/4/2022

Client / Project:	**Project / Sample Location:**	**Test / Analytical Method:**
Covanta Marion, Inc	Stack ~~Scrubber~~ Unit 2 Chronic	EPA 0031 VOST
Project No.:	**Purchase Order No:**	**Special Analysis / Reporting Instructions:**
PROJ-010935		
Send Analytical Report To:	**Sampler or PM Signature:**	
Portland QA/QC: : PortlandQA-QC@montrose-env.com pbecker@montrose-env.com / echetty@montrose		

Run / Sample No.	Date	Time	Containers	Sample Fraction	Reagent	Lab / Sample ID No.
1.1.A	12.8.21	10:17	1	Run 1-1 Trap A A028675	Tanex	
1.1.B	12.8.21	10:17	1	Run 1-1 Trap B A027784	Tanex	
1.1.C	12.8.21	10:17	1	Run 1-1 Trap C A065420	Tanex/ Charcoal	
1.2.A	12.8.21	11:10	1	Run 1-2 Trap A A068040	Tanex	
1.2.B	12.8.21	11:10	1	Run 1-2 Trap B A062607	Tanex	
1.2.C	12.8.21	11:10	1	Run 1-2 Trap C A066656	Tanex/Charcoal	
1.3.A	12.8.21	12:09	1	Run 1-3 Trap A A037955	Tanex	
1.3.B	12.8.21	12:09	1	Run 1-3 Trap B A027462	Tanex	
1.3.C	12.8.21	12:09	1	Run 1-3 Trap C A066476	Tanex/Charcoal	
1-CON-1	12.8.21	12:14	1	Run 1 Condensate	Dionized Water	
FB.A	12.7.21	9:20	1	Run 1 Field Blank Trap A A071959	Tanex	
FB.B	12.7.21	9:20	1	Run 1 Field Blank Trap B A027750	Tanex	
FB.C	12.7.21	9:20	1	Run 1 Field Blank Trap C	Tanex Charcoal	
Total Containers			~~14~~ 13			

140-25698 Chain of Custody

Relinquished by	Date	Time	Received by	Date	Time	Temp.
Peter Becker	12.9.21	16:00	FEDEX	12-10-21	10:15	
Relinquished by	Date	Time	Received by	Date	Time	Temp.
Relinquished by	Date	Time	Received by	Date	Time	Temp.

MONTROSE AIR QUALITY SERVICES

CHAIN OF CUSTODY

Portland Location
13585 NE Whitaker Way
Portland, OR 97230
(503) 255-5050

NO CUSTODY SEALS
RECEIVED AT RT 7.4, 6.8/CT 7.3, 6.7°C
DAD 12/10/21
2 COOLERS FEDEX 771545102613 mPD

Lab info:
Eurofins Test America
Knoxsvill, TN

Client / Project: Covanta Marion, Inc	**Project / Sample Location:** Stack 2 ~~Acute~~ Chronic	**Test / Analytical Method:** EPA 0031 VOST
Project No.: PROJ-010935	**Purchase Order No:**	**Special Analysis / Reporting Instructions:** See Attached Compound List
Send Analytical Report To: Portland QA/QC: : PortlandQA-QC@montrose-env.com pbecker@montrose-env.com / echetty@montrose	**Sampler or PM Signature:**	

Run / Sample No.	Date	Time	Containers	Sample Fraction	Reagent	Lab / Sample ID No.
2.1.A	12/8/21	13:25	1	Run 2-1 Trap A A064619	Tanex	
2.1.B	12/8/21	13:25	1	Run 2-1 Trap B A065234	Tanex	
2.1.C	12/8/21	13:25	1	Run 2-1 Trap C A062705	Tanex/ Charcoal	
2.2.A	12/8/21	14:17	1	Run 2-2 Trap A A065191	Tanex	
2.2.B	12.8.21	14:17	1	Run 2-2 Trap B ~~A065207~~ A071789	Tanex	
2.2.C	12.8.21	14:17	1	Run 2-2 Trap C A056041	Tanex/Charcoal	
2.3.A	12.8.21	15:14	1	Run 2-3 Trap A A061252	Tanex	
2.3.B	12.8.21	15:14	1	Run 2-3 Trap B A065200	Tanex	
2.3.C	12.8.21	15:14	1	Run 2-3 Trap C A065614	Tanex/Charcoal	
2-CON	12.8.21	15:20	1	Run 2 Condensate	Dionized Water	
FB-2-.A	12.7.21	12:38	1	Run 2 Field Blank Trap A A038187	Tanex	
FB-2.B	12.7.21	12:38	1	Run 2 Field Blank Trap B A064617	Tanex	
FB2-.C	12.7.21	12:38	1	Run 2 Field Blank Trap C A066706	Tanex Charcoal	
Audit Sample	12.7.21	13:00	1	VOC in Solution (ERA)	Solution	
Total Containers			~~24~~ 13			

Relinquished by	Date	Time	Received by	Date	Time	Temp.
Pete Becker	12.9.21	16:00	[signature] FEDEX	12.10.21	10:15	
Relinquished by	Date	Time	Received by	Date	Time	Temp.
Relinquished by	Date	Time	Received by	Date	Time	Temp.

MONTROSE AIR QUALITY SERVICES

CHAIN OF CUSTODY

Portland Location
13585 NE Whitaker Way
Portland, OR 97230
(503) 255-5050

Lab info:
Eurofins Test America
Knoxsvill, TN

1/4/2022

Client / Project:	**Project / Sample Location:**	**Test / Analytical Method:**
Covanta Marion, Inc	Stack 2 ~~Inlet~~ Chronic	EPA 0031 VOST
Project No.:	**Purchase Order No:**	**Special Analysis / Reporting Instructions:**
PROJ-010935		
Send Analytical Report To:	**Sampler or PM Signature:**	
Portland QA/QC: : PortlandQA-QC@montrose-env.com pbecker@montrose-env.com / echetty@montrose		

Run / Sample No.	Date	Time	Containers	Sample Fraction	Reagent	Lab / Sample ID No.
3.1.A	12.8.21	16:27	1	Run 3-1 Trap A A062079	Tanex	
3.1.B	12.8.21	16:27	1	Run 3-1 Trap B A067325	Tanex	
3.1.C	12.8.21	16:27	1	Run 3-1 Trap C A065471	Tanex/ Charcoal	
3.2.A	12.8.21	~~16~~ 17:15	1	Run 3-2 Trap A A038492	Tanex	
3.2.B	12.8.21	17:15	1	Run 3-2 Trap B A071917	Tanex	
3.2.C	12.8.21	17:15	1	Run 3-2 Trap C A065864	Tanex/Charcoal	
3.3.A	12.8.21	18:06	1	Run 3-3 Trap A A065208	Tanex	
3.3.B	12.8.21	18:06	1	Run 3-3 Trap B A066813	Tanex	
3.3.C	12.8.21	18:06	1	Run 3-3 Trap C A065406	Tanex/Charcoal	
3-CON	12.8.21	18:10	1	Run 3 Condensate	Dionized Water	
FB-3-.A	12.8.21	15:30	1	Run 3 Field Blank Trap A A028001	Tanex	
FB-3.B	12.8.21	15:30	1	Run 3 Field Blank Trap B A068042	Tanex	
FB-3.C	12.8.21	15:30	1	Run 3 Field Blank Trap C A062700	Tanex Charcoal	
Trip A	12.8.21	16:37	1	Trip Blank A A027432	Tanex	
Trip B	12.8.21	16:37	1	Trip Blank B A028003	Tanex	
Trip C	12.8.21	16:37	1	Trip Blank C A062107	Tanex/Charcoal	
Total Containers			16			

Relinquished by	Date	Time	Received by	Date	Time	Temp.
Peter Becker	12.9.21	16:00	[illegible] EFT KNX	12.10.21	10:15	
Relinquished by	Date	Time	Received by	Date	Time	Temp.
Relinquished by	Date	Time	Received by	Date	Time	Temp.

MAQS Chain of Custody Macro-R4 (version 1)

Loc: 140
25698

1/4/2022

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	✓			☐ Containers, Broken
2. Were ambient air containers received intact?			✓	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?			✓	☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : 5(7) Correction factor: -0.1°C	✓			☐ Cooler Out of Temp, Client Contacted, Proceed/Cancel ☐ Cooler Out of Temp, Same Day Receipt
5. Were all of the sample containers received intact?	✓			☐ Containers, Broken
6. Were samples received in appropriate containers?	✓			☐ Containers, Improper; Client Contacted; Proceed/Cancel
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ COC & Samples Do Not Match ☐ COC Incorrect/Incomplete ☐ COC Not Received
8. Were all of the samples listed on the COC received?	✓			☐ Sample Received, Not on COC ☐ Sample on COC, Not Received
9. Is the date/time of sample collection noted?	✓			☐ COC; No Date/Time; Client Contacted
10. Was the sampler identified on the COC?	✓			☐ Sampler Not Listed on COC
11. Is the client and project name/# identified?	✓			☐ COC Incorrect/Incomplete
12. Are tests/parameters listed for each sample?	✓			☐ COC No tests on COC
13. Is the matrix of the samples noted?	✓			☐ COC Incorrect/Incomplete
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ COC Incorrect/Incomplete
15. Were samples received within holding time?	✓			☐ Holding Time - Receipt
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ pH Adjusted, pH Included (See box 16A) ☐ Incorrect Preservative
17. Were VOA samples received without headspace?	✓			☐ Headspace (VOA only)
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ Residual Chlorine
19. For 1613B water samples is pH<9?			✓	☐ If no, notify lab to adjust
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info

Comments/Actions Taken

Labeling Verified by: **Date:**

pH test strip lot number:

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: _____ PM Instructions: _____

Sample Receiving Associate: _____ Date: 12.10.21

QA026R32.doc, 062719

APPENDIX D
QUALITY ASSURANCE/QUALITY CONTROL

Appendix D.1
Units and Abbreviations

MONTROSE
AIR QUALITY SERVICES

UNITS AND ABBREVIATIONS

@ X% O_2	corrected to X% oxygen (corrected for dilution air)
|CC|	absolute value of the confidence coefficient
|d|	absolute value of the mean differences
ºC	degrees Celsius (centrigade)
ºF	degrees Fahrenheit
ºR	degrees Rankine
" H_2O	inches of water column
13.6	specific gravity of mercury
ΔH	pressure drop across orifice meter, inches H_2O
ΔP	velocity head of stack gas, inches H_2O
θ	total sampling time, minutes
µg	microgram
ρ_a	density of acetone, mg/ml
ρ_w	density of water, 0.9982 g/ml or 0.002201 lb/ml
acfm	actual cubic feet of gas per minute at stack conditions
A_n	cross-sectional area of nozzle, ft^2
A_s	cross-sectional area of stack, square feet (ft^2)
Btu	British thermal unit
B_{ws}	proportion by volume of water vapor in gas stream
C_a	particulate matter concentration in stack gas, gr/acf
C_{Avg}	average unadjusted gas concentration, ppmv
C_{Dir}	measured concentration of calibration gas, ppmv
cf or ft^3	cubic feet
cfm	cubic feet per minute
C_{Gas}	average gas concentration adjusted for bias, ppmv
C_M	average of initial and final system bias check responses from upscale calibration gas, ppmv
cm or m^3	cubic meters
C_{MA}	actual concentration of the upscale calibration gas, ppmv
C_O	average of initial and final system bias check responses from low-level calibration gas, ppmv
C_p	pitot tube coefficient
C_s	particulate matter concentration in stack gas, gr/dscf
CS	calibration span, % or ppmv
C_S	measured concentration of calibration gas, ppmv
C_V	manufactured certified concentration of calibration gas, ppmv
D	drift assessment, % of span
dcf	dry cubic feet
dcm	dry cubic meters
D_n	diameter of nozzle, inches
D_s	diameter of stack, inches
dscf	dry standard cubic feet
dscfm	dry standard cubic feet per minute
dscm	dry standard cubic meters
F_d	F-factor, dscf/MMBtu of heat input
fpm	feet per minute
fps	feet per second
ft	feet
ft^2	square feet
g	gram
gal	gallons
gr	grains (7000 grains per pound)

UNITS AND ABBREVIATIONS

gr/dscf	grains per dry standard cubic feet
hr	hour
I	percent of isokinetic sampling
in	inch
k	kilo or thousand (metric units, multiply by 10^3)
K	kelvin (temperature)
K_3	conversion factor 0.0154 gr/mg
K_4	conversion factor 0.002669 ((in. Hg)(ft^3))/((ml)(°R))
kg	kilogram
K_p	pitot tube constant (85.49 ft/sec)
kwscfh	thousand wet standard cubic feet per hour
l	liters
lb/hr	pounds per hour
lb/MMBtu	pounds per million Btu
lpm	liters per minute
m	meter or milli
M	thousand (English units) or mega (million, metric units)
m^3	cubic meters
m_a	mass of residue of acetone after evaporation, mg
M_d	molecular weight of stack gas; dry basis, lb/lb-mole
meq	milliequivalent
mg	milligram
Mg	megagram (10^6 grams)
min	minute
ml or mL	milliliter
mm	millimeter
MM	million (English units)
MMBtu/hr	million Btu per hour
m_n	total amount of particulate matter collected, mg
mol	mole
mol. wt. or MW	molecular weight
M_s	molecular weight of stack gas; wet basis, lb/lb-mole
MW	molecular weight or megawatt
n	number of data points
ng	nanogram
nm	nanometer
P_{bar}	barometric pressure, inches Hg
pg	picogram
P_g	stack static pressure, inches H_2O
P_m	barometric pressure of dry gas meter, inches Hg
ppb	parts per billion
ppbv	parts per billion, by volume
ppbvd	parts per billion by volume, dry basis
ppm	parts per million
ppmv	parts per million, by volume
ppmvd	parts per million by volume, dry basis
P_s	absolute stack gas pressure, inches Hg
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch gauge
P_{std}	standard absolute pressure, 29.92 inches Hg
Q_a	volumetric flow rate, actual conditions, acfm

MONTROSE
AIR QUALITY SERVICES

UNITS AND ABBREVIATIONS

Q_s	volumetric flow rate, standard conditions, scfm
Q_{std}	volumetric flow rate, dry standard conditions, dscfm
R	ideal gas constant 21.85 ((in. Hg) ($ft^{3)}$)/((°R) (lbmole))
SB_{final}	post-run system bias check, % of span
SB_i	pre-run system bias check, % of span
scf	standard cubic feet
scfh	standard cubic feet per hour
scfm	standard cubic feet per minute
scm	standard cubic meters
scmh	standard cubic meters per hour
sec	second
sf, sq. ft., or ft^2	square feet
std	standard
t	metric ton (1000 kg)
$T_{0.975}$	t-value
T_a	absolute average ambient temperature, ºR (+460 for English)
T_m	absolute average dry gas meter temperature, ºR (+460 for English)
ton or t	ton = 2000 pounds
tph or tons/hr	tons per hour
tpy or tons/yr	tons per year
T_s	absolute average stack gas meter temperature, ºR (+460 for English)
T_{std}	absolute temperature at standard conditions
V	volt
V_a	volume of acetone blank, ml
V_{aw}	volume of acetone used in wash, ml
V_{lc}	total volume H_2O collected in impingers and silica gel, grams
V_m	volume of gas sampled through dry gas meter, ft^3
$V_{m(std)}$	volume of gas measured by the dry gas meter, corrected to standard conditions, dscf
V_{ma}	stack gas volume sampled, acf
V_n	volume collected at stack conditions through nozzle, acf
V_s	average stack gas velocity, feet per second
$V_{wc(std)}$	volume of water vapor condensed, corrected to standard conditions, scf
$V_{wi(std)}$	volume of water vapor in gas sampled from impingers, scf
$V_{wsg(std)}$	volume of water vapor in gas sampled from silica gel, scf
W	watt
W_a	weight of residue in acetone wash, mg
W_{imp}	total weight of impingers, grams
W_{sg}	total weight of silica gel, grams
Y	dry gas meter calibration factor, dimensionless

ACRONYMS

AAS	atomic absorption spectroscopy
ACDP	air contaminant discharge permit
ACE	analyzer calibration error, percent of span
AD	absolute difference
ADL	above detection limit
AETB	Air Emissions Testing Body
AS	applicable standard (emission limit)
ASTM	American Society For Testing And Materials
BACT	best achievable control technology
BDL	below detection limit
BHP	brake horsepower
BIF	boiler and industrial furnace
BLS	black liquor solids
CC	confidence coefficient
CD	calibration drift
CE	calibration error
CEM	continuous emissions monitor
CEMS	continuous emissions monitoring system
CERMS	continuous emissions rate monitoring system
CET	calibration error test
CFR	Code of Federal Regulations
CGA	cylinder gas audit
CHNOS	elemental analysis for determination of C, H, N, O, and S content in fuels
CNCG	concentrated non-condensable gas
CO	catalytic oxidizer
COC	chain of custody
COMS	continuous opacity monitoring system
CPM	condensible particulate matter
CPMS	continuous parameter monitoring system
CT	combustion turbine
CTM	conditional test method
CTO	catalytic thermal oxidizer
CVAAS	cold vapor atomic absorption spectroscopy
D_e	equivalent diameter
DE	destruction efficiency
Dioxins	polychlorinated dibenzo-p-dioxins (pcdd's)
DLL	detection level limited
DNCG	dilute non-condensable gas
ECD	electron capture detector
EIT	Engineer In Training
ELCD	electoconductivity detector (hall detector)
EMPC	estimated maximum possible concentration
EPA	US Environmental Protection Agency
EPRI	Electric Power Research Institute
ES	emission standard (applicable limit)
ESP	electrostatic precipitator
EU	emission unit
FCCU	fluid catalytic cracking unit
FGD	flue gas desulfurization
FI	flame ionization
FIA	flame ionization analyzer
FID	flame ionization detector
FPD	flame photometric detector
FPM	filterable particulate matter

ACRONYMS

FTIR	Fourier-transform infrared spectroscopy
FTPB	field train proof blank
FTRB	field train recovery blank
Furans	polychlorinated dibenzofurans (pcdf's)
GC	gas chromatography
GC/MS	gas chromatography/mass spectroscopy
GFAAS	graphite furnace atomic absorption spectroscopy
GFC	gas filter correlation
GHG	greenhouse gas
HAP	hazardous air pollutant
HC	hydrocarbons
HHV	higher heating value
HPLC	high performance liquid chromatography
HRGC/HRMS	high-resolution gas chromatography/high-resolution mass spectroscopy
HRSG	heat recovery steam generator
IC	ion chromatography
ICAP	inductively-coupled argon plasmography
ICPCR	ion chromatography with a post-column reactor
IR	infrared radiation
ISO	International Standards Organization
kW	kilowatts
LFG	landfill gas
LHV	lower heating value
LPG	liquified petroleum gas
MACT	maximum achievable control technology
MDI	methylene diphyenyl diisocyanate
MDL	method detection limit
MNOC	maximum normal operating conditions
MRL	method reporting limit
MS	mass spectrometry
NA	not applicable or not available
NCASI	National Council For Air And Steam Improvement
NCG	non-condensable gases
NDIR	non-dispersive infrared
NESHAP	National Emissions Standards For Hazardous Air Pollutants
NG	natural gas
NIOSH	National Institute For Occupational Safety And Health
NIST	National Institute Of Standards And Technology
NMC	non-methane cutter
NMOC	non-methane organic compounds
NMVOC	non-methane volatile organic compounds
NPD	nitrogen phosphorus detector
NSPS	New Source Performance Standards
OSHA	Occupational Safety And Health Administration
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl compounds
PCWP	plywood and composite wood products
PE	Professional Engineer
PFAS	per- and polyfluoroalkyl substances (PFAS)
PI	photoionization
PID	photoionization detector
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter

ACRONYMS

POM	polycyclic organic matter
PS	performance specification
PSD	particle size distribution
PSEL	plant site emission limits
PST	performance specification test
PTE	permanent total enclosure
PTM	performance test method
QA/QC	quality assurance and quality control
QI	Qualified Individual
QSTI	Qualified Source Testing Individual
RA	relative accuracy
RAA	relative accuracy audit
RACT	reasonably available control technology
RATA	relative accuracy test audit
RCTO	rotary concentrator thermal oxidizer
RICE	stationary reciprocating internal combustion engine
RM	reference method
RTO	regenerative thermal oxidizer
SAM	sulfuric acid mist
SCD	sulfur chemiluminescent detector
SCR	selective catalytic reduction system
SD	standard deviation
Semi-VOST	semivolatile organic compounds sample train
SRM	standard reference material
TAP	toxic air pollutant
TBD	to be determined
TCA	thermal conductivity analyzer
TCD	thermal conductivity detector
TGNENMOC	total gaseous non-ethane non-methane organic compounds
TGNMOC	total gaseous non-methane organic compounds
TGOC	total gaseous organic compounds
THC	total hydrocarbons
TIC	tentatively identified compound
TO	thermal oxidizer
TO	toxic organic (as in EPA Method TO-15)
TPM	total particulate matter
TSP	total suspended particulate matter
TTE	temporary total enclosure
ULSD	ultra-low sulfur diesel
UV	ultraviolet radiation range
VE	visible emissions
VOC	volatile organic compounds
VOST	volatile organic sample train
WC	water column
WWTP	waste water treatment plant

CHEMICAL NOMENCLATURE

Ag	silver
As	arsenic
Ba	barium
Be	beryllium
C	carbon
Cd	cadmium
CdS	cadmium sulfide
CH_2O	formaldehyde
CH_3CHO	acetaldehyde
CH_3OH	methanol
CH_4	methane
C_2H_4O	ethylene oxide
C_2H_6	ethane
C_3H_4O	acrolein
C_3H_6O	propionaldehyde
C_3H_8	propane
C_6H_5OH	phenol
Cl_2	chlorine
ClO_2	chlorine dioxide
CO	carbon monoxide
Co	cobalt
CO_2	carbon dioxide
Cr	chromium
Cu	copper
EtO	ethylene oxide
EtOH	ethyl alcohol (ethanol)
H_2	hydrogen
H_2O	water
H_2O_2	hydrogen peroxide
H_2S	hydrogen sulfide
H_2SO_4	sulfuric acid
HCl	hydrogen chloride
Hg	mercury
IPA	isopropyl alcohol
MDI	methylene diphyenyl diisocyanate
MEK	methyl ethyl ketone
MeOH	methanol
Mn	manganese
N_2	nitrogen
NH_3	ammonia
Ni	nickel
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
O_2	oxygen
P	phosphorus
Pb	lead
PCDD	polychlorinated dibenzo-p-dioxins
PCDF	polychlorinated dibenzofurans
Sb	antimony
Se	selenium
SO_2	sulfur dioxide
SO_3	sulfur trioxide
SO_x	sulfur oxides
TCDD	tetrachlorodibenzodioxin
TCDF	tetrachlorodibenzofuran
TGOC	total gaseous organic concentration
THC	total hydrocarbons
Tl	thallium
TRS	total reduced sulfur compounds
Zn	zinc

Appendix D.2
Manual Test Method QA/QC Data

MONTROSE ENVIRONMENTAL

EPA Method 5

Meter Box Calibration by Calibrated Critical Orifice, Leak Check, and Thermocouple Calibration Check English Meter Box Units, English K' Factor

Meter box ID:	MB 24
Meter ID (if applicable):	
Orifice set ID:	SHOP #1
Calibrated by:	JV
Expires:	6/4/22

Date:	12/4/21
Location:	PDX shop
No. of orifices used (min. 3)	3
Barometric pressure (in. Hg):	30.13 in. Hg
Theoretical critical vacuum	14.21 in. Hg

Yd:	1.0201
ΔH@:	1.6081

Meter Box Orifice Calibration

IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

		Volume			Initial Temps.		Final Temps.		Orifice	K' Orifice		-- Ambient Temperature --		
ΔH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Net (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.28	19.00	546.489	552.271	5.782		61		62	40	0.2400	24.5	59	59	59.4
0.60	17.00	552.271	559.861	7.590		63		64	48	0.3502	23.0	59	60	59.6
1.10	20.00	559.861	571.865	12.004		64		67	55	0.4690	21.0	60	60	59.8

-- SAMPLE RATE --
INDICATED VS. ACTUAL

ΔH (in. H2O)	Sample Rate (scfm)
0.28	0.317
0.60	0.463
1.10	0.620

-- DRY GAS METER --
VOLUME CORRECTED

Vm(std) (cu ft)
5.897
7.717
12.173

------ ORIFICE ------

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME NOMINAL Vcr (cu ft)
6.028	5.890
7.870	7.694
12.396	12.122

-- DRY GAS METER --
CALIBRATION FACTOR Yd

Value (number)	Variation (number)
1.0222	0.002
1.0199	0.000
1.0183	-0.002

------ ORIFICE ------
CALIBRATION FACTOR ΔH@

Value (in H2O)	Variation (in H2O)
1.595	-0.013
1.599	-0.009
1.630	0.022

For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

QA Criteria:	
Average Yd	1.0201
Average ΔH@	1.6081
Variation of Yd's	PASS
Variation of ΔH@	PASS
Vacuum Criteria	PASS

Meter Box Pressure Leak Check

Test Pressure, (in H_2O):	6	Should be 5-7 in. H_2O
Leak Rate, (in H_2O/min):	0	Must be zero (manometer level stable for 1 minute)

Meter Box Vacuum Leak Check

Test Vacuum, (in. Hg):	26	Coarse adjust valve fully open, fine adjust fully closed, sample inlet plugged
Leak Rate, (cfm):	0	Must be zero (meter dial stable for 1 minute)

Meter Box Thermocouple Readout Calibration Check

Input Temperature	Allowable Temp. Dev.*
25	7
75	8
125	9
250	11
300	11
350	12
400	13
500	14

Stack	Probe	Filter	Exit	Aux.	Meter In	Meter Out
29	29	29	31	32	25	24
80	80	79	81	82	76	76
130	129	130	132	133	126	126
256	255	253				
306	304	305				
355						
405						
504						

Thermocouple simulator	
Make/Model:	Altek Type K
Serial No.	541
Cal Date:	1/18/2021

Meter Thermocouple Calibration

Ref. Temp	Allowable Temp. Dev.*	Meter In	Meter Out
60	8		61
150	9		154

Reference Thermometer	
Make/Model:	Traceable
Serial No.	200456908
Cal Date:	4/2/2021

* Reading values must be within 1.5% of reference thermometer values (based on absolute temperature scale) for calibration to be acceptable.

Performed by: Name: Julian Vacca Signature: Julian Vacca Date: 12/4/21

Approved by: Name: Peter Ben Signature: Peter Ben Date: 12/4/21

MONTROSE ENVIRONMENTAL

EPA Method 5

Meter Box Calibration by Calibrated Critical Orifice: Post-Test, English Meter Box Units, English K' Factor

Meter box ID:	MB24
Meter ID (if applicable):	XXXX
Orifice set ID:	ND-40-73
Calibrated by (initials):	AG
Current 6-month calibration Yd:	1.0201
Date of 6-month calibration:	12/4/21

Date:	12/10/21
Location:	Portland
No. of runs (default 3)	3
Barometric pressure (in. Hg):	30.19 in. Hg
Theoretical critical vacuum:	14.24 in. Hg

Current Cal. Yd:	**1.0201**
Post-test Yd:	**1.0027**
Post-test Result:	**PASS**

Meter Box Orifice Calibration

IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

		Volume			Initial Temps.		Final Temps.		Orifice	K' Orifice		-- Ambient Temperature --		
ΔH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Net (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
1.10	10.00	696.350	702.228	5.878	XX	62	XX	63	55	0.4521	22.0	58	58	58.0
1.10	9.00	702.228	707.494	5.266	XX	63	XX	64	55	0.4521	22.0	58	58	58.0
1.10	9.00	707.494	712.770	5.276	XX	64	XX	65	55	0.4521	22.0	58	58	58.0

— SAMPLE RATE —
INDICATED VS. ACTUAL

ΔH (in. H2O)	Sample Rate (scfm)
1.10	0.60
1.10	0.60
1.10	0.60

--- DRY GAS METER ---
VOLUME CORRECTED

Vm(std) (cu ft)
6.007
5.371
5.371

------ ORIFICE ------

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME NOMINAL Vcr (cu ft)
5.997	5.833
5.398	5.250
5.398	5.250

– DRY GAS METER –
CALIBRATION FACTOR Yd

Value (number)	Variation (number)
0.9984	-0.004
1.0049	0.002
1.0049	0.002

------ ORIFICE ------
CALIBRATION FACTOR ΔH@

Value (in H2O)	Variation (in H2O)
1.75	0.003
1.75	0.000
1.75	-0.003

For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

QA Criteria:	
Average Yd	1.0027
Average ΔH@	1.7507
Variation of Yd's	PASS
Variation of ΔH@	PASS
Vacuum Criteria	PASS

Meter Box Vacuum Leak Check

Test Vacuum, (in. Hg):	27	Coarse adjust valve fully open, fine adjust fully closed, sample inlet plugged
Leak Rate, (cfm):	0	Must be zero (meter dial stable for 1 minute)

Performed by: Name: Austin Goracke Signature: [signature] Date: 12/10/21

Approved by: Name: Preston Bauder Signature: [signature] Date: 12/10/21

MONTROSE ENVIRONMENTAL

EPA Method 5

Meter Box Calibration by Calibrated Critical Orifice, Leak Check, and Thermocouple Calibration Check

English Meter Box Units, English K' Factor

Meter box ID:	MB31
Meter ID (if applicable):	METER ID
Orifice set ID:	TV1
Calibrated by:	AG
Expires:	5/19/22

Date:	11/19/21
Location:	Portland
No. of orifices used (min. 3)	3
Barometric pressure (in. Hg):	30.26 in. Hg
Theoretical critical vacuum	14.27 in. Hg

Yd:	**0.9902**
ΔH@:	**1.8162**

Meter Box Orifice Calibration

IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above

IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

		Volume			Initial Temps.		Final Temps.		Orifice	K' Orifice		– Ambient Temperature –		
ΔH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Net (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.78	15.00	69.645	77.203	7.558	XX	61	XX	61	51	0.3857	21.0	61	61	61.0
1.30	9.00	77.203	82.838	5.635	XX	61	XX	61	56	0.4819	19.0	61	61	61.0
2.40	7.00	82.838	88.710	5.872	XX	61	XX	XX	65	0.6450	17.0	61	61	61.0

— SAMPLE RATE —
INDICATED VS. ACTUAL

ΔH (in. H2O)	Sample Rate (scfm)
0.78	0.511
1.30	0.639
2.40	0.855

— DRY GAS METER —
VOLUME CORRECTED

Vm(std) (cu ft)
7.758
5.792
6.051

—— ORIFICE ——

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME NOMINAL Vcr (cu ft)
7.670	7.486
5.750	5.612
5.986	5.842

– DRY GAS METER –
CALIBRATION FACTOR Yd

Value (number)	Variation (number)
0.9887	-0.002
0.9927	0.003
0.9892	-0.001

—— ORIFICE ——
CALIBRATION FACTOR ΔH@

Value (in H2O)	Variation (in H2O)
1.720	-0.096
1.836	0.020
1.892	0.076

For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

QA Criteria:	
Average Yd	0.9902
Average ΔH@	1.8162
Variation of Yd's	PASS
Variation of ΔH@	PASS
Vacuum Criteria	PASS

Meter Box Pressure Leak Check

Test Pressure, (in H_2O):	6	Should be 5-7 in. H_2O
Leak Rate, (in H_2O/min):	0	Must be zero (manometer level stable for 1 minute)

Meter Box Vacuum Leak Check

Test Vacuum, (in. Hg):	25	Coarse adjust valve fully open, fine adjust fully closed, sample inlet plugged
Leak Rate, (cfm):	0	Must be zero (meter dial stable for 1 minute)

Meter Box Thermocouple Readout Calibration Check

Input Temperature	Allowable Temp. Dev.*
25	7
75	8
125	9
250	11
350	12
500	14

Stack	Probe	Filter	Exit	Aux.	Meter In	Meter Out
25	24	25	23	28	25	25
75	77	77	75	77	74	78
126	125	126	125	125	126	125
248	253	250				
350	351	347				
498						
XX						
XX						

Thermocouple simulator	
Make/Model:	Omega CL300
Serial No.	647
Cal Date:	1/10/2020

Meter Thermocouple Calibration

Ref. Temp	Allowable Temp. Dev.*	Meter In	Meter Out
61.5	8	61	62
61.5	8	62	63

Reference Thermometer	
Make/Model:	Traceable
Serial No.	170865315
Cal Date:	6/16/2020

* Reading values must be within 1.5% of reference thermometer values (based on absolute temperature scale) for calibration to be acceptable.

Performed by: Name: Austin Goracke Signature: [signature] Date: 11/19/21

Approved by: Name: Preston Bowden Signature: [signature] Date: 11/19/21

MONTROSE ENVIRONMENTAL

EPA Method 5

Meter Box Calibration by Calibrated Critical Orifice: Post-Test, English Meter Box Units, English K' Factor

Meter box ID:	MB31
Meter ID (if applicable):	XXXX
Orifice set ID:	Shop#1
Calibrated by (initials):	PB
Current 6-month calibration Yd:	0.9902
Date of 6-month calibration:	11/19/21

Date:	12/10/21
Location:	OFFICE
No. of runs (default 3)	3
Barometric pressure (in. Hg):	30.15 in. Hg
Theoretical critical vacuum:	14.22 in. Hg

Current Cal. Yd:	**0.9902**
Post-test Yd:	**0.9959**
Post-test Result:	**PASS**

Meter Box Orifice Calibration

IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

		Volume			Initial Temps.		Final Temps.		Orifice	K' Orifice		-- Ambient Temperature --		
ΔH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Net (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
1.50	12.00	214.446	223.807	9.361	XX	58	XX	60	63	0.6026	18.0	62	62	62.0
1.50	12.00	223.807	233.162	9.355	XX	60	XX	62	63	0.6026	18.0	62	62	62.0
1.50	11.00	233.162	241.731	8.569	XX	62	XX	65	63	0.6026	18.0	62	62	62.0

--- SAMPLE RATE ---
INDICATED VS. ACTUAL

ΔH (in. H2O)	Sample Rate (scfm)
1.50	0.80
1.50	0.80
1.50	0.80

--- DRY GAS METER ---
VOLUME CORRECTED

Vm(std) (cu ft)
9.628
9.585
8.737

------ ORIFICE ------

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME NOMINAL Vcr (cu ft)
9.542	9.366
9.542	9.366
8.747	8.585

-- DRY GAS METER --
CALIBRATION FACTOR Yd

Value (number)	Variation (number)
0.9911	-0.005
0.9956	0.000
1.0011	0.005

------ ORIFICE ------
CALIBRATION FACTOR ΔH@

Value (in H2O)	Variation (in H2O)
1.37	0.006
1.36	0.000
1.36	-0.006

For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

QA Criteria:	
Average Yd	0.9959
Average ΔH@	1.3623
Variation of Yd's	PASS
Variation of ΔH@	PASS
Vacuum Criteria	PASS

Meter Box Vacuum Leak Check

Test Vacuum, (in. Hg):	XX	Coarse adjust valve fully open, fine adjust fully closed, sample inlet plugged
Leak Rate, (cfm):	XX	Must be zero (meter dial stable for 1 minute)

Performed by: Name: Preston Bandle Signature: _____ Date: 12/10/21

Approved by: Name: Pete Baker Signature: _____ Date: 12/10/21

MONTROSE ENVIRONMENTAL

EPA Method 5 / 6

Meter Box Calibration: Standard Meter, Leak Check, and Thermocouple Calibration Check

Metric Meter Box Units

Meter Box ID:	LFCB 02A
Meter ID (if applicable):	
Standard meter ID:	16894627
Standard meter Y (if applicable):	1.0083
Calibrated by:	JV
Current 6-month calibration Yd:	1.0265
Date of current 6-month calibration:	12/4/21

Date:	12/14/21
Location:	PDX shop
No. of runs (min. 3):	3
Meter box units, sample rate indication	liters, rotameter
Standard meter units	liters
Barometric pressure (in. Hg):	29.87 in. Hg

Current Cal. Yd:	**1.0265**
Post-test Yd:	**1.0230**
Post-test Result:	**PASS**

Meter Box Calibration Using a Standard Reference Meter

		Dry Gas Meter								Standard Meter									
		Volume			Initial Temps.		Final Temps.			Volume			Initial Temps.		Final Temps.		-- Ambient Temperature --		
Rotameter (liter / min)	Time (min)	Initial (liters)	Final (liters)	Net (liters)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Vacuum (in Hg)	Initial (liters)	Final (liters)	Net (liters)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Initial (deg F)	Final (deg F)	Average (deg F)
500.00	11.00	0.000	5.835	5.835	N/A	53	N/A	54	0.0	5720.700	5726.700	6.000	N/A	55	N/A	55	59	59	58.6
500.00	25.00	5.835	19.131	13.296	N/A	54	N/A	56	0.0	5726.700	5740.250	13.550	N/A	55	N/A	56	59	59	58.8
500.00	11.00	19.131	24.999	5.868	N/A	56	N/A	56	0.0	5740.250	5746.120	5.870	N/A	56	N/A	56	59	59	59.1

---- SAMPLE RATE ----

INDICATED VS. ACTUAL

Indicated (liter / min)	Actual (liter / min)
500.000	0.563
500.000	0.559
500.000	0.549

--- DRY GAS METER ---

CORRECTED VOLUME

Vm(std) (liters)
5.987
13.603
5.992

--- STANDARD METER ---

CORRECTED VOLUME

Vm(std) (liters)
6.190
13.965
6.044

-- DRY GAS METER --

CALIBRATION FACTOR

Yd

Value (number)	Variation (number)
1.0338	0.011
1.0266	0.004
1.0086	-0.014

-- DRY GAS METER --

CALIBRATION FACTOR

ΔH@

Value (number)	Variation (number)
#N/A	#N/A
#N/A	#N/A
#N/A	#N/A

For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

QA Criteria:	
Average Yd	1.0230
Average ΔH@	#N/A
Variation of Yd's	PASS
Variation of ΔH@	#N/A

Meter Box Vacuum Leak Check

Test Vacuum, (in. Hg):	7	Coarse adjust valve fully open, fine adjust fully closed, sample inlet plugged
Leak Rate, (cfm):	0	Must be zero (meter dial stable for 1 minute)

Performed by: Name: Julian Vaca Signature: Julian Vaca Date: 12/14/21

Approved by: Name: Preston Sandy Signature: [signature] Date: 12/14/21

MONTROSE ENVIRONMENTAL

EPA Method 5 / 6

Meter Box Calibration: Standard Meter, Leak Check, and Thermocouple Calibration Check

Metric Meter Box Units

Meter Box ID:	LFCB 02B
Meter ID (if applicable):	
Standard meter ID:	16894627
Standard meter Y (if applicable):	1.0083
Calibrated by:	JV
Current 6-month calibration Yd:	1.0047
Date of current 6-month calibration:	12/4/21

Date:	12/14/21
Location:	PDX shop
No. of runs (min. 3):	3
Meter box units, sample rate indication	liters, rotameter
Standard meter units	liters
Barometric pressure (in. Hg):	29.87 in. Hg

Current Cal. Yd:	1.0047
Post-test Yd:	1.0095
Post-test Result:	PASS

Meter Box Calibration Using a Standard Reference Meter

		Dry Gas Meter								Standard Meter									
		Volume			Initial Temps.		Final Temps.			Volume			Initial Temps.		Final Temps.		-- Ambient Temperature --		
Rotameter (liter / min)	Time (min)	Initial (liters)	Final (liters)	Net (liters)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Vacuum (in Hg)	Initial (liters)	Final (liters)	Net (liters)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Initial (deg F)	Final (deg F)	Average (deg F)
500.00	12.00	0.000	6.735	6.735	N/A	59	N/A	59	0.0	5746.220	5752.950	6.730	N/A	59	N/A	59	60	60	60.0
500.00	64.00	6.735	42.552	35.817	N/A	59	N/A	62	0.0	5752.950	5788.710	35.760	N/A	59	N/A	60	60	61	60.3
500.00	27.00	42.552	57.882	15.330	N/A	62	N/A	62	0.0	5788.710	5804.040	15.330	N/A	60	N/A	60	61	60	60.2

------ SAMPLE RATE ------

INDICATED VS. ACTUAL

Indicated (liter / min)	Actual (liter / min)
500.000	0.574
500.000	0.571
500.000	0.580

--- DRY GAS METER ---

CORRECTED VOLUME

Vm(std) (liters)
6.838
36.258
15.474

---- STANDARD METER ----

CORRECTED VOLUME

Vm(std) (liters)
6.889
36.571
15.663

-- DRY GAS METER --

CALIBRATION FACTOR

Yd

Value (number)	Variation (number)
1.0076	-0.002
1.0086	-0.001
1.0122	0.003

-- DRY GAS METER --

CALIBRATION FACTOR

ΔH@

Value (number)	Variation (number)
#N/A	#N/A
#N/A	#N/A
#N/A	#N/A

For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

QA Criteria:	
Average Yd	1.0095
Average ΔH@	#N/A
Variation of Yd's	PASS
Variation of ΔH@	#N/A

Meter Box Vacuum Leak Check

Test Vacuum, (in. Hg):	7	Coarse adjust valve fully open, fine adjust fully closed, sample inlet plugged
Leak Rate, (cfm):	0	Must be zero (meter dial stable for 1 minute)

Performed by: Name: Julian Vaca Signature: Julian Vaca Date: 12/14/21

Approved by: Name: Preston Beedler Signature: [signature] Date: 12/14/21

Critical Orifice Calibration

Client	MONTROSE										6/8/21	Date
Set ID	TV1										in house	Job
DGM (Y) =	1.0043		Fluke ID	526		PLC	0 at		6 inH2O			Calibrated
DGM ID #	19461089		Std Manometer	537		NLC	0 at		22 inHg			QA/QC
Dry Gas Meter			Orifice ID #	35	Orifice ID #	44	Orifice ID #	51	Orifice ID #	56	Orifice ID #	65
K' Critical Orifice Coefficient				**0.18118**		**0.29561**		**0.38571**		**0.48188**		**0.64503**
	Symbol	Units	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2
Initial volume	V_i	ft³	950.255	959.124	964.043	974.337	919.608	932.158	979.755	989.768	995.407	1001.285
Final Volume	V_f	ft³	959.124	964.043	974.337	979.715	932.158	950.255	989.768	995.407	1001.285	1006.340
Difference	V_m	ft³	8.869	4.919	10.294	5.378	12.550	18.097	10.013	5.639	5.878	5.055
Temperatures												
Ambient	T_a	°F	78.2	80.9	81.8	81.9	77.7	81.5	82.3	82.2	82.7	82.2
Absolute ambient	T_a	°R	537.87	540.57	541.47	541.57	537.37	541.17	541.97	541.87	542.37	541.87
Initial Inlet	T_i	°F	68.3	73.2	73.1	77.5	76.3	80.9	76.4	83.5	83.5	89.3
Outlet	T_f	°F	68.3	71.1	72.1	73.1	74.5	74.1	73.3	74.4	74.5	75.5
Final Inlet	T_i	°F	73.2	73.3	77.5	76.8	80.9	81.5	83.5	83.5	89	88.1
Outlet	T_f	°F	71.1	72	73.1	73.1	74.1	74.6	74.4	74.5	75.5	75.5
Avg. Temp	T_m	°R	529.895	532.07	533.62	534.795	536.12	537.445	536.57	538.645	540.295	541.77
Time		min	38	21	27	14	25	36	16	9	7	6
		sec	0	0	0	0	0	0	0	0	0	0
			38.00	21.00	27.00	14.00	25.00	36.00	16.00	9.00	7.00	6.00
SAMPLE RATE		ACFM	0.3078	0.2342	0.3813	0.3841	0.5020	0.5027	0.6258	0.6266	0.8397	0.8425
Orifice man. rdg	dH@	in H_2O	0.17	0.17	0.48	0.48	0.85	0.85	1.40	1.40	2.50	2.50
Barometric. Pressure	Pbar	inHg	29.97	29.97	29.97	29.97	29.94	29.94	29.97	29.97	29.97	29.97
Pump vacuum		inHg	24.0	24.0	22.0	22.0	21.0	21.0	19.0	19.0	16.0	16.0
K' factor			0.1810	0.1814	0.2948	0.2964	0.3852	0.3862	0.4825	0.4812	0.6450	0.6451
K' factor Average				0.1812		0.2956		0.3857		0.4819		0.6450
% Error (+/- 0.5)		%	PASS	0.101%	PASS	0.270%	PASS	0.122%	PASS	0.138%	PASS	0.006%

Critical Orifice Calibration

Client	MONTROSE										6/10/21	Date
Set ID	SHOP #1										in house	Job
DGM (Y) =	1.0043		Fluke ID	526		PLC	0 at		6 inH2O		0	Calibrated
DGM ID #	19461089		Std Manometer	537		NLC	0 at		22 inHg		0	QA/QC
Dry Gas Meter			Orifice ID #	40	Orifice ID #	48	Orifice ID #	55	Orifice ID #	63	Orifice ID #	73
K' Critical Orifice Coefficient				**0.23996**		**0.35024**		**0.46898**		**0.60258**		**0.82426**
	Symbol	Units	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2
Initial volume	V_i	ft³	250.239	258.575	267.550	279.343	300.234	307.535	315.455	324.863	331.915	337.274
Final Volume	V_f	ft³	258.575	267.550	279.343	300.234	307.535	315.455	324.863	331.915	337.274	342.655
Difference	V_m	ft³	8.336	8.975	11.793	20.891	7.301	7.920	9.408	7.052	5.359	5.381
Temperatures												
Ambient	T_a	°F	80.0	82.0	82.9	83.6	83.5	84.2	84.4	83.8	84.4	84.5
Absolute ambient	T_a	°R	539.67	541.67	542.57	543.27	543.17	543.87	544.07	543.47	544.07	544.17
Initial Inlet	T_i	°F	68.9	73.3	74.3	78.5	78.9	83.9	82.6	89.1	88.5	93.8
Outlet	T_f	°F	68.7	69.9	70.9	71.6	72.5	73.3	73.8	71.7	75.4	76.1
Final Inlet	T_i	°F	73.3	74.9	78.5	80.1	83.9	84.9	89.1	89.9	93.8	94.1
Outlet	T_f	°F	69.9	70.9	71.6	82.7	73.3	73.8	71.7	75.3	76.1	76.4
Avg. Temp	T_m	°R	529.87	531.92	533.495	537.895	536.82	538.645	538.97	541.17	543.12	544.77
Time		min	27	29	26	46	12	13	12	9	5	5
		sec	0	0	0	0	0	0	0	0	0	0
			27.00	29.00	26.00	46.00	12.00	13.00	12.00	9.00	5.00	5.00
SAMPLE RATE		ACFM	0.3078	0.3095	0.4536	0.4542	0.6084	0.6092	0.7840	0.7836	1.0718	1.0762
Orifice man. rdg	dH@	in H_2O	0.31	0.31	0.70	0.70	1.30	1.30	2.20	2.20	4.30	4.30
Barometric. Pressure	Pbar	inHg	30.21	30.21	30.21	30.21	30.21	30.21	30.21	30.21	30.21	30.21
Pump vacuum		inHg	23.0	23.0	21.0	21.0	20.0	20.0	17.0	17.0	15.0	15.0
K' factor			0.2399	0.2400	0.3513	0.3491	0.4693	0.4686	0.6041	0.6010	0.8238	0.8247
K' factor Average				0.2400		0.3502		0.4690		0.6026		0.8243
% Error (+/- 0.5)		%	PASS	0.019%	PASS	0.315%	PASS	0.071%	PASS	0.260%	PASS	0.058%

Critical Orifice Calibration

Client	MONTROSE										11/22/21	Date
Set ID	ND 40-73										in house	Job
DGM (Y) =	1.0043		Fluke ID	377		PLC	0 at		6 inH2O		PB	Calibrated
DGM ID #	19461089		Std Manometer	537		NLC	0 at		22 inHg		QA/QC	
Dry Gas Meter			Orifice ID #	40	Orifice ID #	48	Orifice ID #	55	Orifice ID #	63	Orifice ID #	73
K' Critical Orifice Coefficient				**0.23405**		**0.33815**		**0.45212**		**0.58970**		**0.80789**
	Symbol	Units	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2
Initial volume	V_i	ft³	496.294	509.363	515.448	525.453	534.600	540.423	546.842	553.676	559.775	564.988
Final Volume	V_f	ft³	502.334	515.448	525.453	534.600	540.423	546.842	553.676	559.775	564.988	570.211
Difference	V_m	ft³	6.040	6.085	10.005	9.147	5.823	6.419	6.834	6.099	5.213	5.223
Temperatures												
Ambient	T_a	°F	54.9	55.9	56.7	57.7	60.0	64.7	65.6	66.1	66.0	65.8
Absolute ambient	T_a	°R	514.57	515.57	519.67	517.37	519.67	524.37	525.27	525.77	525.67	525.47
Initial Inlet	T_i	°F	63.1	56.1	58.8	63.1	64.7	68.1	69.5	73.5	75.7	74.5
Outlet	T_f	°F	59.7	26.7	56.9	57.8	58.4	59.1	59.6	60.3	60.9	61.6
Final Inlet	T_i	°F	59.6	59	64.2	65.2	68.8	70	74	74.9	79.1	79.9
Outlet	T_f	°F	58.3	56.9	57.8	58.4	59	59.6	60.3	60.8	61.7	62.1
Avg. Temp	T_m	°R	519.845	509.345	519.095	520.795	522.395	523.87	525.52	527.045	529.02	529.195
Time		min	20	20	23	21	10	11	9	8	5	5
		sec	0	30	0	0	0	0	0	0	0	0
			20.00	20.50	23.00	21.00	10.00	11.00	9.00	8.00	5.00	5.00
SAMPLE RATE		ACFM	0.3078	0.2968	0.4350	0.4356	0.5823	0.5835	0.7593	0.7624	1.0426	1.0446
Orifice man. rdg	dH@	in H_2O	0.30	0.30	0.62	0.62	1.10	1.10	1.90	1.90	3.60	3.60
Barometric. Pressure	Pbar	inHg	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13
Pump vacuum		inHg	20.0	20.0	18.0	18.0	17.0	17.0	15.0	15.0	12.0	12.0
K' factor			0.2336	0.2345	0.3389	0.3374	0.4513	0.4530	0.5892	0.5902	0.8073	0.8084
K' factor Average				0.2341		0.3381		0.4521		0.5897		0.8079
% Error (+/- 0.5)		%	PASS	0.205%	PASS	0.209%	PASS	0.191%	PASS	0.079%	PASS	0.070%

Secondary Standard Calibration

DATE: 5/19/2021 Operator: Joe Camodeca

Meter Box No:	19461089	Meter Box ΔH@:	0.0000	Meter Box Yd	1.0043	Barometric Pressure:	29.69

				Standard Meter Gas Volume			Meter Box Gas Volume (ft³)			Std. Meter Temperature (ÞF)			Meter Box Temperature (ÞF)					
Q	P	H	Yds	Initial	Final	Vf	Initial	Final	Vf	Inlet	Outlet	Avg.	Inlet	Outlet	Avg.	Time	Yd	ΔH@
1.24	-1.00	0.00	1.0000	0.0	5.000	5.000	848.000	853.046	5.046	71.0	71.0	71.0	73.0	73.0	73.0	3.98	0.9971	0.0000
1.24	-1.00	0.00	1.0000	0.0	5.000	5.000	853.046	858.103	5.057	71.0	71.0	71.0	73.0	73.0	73.0	3.98	0.9949	0.0000
1.24	-1.00	0.00	1.0000	0.0	5.000	5.000	858.103	863.151	5.048	71.0	71.0	71.0	73.0	73.0	73.0	3.98	0.9967	0.0000
0.97	-0.90	0.00	1.0000	0.0	5.000	5.000	828.701	833.727	5.026	71.0	71.0	71.0	73.0	73.0	73.0	5.08	1.0008	0.0000
0.98	-0.90	0.00	1.0000	0.0	5.000	5.000	833.727	838.746	5.019	71.0	71.0	71.0	73.0	73.0	73.0	5.05	1.0022	0.0000
0.97	-0.90	0.00	1.0000	0.0	5.000	5.000	838.746	843.760	5.014	71.0	71.0	71.0	73.0	73.0	73.0	5.08	1.0032	0.0000
0.75	-0.70	0.00	1.0000	0.0	5.000	5.000	813.102	818.098	4.996	71.0	71.0	71.0	73.0	73.0	73.0	6.55	1.0063	0.0000
0.76	-0.70	0.00	1.0000	0.0	5.000	5.000	818.098	823.100	5.002	71.0	71.0	71.0	73.0	73.0	73.0	6.53	1.0051	0.0000
0.76	-0.70	0.00	1.0000	0.0	5.000	5.000	823.100	828.089	4.989	71.0	71.0	71.0	73.0	73.0	73.0	6.52	1.0077	0.0000
0.61	-0.50	0.00	1.0000	0.0	5.000	5.000	794.500	799.481	4.981	71.0	71.0	71.0	73.0	73.0	73.0	8.15	1.0088	0.0000
0.61	-0.50	0.00	1.0000	0.0	5.000	5.000	799.481	804.457	4.976	71.0	71.0	71.0	73.0	73.0	73.0	8.15	1.0099	0.0000
0.61	-0.50	0.00	1.0000	0.0	5.000	5.000	804.457	809.441	4.984	71.0	71.0	71.0	73.0	73.0	73.0	8.05	1.0082	0.0000
0.39	-0.50	0.00	1.0000	0.0	5.000	5.000	771.200	776.184	4.984	71.0	71.0	71.0	73.0	73.0	73.0	12.63	1.0082	0.0000
0.39	-0.50	0.00	1.0000	0.0	5.000	5.000	776.184	781.168	4.984	71.0	71.0	71.0	73.0	73.0	73.0	12.63	1.0082	0.0000
0.39	-0.50	0.00	1.0000	0.0	5.000	5.000	781.168	786.157	4.989	71.0	71.0	71.0	73.0	73.0	73.0	12.65	1.0072	0.0000
															AVERAGE		1.0043	0.0000

Millennium Instruments Inc.
2402 Springridge Drive unit I
Spring Grove IL. 60081
PHONE#(815)675-3225
FAX#(815)675-6965
E-mail millennium@millinst.com
www.millinst.com

Calibrated By: Joe Camodeca

Signature:

Vacuum Gauge

(in. Hg)	Gauge
5.0	5.0
10.0	10.0
15.0	15.0
20.0	20.0
25.0	25.0

Secondary Standard Calibration- Liter

DATE: 5/19/2021

Operator: Joe Camodeca

Meter Box No:	16894627	Meter Box H@:	0.0000	Meter Box Yd	1.0083	Barometric Pressure:	29.69

				Standard Meter Gas Volume (Liter)			Meter Box Gas Volume (Liters)			Std. Meter Temperature (ÞF)			Meter Box Temperature (ÞF)					
Q	P	H	Yds	Initial	Final	Vf	Initial	Final	Vf	Inlet	Outlet	Avg.	Inlet	Outlet	Avg.	Time	Yd	H@
1.20	-1.00	0.00	1.0000	0.0	141.545	141.545	1475.000	1616.230	141.230	72.0	72.0	72.0	73.1	73.1	73.1	4.10	1.0068	0.0000
1.20	-1.00	0.00	1.0000	0.0	141.545	141.545	1616.230	1757.270	141.040	72.0	72.0	72.0	73.1	73.1	73.1	4.10	1.0082	0.0000
1.20	-1.00	0.00	1.0000	0.0	141.545	141.545	1757.270	1898.290	141.020	72.0	72.0	72.0	73.1	73.1	73.1	4.10	1.0083	0.0000
0.92	-0.90	0.00	1.0000	0.0	141.545	141.545	1000.070	1140.960	140.890	72.0	72.0	72.0	73.1	73.1	73.1	5.32	1.0090	0.0000
0.00	-0.90	0.00	1.0000	0.0	141.545	141.545	1140.960	1282.230	141.270	72.0	72.0	72.0	73.1	73.1	73.1	5.32	1.0063	0.0000
0.92	-0.90	0.00	1.0000	0.0	141.545	141.545	1282.230	1423.160	140.930	72.0	72.0	72.0	73.1	73.1	73.1	5.32	1.0087	0.0000
0.79	-0.70	0.00	1.0000	0.0	169.902	169.902	2063.980	2233.280	169.300	72.0	72.0	72.0	73.1	73.1	73.1	7.43	1.0074	0.0000
0.79	-0.70	0.00	1.0000	0.0	141.545	141.545	2233.280	2374.650	141.370	72.0	72.0	72.0	73.1	73.1	73.1	6.22	1.0051	0.0000
0.79	-0.70	0.00	1.0000	0.0	169.902	169.902	2374.650	2544.170	169.520	72.0	72.0	72.0	73.1	73.1	73.1	7.48	1.0061	0.0000
0.59	-0.60	0.00	1.0000	0.0	141.545	141.545	2586.000	2727.150	141.150	72.0	72.0	72.0	73.1	73.1	73.1	8.37	1.0064	0.0000
0.59	-0.60	0.00	1.0000	0.0	141.545	141.545	2727.150	2867.840	140.690	72.0	72.0	72.0	73.1	73.1	73.1	8.40	1.0097	0.0000
0.59	-0.60	0.00	1.0000	0.0	141.545	141.545	2867.840	3008.840	141.000	72.0	72.0	72.0	73.1	73.1	73.1	8.40	1.0074	0.0000
0.38	-0.50	0.00	1.0000	0.0	141.545	141.545	3165.000	3305.350	140.350	72.0	72.0	72.0	73.1	73.1	73.1	12.83	1.0119	0.0000
0.38	-0.50	0.00	1.0000	0.0	254.853	254.853	3305.350	3557.920	252.570	72.0	72.0	72.0	73.1	73.1	73.1	23.08	1.0124	0.0000
0.38	-0.50	0.00	1.0000	0.0	141.545	141.545	3557.920	3698.280	140.360	72.0	72.0	72.0	73.1	73.1	73.1	12.83	1.0118	0.0000
															AVERAGE		1.0083	0.0000

Millennium Instruments Inc.
2402 Springridge Drive unit I
Spring Grove IL. 60081
PHONE#(815)675-3225
FAX#(815)675-6965
E-mail millennium@millinst.com
www.millinst.com

Calibrated By: Joe Camodeca

Signature:

Vacuum Gauge

(in. Hg)	Gauge
5.0	5.0
10.0	10.0
15.0	15.0
20.0	20.0
25.0	25.0

MONTROSE ENVIRONMENTAL

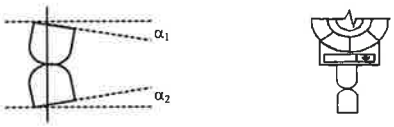
Pitot Tube Calibration Data Sheet

Calibration Date:	October 22, 2021	**Performed by:**	Max Gouveia	**Expiration Date:**	April 22, 2022
		ID No.:	*007	**No obstructions:**	Yes
Calibrated Pitot Tube:	S-type	**Probe/Pitot ID No:**	*007	**No damage:**	Yes
Probe Description:	Self Supporting Probe (SP)	**Effective Length (ft):**	5	**Level and Perpendicular:**	Yes
Thermocouple calibration performed?			**Thermocouple passed calibration?**		Yes

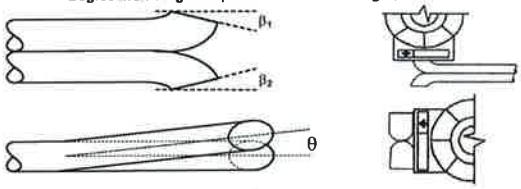
Protractor or Digital Angle Finder ID: 703
Measuring Tape ID: 720
Caliper ID: 702

Calibration performed using the procedures of EPA Method 2, Section 10.1

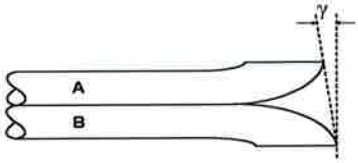
Alignment and Tubing Dimensions



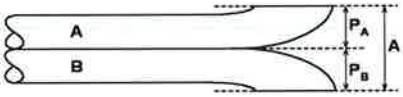
Degree indicating level position for determining α_1 and α_2.



Degree indicating level position for determining θ.

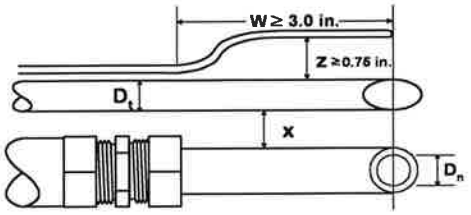


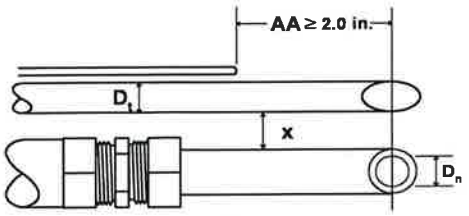
Degree indicating level position for determining γ then calculating Z.

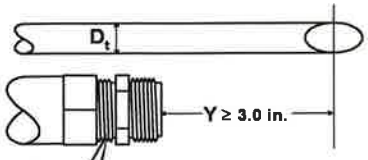


α_1 ($-10° < \alpha_1 < +10°$)	1.5	
α_2 ($-10° < \alpha_2 < +10°$)	3.2	
β_1 ($-5° < \beta_1 < +5°$)	1.5	
β_2 ($-5° < \beta_2 < +5°$)	1.8	
γ	0.8	
θ	1.1	
A	0.9445	
z= A tan γ (± 0.125")	0.0132	Pass
w= A tan θ (± 0.03125")	0.0181	Pass
D_t (0.1875" < D_t < 0.375")	0.3740	Pass
P_A (1.05D_t < P_A < 1.5D_t)	0.4723	Pass
P_B (1.05D_t < P_B < 1.5D_t)	0.4723	Pass
$\lvert P_A - P_B \rvert \leq 0.0625$	0.0000	Pass

Assembly Inter-Component Spacing Requirements







W (≥ 3.0")	5.300	Pass	Offset TC only
-or- AA (≥ 2.0")			Setback TC only
X	0.885		
D_n	0.250		
X / D_n (≥ 1.5)	3.250	Pass	
Y (≥ 3.0")	3.450	Pass	
Z ≥ 0.75"	1.000	Pass	Offset TC only

Performed By: Max Gouveia Signature: Date: 10/22/21
Approved By: Peter Becker Signature: Date: 10/22/21

ilac-MRA A2LA ACCREDITED A2LA Certificate No. 1750.01 Calibration

Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001

Cert. No.: 4371-12034579

Traceable® Certificate of Calibration for Lollipop Thermometer

Manufactured for and distributed by : Thomas Scientific Box 99,99 High Hill Road,Swedeboro,NJ,08085-0099,U.S.A.

Instrument Identification:

Model: 1235D23, S/N: 210187011 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Temperature Calibration Bath	A73332		
Temperature Calibration Bath	B3A444		
Thermistor Module	B96381	21 Aug 2021	1000457544
Temperature Probe	5392	04 Aug 2021	C0804052
Temperature Probe	5398	04 Aug 2021	C0804051

Certificate Information:

Technician: 420 Procedure: CAL-03 Cal Date: 09 Mar 2021 Cal Due Date: 09 Mar 2023

Test Conditions: 54.91%RH 22.53°C 1026mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
°C	N.A.	N.A.		0.00	0.0	Y	-1	1	0.058	>4:1
°C	N.A.	N.A.		100.00	100.2	Y	99	101	0.058	>4:1

This certificate indicates Traceability to standards provided by (NIST) National Institute of Standards and Technology and/or a National Standards Laboratory.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement : (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ± U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min=As Left Nominal(Rounded) – Tolerance; Max= As Left Nominal(Rounded) + Tolerance;

Nicol Rodriguez

Nicol Rodriguez, Quality Manager

Marisa Elms

Marisa Elms, Technical Manager

Note :

Maintaining Accuracy:

In our opinion once calibrated your Lollipop Thermometer should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Lollipop Thermometer change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

Issue Date : 09 Mar 2021

CONTROL COMPANY 12554 Galveston RD Suite B230 Webster TX USA 77598
Phone 281 482-1714 Fax 281 482-9448 sales@control3.com www.traceable.com

Barometric Pressure Determination

Date: 12/08/21

Time: 07:38

Data By: Becker

Reference: http://forecast.weather.gov/MapClick.php?CityName=Orange&state

Reference Barometer ID	**Salem - McNary Field (KSLE)**
Reference Barometer Location	Lat: 44.90493 Lon: 123.00096 Elev: 207
Reference Barometer Other Info.	Last Update on Dec 8 07:20 PDT
Reference Barometer Indication, corrected to sea level	**30.00**
Reference Barometer Reference Elevation	**207**
Reference Barometer Actual Pressure	29.79
Test Barometer Location/Site	**Brooks, OR**
Location/Site Elevation	**184**
Location/Site Barometric Pressure	29.82
Sampling Location Height (above/below site elevation)	**120**
Sampling Location Barometric Pressure	**29.70**

Appendix D.3
Instrumental Test Method QA/QC Data

MONTROSE AIR QUALITY SERVICES

CEMS CONFIGURATION DATA

Project Information

Client / Facility: Cuanta Marion, Inc — Project No.: PROJ-010935

Source / Location: Unit 1 & Unit 2 — Method(s): EPA 3A

Test Dates: 12.8 / 12.7.2021 — Project Manager / Team (initials): Peter B / Sebastian W. Austin G. Preston B. Esche C Leslie W

Analyzers In Service

Please circle all applicable: (O2) (CO2) CO NO_x SO_2 _____ _____ TRS THC

Response Time (seconds): 57 57 ___ ___ ___ ___ ___ ___ ___

Filtration (circle)

Filter Type	In-Stack	(Out-of-Stack)	Sintered	Other _____			
Filter Material	(Glass)	Quartz	Steel	N/A	Other _____			

Sample Probe (circle)

Length	4'	(6')	8'	10'	12'	14'	Other _____		
Material	(Steel)	Glass	Teflon	Titanium	Quartz	Inconel	Other _____		
Heated	Yes	(No)							
Probe Temperature	_____ °F	(N/A)							

Conditioner / Moisture Knock-Out (circle)

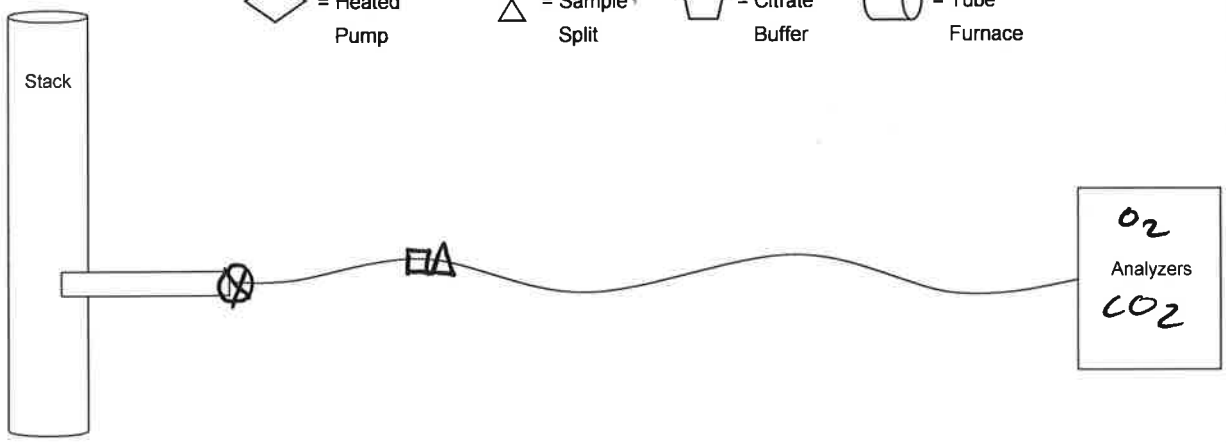
In Use?	(Yes)	No					
Coolant	(Ice and Water)	Anti-Freeze	Electric	Other _____			
Trap Material	(Steel)	Glass	Teflon	Other _____			

Leak Checks

	12.7.21 (Acute) unit 1	12.8.2021 (Chronic) Unit 2
Pre-Test	0.00 cfh @ 25.0 in. Hg	0.00 cfh @ 25.0 in. Hg
Post-Test	0.00 cfh @ 24.0 in. Hg	0.00 cfh @ 25.0 in. Hg
System Flow Rate	4.0 cfh	4.0 cfh
Leak Rate	Post-Test (cfh) / System Flow Rate (cfh) * 100 = 0.00 %	0.00 %

Fill in locations of elements of the CEM system, as applicable

Legend: ⊗ = Cal Tee; □ = Filter; △ = Gas Conditioner; ◇ = Heated Pump; ⧖ = Sample Split; ▽ = Citrate Buffer; ⬭ = Tube Furnace



Upstream of conditioner

Sample Line Length: 10 feet

Sample Line Material: Teflon

Sample Line Temp.: N/A deg. F

Downstream of conditioner

Sample Line Length: 240 feet

Sample Line Material: Teflon

Sample Line Temp.: N/A deg. F

If this information is not accurate for all runs, note exceptions here.

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
525 North Industrial Loop Road
Tooele, UT 84074
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI80E15A0138	Reference Number:	153-401899133-1
Cylinder Number:	EB0063296	Cylinder Volume:	150.9 CF
Laboratory:	124 - Tooele (SAP) - UT	Cylinder Pressure:	2015 PSIG
PGVP Number:	B72020	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Sep 09, 2020

Expiration Date: Sep 09, 2028

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	10.00 %	9.923 %	G1	+/- 0.7% NIST Traceable	09/09/2020
OXYGEN	10.00 %	10.19 %	G1	+/- 0.8% NIST Traceable	09/09/2020
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	13060802	CC411741	13.359 % CARBON DIOXIDE/NITROGEN	0.6%	May 14, 2025
NTRM	98051017	SG9142416BAL	12.05 % OXYGEN/NITROGEN	0.7%	Dec 14, 2023

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Horiba VIA-510 SV4MEUTJ CO2	CO2 NDIR (Dixon)	Sep 03, 2020
Horiba MPA-510 W603MM58 O2	O2 Paramagnetic (Mason)	Aug 13, 2020

Triad Data Available Upon Request

Signature on file
Approved for Release

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
525 North Industrial Loop Road
Tooele, UT 84074
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI54E15A3808	Reference Number:	153-401795443-1
Cylinder Number:	EB0089025	Cylinder Volume:	162.7 CF
Laboratory:	124 - Tooele (SAP) - UT	Cylinder Pressure:	2015 PSIG
PGVP Number:	B72020	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Apr 24, 2020

Expiration Date: Apr 24, 2028

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	23.00 %	22.66 %	G1	+/- 0.6% NIST Traceable	04/24/2020
OXYGEN	23.00 %	23.04 %	G1	+/- 0.5% NIST Traceable	04/24/2020
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	06011806	K012669	23.04 % CARBON DIOXIDE/NITROGEN	0.5%	Jun 27, 2022
NTRM	09061437	CC282504	22.53 % OXYGEN/NITROGEN	0.4%	May 13, 2025

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Horiba VIA-510 SV4MEUTJ CO2	CO2 NDIR (Dixon)	Apr 16, 2020
Horiba MPA-510 W603MM58 O2	O2 Paramagnetic (Mason)	Apr 23, 2020

Triad Data Available Upon Request

Signature on file
Approved for Release

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
525 North Industrial Loop Road
Tooele, UT 84074
Airgas.com

CERTIFICATE OF BATCH ANALYSIS

Grade of Product: CEM-CAL ZERO

Part Number:	NI CZ15A	Reference Number:	153-402123430-1
Cylinder Analyzed:	CC354839	Cylinder Volume:	142.0 CF
Laboratory:	124 - Tooele (SAP) - UT	Cylinder Pressure:	2000 PSIG
Analysis Date:	May 24, 2021	Valve Outlet:	580
Lot Number:	153-402123430-1		

Expiration Date: May 24, 2029

ANALYTICAL RESULTS

Component	Requested Purity		Certified Concentration
NITROGEN	99.9995 %		99.9995 %
CARBON DIOXIDE	< 1.0 PPM	<LDL	0.03 PPM
NOx	< 0.1 PPM	<LDL	0.02 PPM
SO2	< 0.1 PPM	<LDL	0.1 PPM
THC	< 0.1 PPM	<LDL	0.04 PPM
CARBON MONOXIDE	< 0.5 PPM	<LDL	0.03 PPM

Permanent Notes: Airgas certifies that the contents of this cylinder meet the requirements of 40 CFR 72.2

Cylinders in Batch:

AL-056690, ALM-032447, CC145555, CC195483, CC278729, CC324005@, CC330387, CC354839, CC359274, CC437211, CC476262, CC476263, CC476331, CC484024, CC486067, CC487419, CC505121, CC710013, CC733388, CC734799, CC734808, CC741580, EB0086922, EB0091079, EB0095899, EB0122799, EB0122834, SG9140146BAL, SG9146460BAL, SG9197151BAL, XC002298B

Impurities verified against analytical standards traceable to NIST by weight and/or analysis.

Signature on file
Approved for Release

MONTROSE
AIR QUALITY SERVICES

INTERFERENCE RESPONSE TEST

Date of Test: 2/7/2018 Name: Sleight Halley
Analyzer: Type / Model: NO_x, O_2 / CAI 700 Series
Serial Number: 92/ PN # 1712003

Method Referenced: EPA Method 7E

NO_x Results:

Test Gas	Concentration, ppmv or %	Analyzer Output Response ppmv	Interference % of Span (127.0 ppmv)
SO_2	50.59	-0.1	0.08
O_2	21.1	-0.1	0.08
CO	24.21	-0.1	0.08
CO_2	19.43	-0.1	0.08
CH_4	909	-0.1	0.08

A Calibration Cylinder containing 127.0 ppm NO_x was used to calibrate the analyzer.

Results:

Test Gas	Sum of Absolute Differences	Sum of Individual Gases % Interferences	Max Allowable Percent of Span Interference (%)
NO_x	0.5	0.4	2.5

O_2 Results:

Test Gas	Concentration, ppmv or %	Analyzer Output Response %	Interference % of Span (21.1%)
SO_2	50.59	0.01	0.00
CO_2	19.43 / 5.05 O_2	4.97	0.38
CO.	24.21	-0.01	0.00
NO	126.2	-0.01	0.00
NO_2	50.15	0.12	0.57
CH_4	909 / 20.95 O_2	20.95	0.00

A Calibration Cylinder containing 21.1% Oxygen was used to Span Analyzer.

Results:

Test Gas	Sum of Absolute Differences	Sum of Individual Gases % Interferences	Max Allowable Percent of Span Interference (%)
O_2	0.20	0.95	2.5

MONTROSE AIR QUALITY SERVICES

INTERFERENCE RESPONSE TEST

Date of Test: 12/5/17 Name: Brett Sherwood
Analyzer: Type / Model: O2/CO2 CAI 700 HE# 741
Serial Number: 1708026

Method Referenced: EPA Method 7E

O_2 Results:

Test Gas	Concentration, ppmv or %	Analyzer Output Response %	Interference % of Span (21.42 %)
SO_2	490.2	0.01	0.04
CO_2	19.52	0.02	0.09
NO	475.5	-0.01	0.04
NO_2	50.08	0.13	0.61
H_2	40	0.21	0.98
CO	445.3	0.04	0.19

A Calibration Cylinder containing 21.42% oxygen was used to Span Analyzer

Interference Response Results:

Sum of Absolute Differences	Sum of Individual Gases Percent Interferences	Max Allowable Percent of Span Interference (%)
0.42	1.95	2.5

O_2 Results:

Test Gas	Concentration, ppmv or %	Analyzer Output Response %	Interference % of Span (19.52 %)
SO_2	490.2	0.00	0.0
CO_2	4.945	0.00	0.0
NO	475.5	0.00	0.0
NO_2	50.08	0.00	0.0
H_2	40	0.00	0.0
CO	445.3	0.02	0.01

A Calibration Cylinder containing 19.52% carbon dioxide was used to Span Analyzer

Interference Response Results:

Sum of Absolute Differences	Sum of Individual Gases Percent Interferences	Max Allowable Percent of Span Interference (%)
0.02	0.01	2.5

Appendix D.4
Accreditation Information/Certifications

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

CERTIFICATE OF COMPLETION

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

Source Evaluation Society Group 1: *EPA Manual Gas Volume and Flow Measurements and Isokinetic Particulate Sampling Methods*

Certificate Number: 011-2017-10

Tate Strickler, Accreditation Director

DATE OF ISSUE: 8/4/17

DATE OF EXPIRATION: 8/4/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

Source Evaluation Society Group 2: *EPA Manual Gaseous Pollutants Source Sampling Methods*

Certificate Number: 006-2020-46

Tate Strickler, VP – Quality Systems

DATE OF ISSUE: 5/29/20

DATE OF EXPIRATION: 5/28/25

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

Source Evaluation Society Group 3: *EPA Gaseous Pollutants Instrumental Sampling Methods*

Certificate Number: 006-2020-24

Tate Strickler, Accreditation Director

DATE OF ISSUE: 2/12/20

DATE OF EXPIRATION: 2/12/25

MONTROSE ENVIRONMENTAL

Certificate of Completion

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

BAAQMD ST-1B

Certificate Number: 006-2021-47

Tate Strickler, VP – Quality Systems

Date of issue: 12/04/2021

Date of expiration: 12/03/2026

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

CARB Methods 410A, 428, 429 and 430

Certificate Number: 011-2018-20

Tate Strickler, Accreditation Director

DATE OF ISSUE: 11/7/18

DATE OF EXPIRATION: 11/7/23

MONTROSE ENVIRONMENTAL

Certificate of Completion

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

EPA SW846 Methods 0030 & 0031

Certificate Number: 006-2021-45

Tate Strickler, VP – Quality Systems

Date of issue: 10/13/2021

Date of expiration: 10/12/2026

MONTROSE ENVIRONMENTAL

Appendix D.5
Quality Assurance Program Summary and Equipment Calibration Schedule

QUALITY ASSURANCE PROGRAM SUMMARY AND CERTIFICATIONS

Montrose Air Quality Services, LLC (Montrose) ensures the quality and validity of its emission measurement and reporting procedures through a rigorous quality assurance (QA) program. The program is developed and administered by internal QA personnel and encompasses seven major areas:

1. Development and use of an internal QA manual
2. QA reviews of reports, laboratory work, and field testing
3. Equipment calibration and maintenance
4. Chain of custody
5. Continuous training
6. Knowledge of current test methods
7. Audit program

Each of these areas is discussed individually below.

Quality Assurance Manual. Montrose has prepared a QA Manual according to EPA guidelines and ASTM D-7036. The manual serves to document and formalize all of Montrose's QA efforts. The manual is constantly updated, and each employee involved in technical services for emission measurements is required to read, understand its contents, and sign a statement that all work they perform will conform to its practices. The manual includes details on the other seven QA areas discussed below.

QA Reviews. Montrose 's review procedure includes review of each source test report by the QA Manager or equivalent position including data input, calculations and averages, and report text. The laboratory manager or equivalent reviews all laboratory work, and the qualified individual on-site reviews all field work and data sheets.

The most important review is the one that takes place before a test program begins. The QA Manager works with testing personnel to prepare and review test protocols. Test protocol review includes selection of appropriate test procedures, evaluation of any interferences or other restrictions that might preclude use of standard test procedures, and evaluation and/or development of alternate procedures.

Equipment Calibration and Maintenance. The equipment used to conduct the emission measurements is maintained according to the manufacturer's instructions to ensure proper operation. In addition to the maintenance program, calibrations are carried out on each measurement device according to the schedule outlined below. The schedules for maintenance and calibrations are given in Tables A-1 and A-2.

Quality control checks are also conducted in the field for each test program. A partial list of checks made as part of each continuous analyzer system test series is included below as an example of the field QA procedures.

- Sample acquisition and conditioning system leak check
- 3-point analyzer calibrations (all analyzers)
- Complete system calibration check ("dynamic calibration" through entire sample system)

- Periodic analyzer calibration checks are conducted at the start and end of each test run. Any change between pre- and post-test readings are recorded.
- All calibrations are conducted using EPA Protocol gases certified by the manufacturer
- Calibration and continuous analyzer performance data are fully documented, and are included in each source test report

Chain of Custody. Montrose maintains full chain of custody documentation on all samples and data sheets. In addition to normal documentation of changes between field sample custodians, laboratory personnel, and field test personnel, Montrose documents every individual who handles any test component in the field (e.g., probe wash, impinger loading and recovery, filter loading and recovery, etc.).

Samples are stored in a locked area to which only laboratory personnel have access. Neither other Montrose employees nor cleaning crews have keys to this area.

Training. Personnel training is essential to ensure quality testing. Montrose has formal and informal training programs which may include some or all of the following:

1. Attendance at EPA-sponsored training courses
2. A requirement for all technicians to read, understand, and sign Montrose 's QA Manual
3. In-house training and Montrose meetings on a regular basis
4. Maintenance of training records
5. Administration of internal qualified individual (QI) tests for all methods performed
6. Participation in the Qualified Source Testing Individual (QSTI) program administered by the Source Evaluation Society (SES)

Knowledge of Current Test Methods. With the constant updating of standard test methods and the wide variety of emerging test methods, it is essential that any qualified source tester keep abreast of new developments. Montrose subscribes to services which provide updates on EPA reference methods, and on EPA and local agency rules and regulations. Additionally, source test personnel regularly attend and present papers at testing and emission-related seminars and conferences.

Audit Program. Montrose participates in the TNI Stationary Source Audit Sample (SSAS) audit program for all methods for which audit samples are available.

TABLE A-1
SAMPLING INSTRUMENTS AND
EQUIPMENT CALIBRATION SCHEDULE

Instrument Type	Frequency of Calibration[1]	Standard of Comparison or Method of Calibration	Acceptance Limits
Orifice Meter(large)	12 months	Calibrated dry test meter	± 2% of volume measured
Dry Gas Meter	6 months or when repaired	Calibrated dry test meter	± 2% of volume measured
Critical Orifice	6 months	Calibrated dry test meter	± 0.5% of average K’
S-Type Pitot (for use with EPA-type sampling train)	6 months	EPA Method 2	Geometric measurements within method-specified ranges
Vacuum Gauges	12 months	NIST-traceable gauge	≤ 1.0 in Hg difference
Temperature Measurement (thermocouples)	12 months	NBS mercury thermometer or NBS calibrated platinum RTD	±4 °F for <400 °F ± 1.5% for >400 °F
Temperature Readout Devices	6 months	Thermocouple simulator	± 2% full scale reading
Analytical Balance	12 months (check prior to each use)	NIST-traceable weights	± 0.5 mg of stated weight
Probe Nozzles	12 months	Nozzle diameter check	Range <± 0.10 mm for micrometer three measurements
Continuous Analyzers	Every field day, Depends upon use, frequency and performance	As specified by manufacturers’ operating manuals, EPA NBS gases and/or reference methods	Satisfy all limits specified in operating specifications

[1] The tabulated calibration frequencies are minimum standards. In certain instances, calibrations are performed more frequently.

TABLE A-2
EQUIPMENT MAINTENANCE SCHEDULE
Based on Manufacturer's Specifications and Montrose's Experience

Equipment	Performance Requirement	Maintenance Interval[2]	Corrective Action
Pumps	1. Absence of leaks 2. Ability to draw manufacturer required vacuum and flow	6 months	1. Visual inspection 2. Clean 3. Replace worn parts 4. Leak check
Flow Measuring Device	1. Free mechanical movement 2. Absence of malfunction	6 months	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero, span gas	As required by the manufacturer	As recommended by manufacturer
Mobile Van Sampling Systems	Absence of leaks	Depends on nature of use	1. Change filters 2. Leak check 3. Check for system contamination
Sampling Lines	Sample degradation less than 2%	After each test or test series	Blow filtered air through line until dry

[2] The tabulated maintenance intervals are minimum standards. In certain instances, maintenance is performed more frequently.

APPENDIX E
REGULATORY INFORMATION

Appendix E.1
Regulatory Correspondence

Oregon
Kate Brown, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

December 3, 2021

Andrew Willis
Covanta Marion, Inc.
4850 Brooklake Road NE
Brooks, OR 97305

Mr. Willis,

DEQ has reviewed the revised source test plan submitted by Covanta Marion, Inc. (CMI) on November 8, 2021. Based on this review, DEQ approves the source test plan with the following comments.

General Comments

1. DEQ will require that data used for CAO risk assessment purposes result from source tests conducted under typical worst-case conditions that generate the highest emissions. Consistent with DEQ's Source Sampling Manual, it will be imperative to describe in detail the proposed process conditions that generate such "worst-case conditions". Because the facility accepts and burns a wide variety of materials (municipal solid waste, regulated medical waste, industrial solid waste, special waste, liquid), multiple source testing events may be required for DEQ to understand the facility's range of toxic air contaminant emissions and approve a risk assessment that covers the broad range of operational conditions.
2. Only regular operating staff may adjust the production process and emission control parameters during the source performance tests and within two (2) hours prior to the tests. Any operating adjustments made during the source performance tests, which are a result of consultation during the tests with source testing personnel, equipment vendors or consultants, may render the source performance test invalid.
3. DEQ must be notified of any changes in the source test plan and/or the specified methods prior to testing. Significant changes not acknowledged by DEQ could be the basis for invalidating a test run and potentially the entire testing program. Documentation of any deviations must include an evaluation of the impact of the deviation on the test data.
4. It is acceptable to postpone a scheduled test or suspend a test in progress if the discontinuation is due to equipment failure beyond the facility's control, construction delays beyond the facility's control, severe meteorological conditions, and situations that would jeopardize the safety of the testing contractors and/or operators. If the test is underway, the permittee must make every effort to complete the test run. If the test run cannot be finished the sample must still be analyzed and results must be included in the test report unless written permission is received from DEQ stating otherwise. All recoverable test information(process & sample data) must be included in the test report along with a detailed explanation of why the test run could not be finished. Covanta may include discussions regarding the validity of such test runs and DEQ will determine if a run is valid.

   It is unacceptable to postpone or suspend a test run in progress if it is discontinued because the source is not able to comply with an emission limit or verify an emission factor.

Specific Comments

1. Upon review of annual steam data, high-fire testing steam rate must be greater than or equal to 67 klbs/hr.
2. EPA Method 5/26A must be sampled isokinetically if used for analysis of particulate matter (MoO3).
3. Analysis for chloride, total metals, and total halogenated organics must be completed on the liquid that is used for Liquid Direct Injection (LDI).
4. Supplemental natural gas fuel (if used) will be reported as scf.

Approved Deviations

1. DEQ approves the requested EPA Method 0061 deviation to use 0.1M sodium bicarbonate as the impinger solution in place of 0.1M KOH.
2. DEQ approves the requested CARB Method 430 deviation to use a calibrated dry gas meter in place of a rotameter.
3. DEQ approves the requested CARB Method 430 deviation to use a toluene "float" in the DNPH impingers to capture acrolein and to prevent interference from NOx.
4. DEQ approves the requested EPA Method 26A deviation for constant rate sampling only for halogens and hydrogen halides.

Any further modifications and/or alternatives to testing methods or procedures that are implemented to satisfy DEQ testing requirements must receive approval from DEQ prior to their use in the field. Changes not acknowledged by the DEQ could be the basis for invalidating an entire test run and potentially the entire testing program.

The DEQ extension request approval letter dated June 23, 2021 requires source testing to be completed by December 31, 2021. DEQ recognizes the unique challenges this testing pose to your facility and operations, and the results will provide valuable information for completing the risk assessment. If you have any questions or concerns, please contact me directly at (503) 229-5534 or thomas.rhodes@deq.state.or.us. Thank you for your continued efforts with this process.

Sincerely,

Thomas Rhodes

Thomas Rhodes
DEQ CAO Source Test Coordinator

Cc: Jeffery Hahn, Covanta Marion, Inc.
Kirk Little, Covanta Marion, Inc.
Keith Johnson, DEQ
Kenzie Billings, DEQ
Claudia Davis, DEQ
Michael Eisele, DEQ
File

Oregon
Kate Brown, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

December 14, 2021

Andrew Willis
Covanta Marion, Inc.
4850 Brookdale Rd. NE
Brooks, OR 97305

Re: Request for Extension Pursuant to OAR 340-245-0030(3) for Completion of Cleaner Air Oregon Air Toxics Test Program

Mr. Willis,

On December 3, 2021, DEQ approved Covanta Marion, Inc.'s (CMI) source test plan (test plan) for testing scheduled for December 7-9, 2021. This test plan included a requirement that CMI complete testing with minimum liquid injection rates of 3 gallons per minute and 3.75 gallons per minute of leachate from the Marion County monofill during sampling of the stack emissions for high fire and low fire operating scenarios, respectively.

Testing was performed on December 7-8, 2021 while injecting the minimum proposed leachate rate. However, on December 7, 2021, CMI was informed that two pumps used to transfer leachate from the Marion County monofill's onsite storage lagoon into tankers for delivery to CMI had failed. Furthermore, CMI was informed that leachate delivery to the Marion facility would not resume until the new year (2022).

CMI provided a status update of which testing was completed and which testing was pending in the December 8, 2021 extension request. At least two additional days of testing are required to fulfill Cleaner Air Oregon (CAO) source testing requirements. Based on source testing contractor availability, and conditions proposed in the approved testing plan, CMI requested to extend the date by which CAO source testing must be completed to April 30, 2022.

DEQ will allow CMI to complete source testing by no later than March 31, 2022. The source test report for this testing must be submitted within 60 days of the completion of testing. An updated testing schedule to the approved source test plan must be submitted at least 30 days prior to testing.

In regards to the testing that was completed successfully on December 7-8, 2021, a source test report must be submitted to DEQ by February 6, 2022 as required in DEQ's March 11, 2021 letter. DEQ encourages CMI to complete source testing as soon as is feasible. Please contact me directly at 503.229.5247, billings.kenzie@deq.state.or.us if you have any questions regarding this extension.

Sincerely,

Kenzie Billings, P.E.
Air Toxics Project Manager

Cc: Terry Coble, CMI
Jeffrey Hahn, CMI
Kirk Little, CMI
Gary Pierce, CMI
Claudia Davis, DEQ
Mike Eisele, DEQ
J.R. Giska, DEQ
Keith Johnson, DEQ
Thomas Rhodes, DEQ
File

Covanta Marion, Inc.
A Covanta Energy Company
PO Box 9126
4850 Brooklake Road NE
Brooks, OR 97305
Tel: (503) 393-0890
Fax: (503) 393-0890

COVANTA
Powering Today. Protecting Tomorrow.

SOURCE TEST PLAN - COV REPORT NO. 4503
Revised November 24, 2021

Source Information

Facility:	Covanta Marion, Inc. 4850 Brooklake Road, N.E. Brooks, OR 97305
Purpose of Test:	To conduct source sampling for specific reportable Toxic Air Contaminants (TAC) included under OAR 340-245-8020 for the purposes of generating a representative emissions inventory pursuant to OAR 340-245-0040 for the Cleaner Air Oregon (CAO) program.
Person(s) to Contact:	Mr. Kirk Little, Facility Manager (503) 393-0890 Mr. Paul Kantola Director, Environmental Compliance Testing (862) 591-9087

Testing Information

Procedure:	Testing two (2) municipal solid waste-fired boilers for specific toxic air contaminants.
Proposed Test Dates:	December 7 – 9, 2021

Certification Statement

Statement of Certification: *Based on information and belief formed after reasonable inquiry, the statements and information in this document and any attachments are true, accurate and complete. I also certify that all statements made concerning compliance, which are based on monitoring required by the permit but not required to be submitted to the Department, are true, accurate and complete based on information and belief formed after reasonable inquiry.*

Kirk Little	Facility Manager
Name of Designated Responsible Official	Title of Responsible Official
Signature of Responsible Official	Date (mm/dd/yy)

Testing Firm Information

Company: Montrose Air Quality Services, LLC
Address: 13585 NE Whitaker Way Portland, OR 97230
Project Manager: Peter Becker
Email: pbecker@montrose-env.com
Phone Number: 330-285-6884
Field Chemist: Esha Chetty
Report Writer: Andy Vella

Lab Information

Emission Parameter	**Analytical Lab**
Hydrogen Chloride (HCl), Hydrogen Fluoride (HF), Hydrogen Bromide (HBr), Chloride (Cl_2), and Bromide (Br)	Enthalpy Analytical, Durham, NC (Montrose)
Multimetals (MMTL), plus Al, Fe, Mo, K and V	Enthalpy Analytical, Durham, NC (Montrose)
Fraction of Mo that is MoO_3	MVA Scientific, Duluth GA
Dioxins/Furans (PCDD/PCDF), Polychlorinated Biphenyls (PCB), Chlorobenzene and Chlorophenols	Vista Analytical, El Dorado Hills CA (Montrose) Vista Analytical, El Dorado Hills CA (Montrose) Enthalpy Analytical, Wilmington and Durham NC (Montrose)
Polycyclic Aromatic Hydrocarbons (PAH)	Vista Analytical, El Dorado Hills CA (Montrose)
Hexavalent Chromium	Chester LabNet, Tigard, OR
Ammonia	Montrose Air Quality Services, Antioch, CA
Formaldehyde, acetaldehyde, acrolein	Atmospheric Analysis & Consulting, Ventura, CA
Volatile Organic Compounds (VOC) and VOC-derivatives	Eurofins Test America, Knoxville TN

TABLE OF CONTENTS

1.0 INTRODUCTION

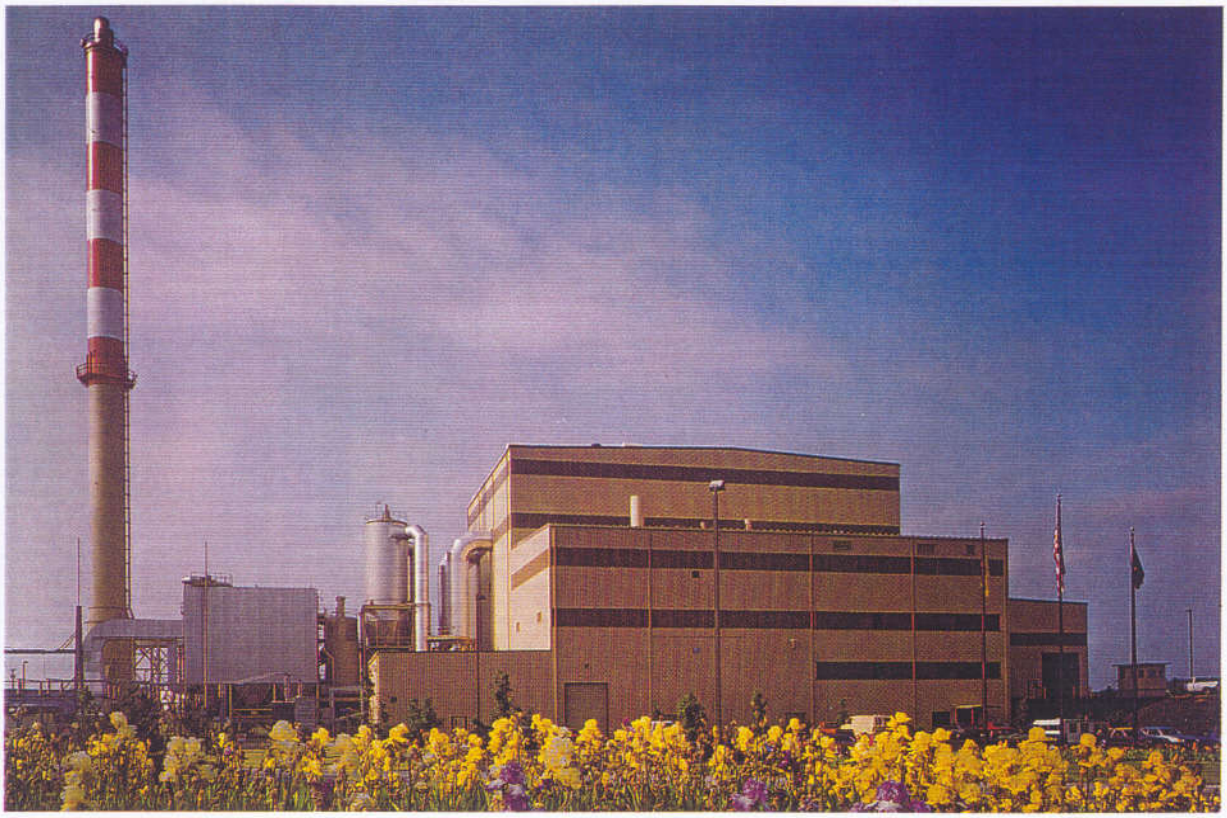
A contractor for Covanta Marion, Inc. (CMI) will test various air emissions of the CMI Municipal Solid Energy-From-Waste Facility. This testing is being conducted to fulfill requirements of the Cleaner Air Oregon (CAO) program pursuant to OAR 340-245-0040(1). Results from this testing will be used for the purpose of CAO compliance and not for demonstrating compliance with Covanta's Title V source testing requirements as applicable in conditions 35 through 44 of CMI's Title V permit. The Oregon Department of Environmental Quality (DEQ) Source Sampling Manual identifies specific conditions that must be met for compliance testing. It should be noted that not all conditions will be met for the purpose of the CAO testing. The test is scheduled for the week of December 5, 2021. Source testing for CAO may be performed on either a single municipal waste combustor (MWC) or both MWC's. It is presumed that test results obtained from one unit will be representative of the other unit.

During acute toxicity testing for metal and acid gases at a reduced load, every effort will be made to replicate a regulated medical waste (RMW) processing rate that is representative of a daily maximum of approximately 75 tons, which is slightly more than 3 tons/hr. CMI will not deviate from operating conditions that would risk non-compliance with the provisions of our Title V permit. Should such an event arise, the priority will be to mitigate the environmental upset, which may require altering operating conditions, such as utilizing auxiliary burners as necessary to stabilize combustion conditions. Individual test runs may or may not continue depending on the nature of the event. All such instances will be documented and reported to include at a minimum, a description of the event, what operational changes were made (if any), and whether testing was paused, continued or terminated.

2.0 DESCRIPTION OF OPERATIONS

Covanta Marion, Inc.

Brooks, Oregon



The Marion County Solid Waste-to-Energy Facility began commercial operation in March 1987, servicing the solid waste management needs of the more than 270,000 people of Marion County. The facility processes 550 tons per day of solid waste, which generates up to 13.1 megawatts of renewable energy that is sold to Portland General Electric. The Marion facility was the first mass burn waterwall resource recovery facility burning municipal solid waste in the United States to use dry flue gas scrubbers and fabric filter baghouses to control acid gases and particulates. In addition to municipal solid waste, Marion processes about 90 tons per month of supplemental waste including non-hazardous medical waste. The facility is located in Brooks, a small farming community about four miles north of Salem, the state capital, and 40 miles south of Portland.

The Marion County Solid Waste-to-Energy Facility

COVANTA ENERGY

Covanta Marion, Inc.

Recycling Waste Into Energy

The facility's mass burn combustion system incorporates the technology of German-based Martin GmbH. Waste is combusted at furnace temperatures exceeding 1,800 degrees Fahrenheit and reduced to an inert ash residue which is approximately 10% of its original volume; combustion ash is disposed of in a specially lined ash monofill which is owned and operated by the County and located about 10 miles north of the facility. Before leaving the facility, combustion air is directed through technologically advanced air pollution control equipment, including dry flue gas scrubbers and fabric filter baghouses.

An Integrated System

The Marion County Solid Waste-to-Energy Facility is the cornerstone of the County's integrated waste management system. In addition to converting waste into energy, the County provides curbside pick-up of recyclable materials such as metals, glass and newspaper. The County also runs a drop-off program for collection of yard waste; these organic materials are then composted and used in agricultural applications. Ferrous metal recovered from combustion ash is also a major contributor to the County's recycling efforts. A unique feature of the County's integrated system is its state-of-the-art ash monofill and leachate system. Leachate from the ash monofill is treated through a vacuum distillation process and clean drinking-quality water is discharged.

The Marion County Solid Waste-to-Energy Facility is located in Brooks, about 4 miles north of Salem. For information or to arrange a tour, please call 503-393-0890.

Facility Specifications

Rated Refuse Combustion Capacity
550 tons per day

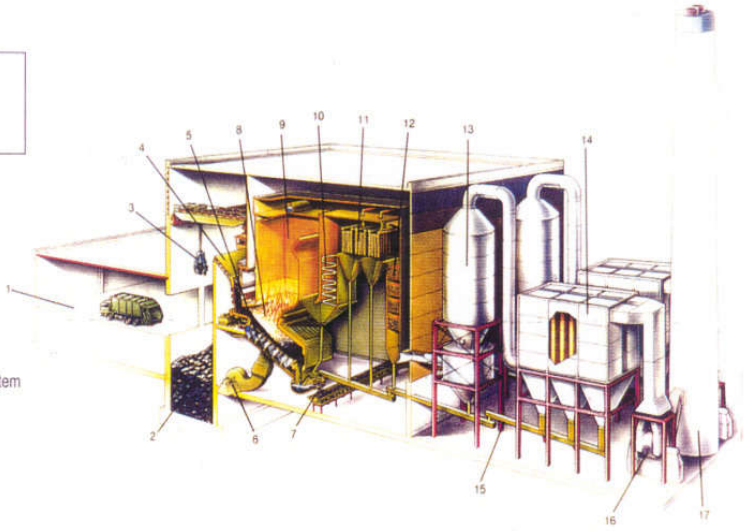
Unit Design
Two 275 ton-per-day waterwall furnaces

Guaranteed Throughput
170,000 tons per year

Guaranteed Waste Delivery
145,000 tons per year

Energy Generation at Rated Capacity
Up to 13.1 MW, sold to Portland General Electric Company

A Typical COVANTA Waste-to-Energy Facility



1. Tipping Floor
2. Refuse Holding Pit
3. Grapple Feed Chute
4. Feed Chute
5. Martin Stoker Grate
6. Combustion Air Fan
7. Martin Ash Discharger
8. Combustion Chamber
9. Radiant Zone (furnace)
10. Convection Zone
11. Superheater
12. Economizer
13. Dry Gas Scrubber
14. Baghouse
15. Fly Ash Handling System
16. Induced Draft Air Fan
17. Stack

Refuse collection trucks are weighed at the scalehouse and monitored for safety. Once cleared, they enter the tipping building and dump their waste into the storage pit. An overhead crane mixes the waste in the pit and lifts the waste up into a feed chute leading to the furnace. From the feed chute, waste is pushed by hydraulic ram feeders onto a stoker grate. The MARTIN Reverse-Reciprocating Stoker is sloped downward and is composed of alternate rows of fixed and moving grate bars. The grate bars push upward against the natural downward movement of the waste bed. This constant movement ensures that the burning waste is continually agitated and pushed back, thus serving as underfire for freshly-fed waste. A forced draft fan supplies the primary combustion air underneath the grate. In addition, overfire air is injected through the front and rear walls of the furnace.

Inside the steel tubes that form the furnace walls and the boiler, heat from the combustion process converts water to steam. The superheater further heats the steam before it is sent to a turbine generator to produce electricity. After passing through the boiler sections, the hot combustion gases are used to preheat boiler feedwater in the economizer.

While the combustion gases move through the boiler, the bottom ash slowly makes its way to the end of the grate where it falls into the water quench trough of the Martin Ash Discharger.

From the boiler, the cooled gases enter the advanced air pollution control system. Using the lime slurry, the dry scrubber neutralizes any acid-forming gases, such as sulfur oxides and hydrogen chloride.

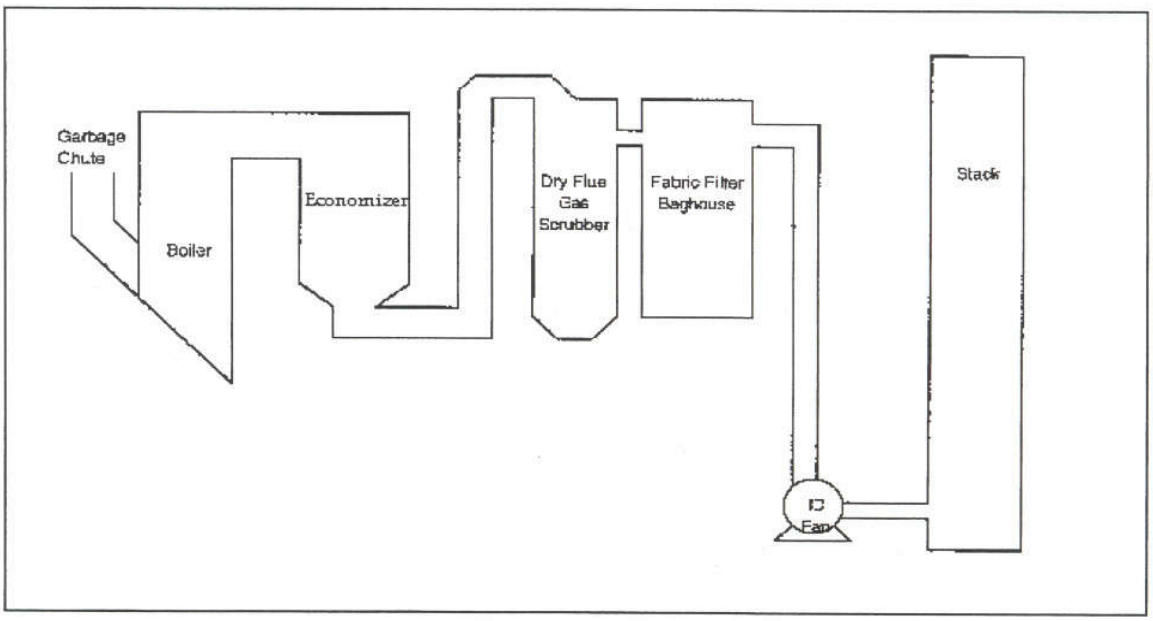
As the gas stream travels through these filter devices, more than 99 percent of particulate matter is removed. Captured fly ash particles fall into hoppers and are transported by an enclosed conveyor system to the Martin Ash Discharger where they are wetted to prevent dust, and mixed with the bottom ash from the grate. The ash residue is then conveyed to an enclosed building where it is loaded into trucks and taken to a landfill designed to protect against groundwater contamination. Ash residue from the furnace can be processed for removal of recyclable scrap iron.

All aspects of the plant's operation are monitored from the central control room 24 hours a day, seven days a week, 365 days a year.

COVANTA ENERGY

Covanta Marion, Inc.
4850 Brooklake Road,
Brooks, OR 97305
503-393-0890

2.2 Flow Diagram of Process



The Marion County Solid Waste-to-Energy Facility is located in Brooks, Oregon. The facility consists of two identical municipal solid waste-fired boilers of Martin GmbH Stoker Combustion System design. The combustors each have a capacity greater than 250 tons per day. The facility produces up to 13.1 MW of electricity daily. Each MWC unit exhausts through a common flue stack. Air pollution equipment for each independent train includes semi-dry flue gas scrubbers for acid gas control, fabric filter for particulate removal, selective non-catalytic reduction (SNCR) for control of nitrogen oxides and dry activated carbon injection for mercury emission controls. Each unit is also equipped with a continuous emission monitoring system to provide feedback on the effectiveness of the air pollution control (APC) equipment.

2.3 OPERATING CONDITIONS

CMI will conduct testing under two distinct operating scenarios which include:

- a low fire/reduced steam load (80-90% of design steam load) to provide results used in calculation of acute health risk, and
- a high fire/increased steam load (90-110% of design steam load) to characterize chronic health risk.

Design steam load capacity is approximately 67 Klbs/hr. A summary detailing which test methods will be conducted under each scenario can be found in Sections 3.1 and 3.2. CMI will test under 'worst case' conditions (refer to operating scenarios referenced above) for the Cleaner Air Oregon required testing, as described in detail in Section 2.9 of the DEQ Source Sampling Manual, i.e., both the low fire/reduced steam load and the high fire/increased steam load operating scenarios.

Since the "high fire/increased steam load" operating scenario includes a significant portion of the operating hours in a year for each boiler, the testing program found in Section 3.1 will adequately address the chronic cancer and non-cancer health effects in an HRA prepared using those test results, which will also include the startup and shutdown dioxin/furan and HCl results obtained during ODEQ approved testing at CMI earlier this year.

The testing of those toxic air contaminants that typically comprise the majority of the chronic cancer and non-cancer health effects in an HRA will include: PCDD/F's, PCB's, PAH's, VOC's, Metals, Acid gases (including all halides and halogens), Ammonia, Formaldehyde and other aldehydes, Chlorophenols and Chlorobenzenes. These will be tested as discussed in Section 3.1.

The "low fire/reduced steam load" scenario, which represents the maximum "worst case" boiler operating condition, would only occur in a few hours of operation in any given year. Only those components of an HRA that could affect an acute health risk are included in the testing program found in Section 3.2.

Thus, for the testing in Section 3.2, the acid gases (including all halides and halogens) and metals, which typically comprise more than 95% of the acute health risk in an HRA, will be tested as shown in Section 3.2.

The fuel processed during testing will primarily consist of municipal solid waste and other approved wastes (e.g., regulated medical waste, industrial solid wastes). CMI will track the amounts of regulated medical waste and industrial waste that is received during each testing day. CMI will not operate under any process state that may jeopardize compliance with any condition of the Title V permit. In the event that the Continuous Emissions Monitoring System (CEMS), Continuous Opacity Monitoring System (COMS), or other Parametric Monitoring System indicate that an emission or air pollution control device parameter is at or near a permitted limit, CMI will adjust operating conditions accordingly in order to ensure continuous compliance.

The two operating conditions for the two scenarios will include:

a) High fire
   I. Minimum steam load (Klbs/hr) ≥ 90% of design or ~60 Klbs/hr
   II. Minimum rate of regulated medical waste per unit (tons/hr) = 1.5
   III. Minimum rate of liquid direct injection per unit (gal/hr) = 180
   IV. Wastes deliveries during the days of testing will be quantified and listed in the source test report.

b) Low Fire
   I. Maximum steam load (Klbs/hr) ≤ 90% of design or ~60 Klbs
   II. Minimum rate of regulated medical waste (tons/hr) = 1.5
   III. Minimum rate of liquid direct injection (gal/hr) = 225
   IV. Waste deliveries during the days of testing will be quantified and listed in the source test report.

3.0 SOURCE TEST INFORMATION

3.0 SOURCE TEST INFORMATION

3.1 EMISSION TEST PARAMETERS – CHRONIC TOXICITY TESTING SCENARIO

Emission Parameter	Sampling Method	Location	Unit No.	Replicates	Approximate Sampling Time (Min)
Dioxins/Furans (PCDD/PCDF), Polychlorinated Biphenyls (PCB)	U.S. EPA Method 23	Stack	1	1, 2, 3	240
Chlorobenzenes, and Chlorophenols	U.S. EPA SW-846 0023	Stack	1	1, 2, 3	240
Polycyclic Aromatic Hydrocarbons (PAH)	CARB Method 429	Stack	1	1, 2, 3	240
Volatile Organic Compounds (VOC) and VOC-derivatives	U.S. EPA SW-846 0031	Stack	1	1, 2, 3	40x3 per run
Formaldehyde, acetaldehyde, acrolein	CARB 430	Stack	2	1, 2, 3	60
Ammonia	BAAQMD ST-1B	Stack	2	1, 2, 3	60
Multimetals (MMTL), plus Al, Fe, Mo, K and V (1)	U.S. EPA Method 29	Stack	2	1, 2, 3	120
Hexavalent Chromium (2)	U.S. EPA SW-846 0061	Stack	2	1, 2, 3	120
Hydrogen Chloride (HCl), Hydrogen Fluoride (HF), Hydrogen Bromide (HBr), Chloride (Cl_2), and Bromide (Br)	U.S. EPA Method 26A (Modified)	Stack	1	1, 2, 3	60

(1) The Molybdenum compounds on the filter will be analyzed using scanning electron microscopy with energy dispersive X-ray spectrometry from the filter used in EPA Method 29.

(2) Hexavalent chromium testing will follow EPA SW-846 Method 0061 procedures, with substitution for the reagent used in CARB 425 $NaHCO_3$) for improved pH control and lower detection limit.

3.2 EMISSION TEST PARAMETERS – ACUTE TOXICITY TESTING SCENARIO (1)

Emission Parameter	Sampling Method	Location	Unit No.	Replicates	Approximate Sampling Time (Min)
Multimetals (MMTL), plus Al, Fe, Mo, K, and V (2)	U.S. EPA Method 29	Stack	2	1, 2, 3	120
Hydrogen Chloride (HCl), Hydrogen Fluoride (HF),	U.S. EPA Method 5/Method 26A (Modified)	Stack	2	1, 2, 3	60 (minimum)

(1) Conditions to include operating at 80-90% of designed load (55-60 Klbs/hr) and an RMW feed rate of approximately 3 tons per hour.

(2) The Molybdenum compounds on the filter will be analyzed using scanning electron microscopy with energy dispersive X-ray spectrometry from the filter used in EPA Method 5/26A. Sampling time may increase to meet the Minimum Detection Limit of the method and analysis.

3.3 ESTIMATED DETECTION LIMITS FOR TOXIC AIR CONTAMINANTS TO BE TESTED

Note: Analytical and in stack detection limits have been provided as estimates only. The analytical detection limits are the best available pre-test estimates from the analytical laboratories. The in-stack detection limit estimates are based on the expected total sampled volume of stack gas for each test method. Actual analytical and in stack detection limits will be affected by the actual volumes of stack gas and the contents of each sample matrix, so may not exactly match these estimated values. Montrose will work up to the test dates to achieve the lowest DL's from all available laboratories and if another laboratory is found with lower DL's, for example for chlorobenzenes and chlorophenols, DEQ-CAO will be notified.

3.3.1 Polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (EPA Method 23)

CAS Number	Compound	Analytical Det. Limit, pg/sample	In Stack Det Limit, ng/dscm
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3	8.8E-4
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4	1.2e-3
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5	1.5E-3
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5	1.5E-3
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5	1.5E-3
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3	8.8E-4
3268-87-9	Octachlorodibenzo-p-dioxin (OCDD)	9	2.7E-3
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran (TcDF)	3	8.8E-4
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3	8.8E-4
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3	8.8E-4
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3	8.8E-4
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3	8.8E-4
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3	8.8E-4
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3	8.8E-4
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3	8.8E-4
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4	1.2e-3
39001-02-0	Octachlorodibenzofuran (OCDF)	9	2.7E-3

Note: The estimated detection limits shown are from Enthalpy Analytical, Wilmington NC. Actual values will vary depending on the characteristics of each sample.

3.3.2 Polychlorinated biphenyls (EPA Method 23)

CAS Number	Compound	Analytical Det. Limit, pg/sample	In Stack Det Limit ng/dscm
34883-43-7	PCB-8 [2,4'-dichlorobiphenyl]	3	8.8E-4
37680-65-2	PCB 18 [2,2',5-trichlorobiphenyl]	3	8.8E-4
7012-37-5	PCB-28 [2,4,4'-trichlorobiphenyl]	3	8.8E-4
41464-39-5	PCB-44 [2,2',3,5'-tetrachlorobiphenyl]	3	8.8E-4
35693-99-3	PCB-52 [2,2',5,5'-tetrachlorobiphenyl]	3	8.8E-4
32598-10-0	PCB-66 [2,3',4,4'-tetrachlorobiphenyl]	3	8.8E-4
32598-13-3	PCB 77 [3,3',4,4'-tetrachlorobiphenyl]	3	8.8E-4
70362-50-4	PCB 81 [3,4,4',5-tetrachlorobiphenyl]	3	8.8E-4
37680-73-2	PCB-101 [2,2',4,5,5'-pentachlorobiphenyl]	3	8.8E-4
32598-14-4	PCB 105 [2,3,3',4,4'-pentachlorobiphenyl]	3	8.8E-4
74472-37-0	PCB 114 [2,3,4,4',5-pentachlorobiphenyl]	3	8.8E-4
31508-00-6	PCB 118 [2,3',4,4',5-pentachlorobiphenyl]	3	8.8E-4
65510-44-3	PCB 123 [2,3',4,4',5'-pentachlorobiphenyl]	3	8.8E-4
57465-28-8	PCB 126 [3,3',4,4',5-pentachlorobiphenyl]	3	8.8E-4
38380-07-3	PCB-128 [2,2',3,3',4,4'-hexachlorobiphenyl]	3	8.8E-4
35065-28-2	PCB-138 [2,2',3,4,4',5'-hexachlorobiphenyl]	3	8.8E-4
35065-27-1	PCB-153 [2,2',4,4',5,5'-hexachlorobiphenyl]	3	8.8E-4
38380-08-4	PCB 156 [2,3,3',4,4',5-hexachlorobiphenyl]	3	8.8E-4
69782-90-7	PCB 157 [2,3,3',4,4',5'-hexachlorobiphenyl]	3	8.8E-4
52663-72-6	PCB 167 [2,3',4,4',5,5'-hexachlorobiphenyl]	3	8.8E-4
32774-16-6	PCB 169 [3,3',4,4',5,5'-hexachlorobiphenyl]	3	8.8E-4
35065-30-6	PCB-170 [2,2',3,3',4,4',5-heptachlorobiphenyl]	3	8.8E-4
35065-29-3	PCB-180 [2,2',3,4,4',5,5'-heptachlorobiphenyl]	3	8.8E-4
52663-68-0	PCB-187 [2,2',3,4',5,5',6-heptachlorobiphenyl]	3	8.8E-4
39635-31-9	PCB 189 [2,3,3',4,4',5,5'-heptachlorobiphenyl]	3	8.8E-4
52663-78-2	PCB-195 [2,2',3,3',4,4',5,6-octachlorobiphenyl]	3	8.8E-4
40186-72-9	PCB-206 [2,2',3,3',4,4',5,5',6-nonachlorobiphenyl]	3	8.8E-4
2051-24-3	PCB-209 [2,2'3,3',4,4',5,5',6,6 '-decachlorobiphenyl]	3	8.8E-4

Note: The estimated detection limits shown are from Enthalpy Analytical, Wilmington NC. Actual values will vary (e.g. from 2 to 6 pg/sample) depending on the characteristics of each sample.

3.3.3 Chlorobenzenes and Chlorophenols (SW-846 Method 0023)

CAS Number	Compound	Analytical Det Limit µg/sample	In Stack Det Limit ng/dscm
108-90-7	Chlorobenzene	2.5	740
(various)	Chlorophenols (various)	2.5	740

Note: The estimated detection limits shown are from Enthalpy Analytical, Wilmington and Durham NC. These are the best estimates available as of writing this test plan; lower detection may be possible. Actual values will vary depending on the characteristics of each sample.

3.3.4 Polycyclic aromatic hydrocarbons (CARB Method 429)

CAS Number	Compound	Analytical Detection Limit, ng per sample	In Stack Detection Limit, ng/dscm
91-20-3	Naphthalene	2620	514
91-57-6	2-Methylnaphthalene	11.0	2.16
83-32-9	Acenaphthene	443	86.9
208-96-8	Acenaphthylene	494	96.9
86-73-7	Fluorene	167	32.8
85-01-8	Phenanthrene	90.3	17.7
120-12-7	Anthracene	118	23.2
206-44-0	Fluoranthene	3.68	0.72
129-00-0	Pyrene	3.34	0.66
56-55-3	Benzo(a)anthracene	2.08	0.41
218-01-9	Chrysene	2.09	0.41
205-99-2	Benzo(b)fluoranthene	1.53	0.30
207-08-9	Benzo(k)fluoranthene	1.55	0.30
192-97-2	Benzo(e)pyrene	1.63	0.32
50-32-8	Benzo(a)pyrene	2.39	0.47
198-55-0	Perylene	2.76	0.54
193-39-5	Indeno(1,2,3-cd)pyrene	2.58	0.51
53-70-3	Dibenz(a,h)anthracene	2.79	0.55
191-24-2	Benzo(g,h,i)perylene	2.72	0.53

Note: The detection limits shown are from Vista Analytical- Enthalpy, El Dorado Hills, CA

3.3.5 Volatile organic compounds (SW-846 Method 0031)

CAS Number	Compound	Analytical Detection Limit, µg	In Stack Detection Limit, ng/dscm
67-64-1	Acetone	0.284	1.42E-02
71-43-2	Benzene	0.0133	6.65E-04
108-86-1	Bromobenzene	0.0083	4.15E-04
74-97-5	Bromochloromethane	0.0191	9.55E-04

75-27-4	Bromodichloromethane	0.0113	5.65E-04
75-25-2	Bromoform	0.0134	6.70E-04
74-83-9	Bromomethane	0.059	2.95E-03
78-93-3	2-Butanone (MEK)	0.144	7.20E-03
104-51-8	n-Butylbenzene	0.028	1.40E-03
135-98-8	sec-Butylbenzene	0.023	1.15E-03
98-06-6	tert-Butylbenzene	0.0151	7.55E-04
75-15-0	Carbon disulfide	0.022	1.10E-03
56-23-5	Carbon tetrachloride	0.0314	1.57E-03
108-90-7	Chlorobenzene	0.0065	3.25E-04
124-48-1	Chlorodibromomethane	0.0167	8.35E-04
75-00-3	Chloroethane	0.0401	2.01E-03
67-66-3	Chloroform	0.0175	8.75E-04
74-87-3	Chloromethane	0.0515	2.58E-03
95-49-8	2-Chlorotoluene	0.0133	6.65E-04
106-43-4	4-Chlorotoluene	0.0154	7.70E-04
96-12-8	1,2-Dibromo-3-Chloropropane	0.0316	1.58E-03
106-93-4	1,2-Dibromoethane (EDB)	0.0183	9.15E-04
74-95-3	Dibromomethane	0.0152	7.60E-04
95-50-1	1,2-Dichlorobenzene	0.0159	7.95E-04
541-73-1	1,3-Dichlorobenzene	0.0139	6.95E-04
106-46-7	1,4-Dichlorobenzene	0.0155	7.75E-04
75-71-8	Dichlorodifluoromethane	0.0452	2.26E-03
75-34-3	1,1-Dichloroethane	0.0122	6.10E-04
107-06-2	1,2-Dichloroethane	0.0113	5.65E-04
75-35-4	1,1-Dichloroethene	0.0153	7.65E-04
156-59-2	cis-1,2-Dichloroethene	0.011	5.50E-04
156-60-5	trans-1,2-Dichloroethene	0.0111	5.55E-04
78-87-5	1,2-Dichloropropane	0.0123	6.15E-04
142-28-9	1,3-Dichloropropane	0.0102	5.10E-04
594-20-7	2,2-Dichloropropane	0.0123	6.15E-04
563-58-6	1,1-Dichloropropene	0.0121	6.05E-04
10061-01-5	cis-1,3-Dichloropropene	0.0088	4.40E-04
10061-02-6	trans-1,3-Dichloropropene	0.0144	7.20E-04
100-41-4	Ethylbenzene	0.016	8.00E-04
87-68-3	Hexachlorobutadiene	0.03	1.50E-03
591-78-6	2-Hexanone	0.1065	5.33E-03
98-82-8	Isopropylbenzene	0.019	9.50E-04
99-87-6	4-Isopropyltoluene	0.022	1.10E-03
75-09-2	Methylene Chloride	0.166	8.30E-03
108-10-1	4-Methyl-2-pentanone (MIBK)	0.1041	5.21E-03
91-20-3	Naphthalene	0.0899	4.50E-03
103-65-1	N-Propylbenzene	0.0202	1.01E-03

100-42-5	Styrene	0.0121	6.05E-04
630-20-6	1,1,1,2-Tetrachloroethane	0.0092	4.60E-04
79-34-5	1,1,2,2-Tetrachloroethane	0.0324	1.62E-03
127-18-4	Tetrachloroethene	0.0105	5.25E-04
108-88-3	Toluene	0.0307	1.54E-03
87-61-6	1,2,3-Trichlorobenzene	0.0452	2.26E-03
120-82-1	1,2,4-Trichlorobenzene	0.0365	1.83E-03
71-55-6	1,1,1-Trichloroethane	0.0168	8.40E-04
79-00-5	1,1,2-Trichloroethane	0.0163	8.15E-04
79-01-6	Trichloroethene	0.0118	5.90E-04
75-69-4	Trichlorofluoromethane	0.0363	1.82E-03
96-18-4	1,2,3-Trichloropropane	0.0374	1.87E-03
95-63-6	1,2,4-Trimethylbenzene	0.0181	9.05E-04
108-67-8	1,3,5-Trimethylbenzene	0.012	6.00E-04
75-01-4	Vinyl chloride	0.0294	1.47E-03
95-47-6	o-Xylene	0.0159	7.95E-04
179601-23-1	m,p-Xylene	0.016	8.00E-04

Note: The detection limits shown are from Eurofins TestAmerica, Knoxville, TN

3.3.6 Aldehydes (CARB Method 430)

CAS Number	Compound	Analytical Detection Limit, µg per sample	In Stack Detection Limit, µg/dscm
50-00-0	Formaldehyde	0.25	8.9
75-07-0	Acetaldehyde	0.25	8.9
107-02-8	Acrolein	0.25	8.9

Note: The detection limits shown are from Atmospheric Analysis & Consulting, Ventura, CA

3.3.7 Ammonia (BAAQMD Method ST-1B)

CAS Number	Compound	Analytical Detection Limit, µg per sample	In Stack Detection Limit, µg/dscm
7664-41-7	Ammonia	100	147

Note: The detection limits shown are from Atmospheric Analysis & Consulting, Ventura, CA

3.3.8 Metals (EPA Method 29)

CAS Number	Compound	Analytical Detection Limit	In Stack Detection Limit
7429-90-5	Aluminum	15.00 µg/L	3.97 µg/dscm
7440-36-0	Antimony	5.00 µg/L	1.32 µg/dscm
7440-38-2	Arsenic	7.00 µg/L	1.85 µg/dscm
7440-39-3	Barium	0.50 µg/L	0.05 µg/dscm
7440-41-7	Beryllium	0.20 µg/L	0.13 µg/dscm

7440-43-9	Cadmium	0.40 µg/L	0.11 µg/dscm
7440-47-3	Total Chromium	0.80 µg/L	0.21 µg/dscm
7440-48-4	Cobalt	0.50 µg/L	0.13 µg/dscm
7440-50-8	Copper	5.00 µg/L	1.32 µg/dscm
7439-89-6	Iron	7.00 µg/L	1.85 µg/dscm
7439-92-1	Lead	5.00 µg/L	1.32 µg/dscm
7439-96-5	Manganese	0.30 µg/L	0.08 µg/dscm
7439-97-6	Mercury	0.007 µg/L	0.00µg/dscm
1313-27-5	Total Molybdenum	2.00 µg/L	0.53 µg/dscm
7440-02-0	Nickel	3.00 µg/L	0.79 µg/dscm
7723-14-0	Phosphorus	20.00 µg/L	5.30 µg/dscm
7440-09-7	Potassium	6.00 µg/L	1.59 µg/dscm
7782-49-2	Selenium	15.00 µg/L	3.97 µg/dscm
7440-22-4	Silver	2.00 µg/L	0.53 µg/dscm
7440-28-0	Thallium	10.00 µg/L	2.65 µg/dscm
7440-62-2	Vanadium	1.00 µg/L	0.26 µg/dscm
7440-66-6	Zinc	3.00 µg/L	0.79 µg/dscm

Note: The detection limits shown are from Enthalpy Analytical, Durham, NC. Actual values may vary depending on the characteristics of each sample.

3.3.9 Hexavalent Chromium. (SW-846 Method 0061)

CAS Number	Compound	Analytical Detection Limit	In Stack Detection Limit
--	Hexavalent Chromium	0.02 µg/sample	1.21E-2 µg/dscm

Note: The detection limits shown are from Chester Labnet, Tigard, OR

3.3.10 Hydrogen chloride, halides, and halogens. (EPA Method 26A)

CAS Number	Compound	Analytical Detection Limit	In Stack Detection Limit
7726-95-6	Bromine	200 µg/sample	59 µg/dscm
7782-50-5	Chlorine	200 µg/sample	59 µg/dscm
7647-01-0	Hydrochloric acid	200 µg/sample	59 µg/dscm
10035-10-6	Hydrogen bromide	100 µg/sample	29 µg/dscm
7664-39-3	Hydrogen fluoride	100 µg/sample	29 µg/dscm

Note: The detection limits shown are from Enthalpy Analytical, Durham, NC

4.0 SCHEDULE OF ACTIVITIES

4.0 SCHEDULE OF ACTIVITIES [1]

Day	Unit/Location	Parameter	Reference Method	Replicates	Sampling Time (Minutes)
0 – Dec 6	----------	Setup			
1 – Dec 7					
	1 Stack	HCl, HF, HBr, Cl2 & Br2	EPA 26A (Modified)	1, 2, 3	60
	1 Stack	SLO-SMVOC and SMVOC [4]	EPA SW-846 0031	1, 2, 3	120
	2 Stack	MMTL, plus Al, Fe, Mo, K, and V [2]	EPA 29	1, 2, 3	120
	2 Stack	Chromium VI [3]	EPA SW-846 0061	1, 2, 3	120
2 – Dec 8					
	2 Stack	Ammonia	BAAQMD ST1B	1, 2, 3	60
	2 Stack	Formaldehyde, acetaldehyde, acrolein	CARB 430	1, 2, 3	60
	2 Stack	Chlorobenzene, Chlorophenol	EPA SW-846 0023a	1, 2	240
	1 Stack	PCDD/F, PCB	EPA 23	1, 2	240
	1 Stack	PAH	CARB 429	1, 2	240
3 – Dec 9					
	1 Stack	PCDD/F, PCB	EPA 23	3	240
	1 Stack	PAH	CARB 429	3	240
	1 Stack *	Chlorobenzene, Chlorophenol	EPA SW-846 0023a	3 *	240
	2 Stack [5]	MMTL, plus Al, Fe, Mo and V	EPA 29	1, 2, 3	120
	2 Stack [5]	HCl, HF	EPA 26A (Modified)	1, 2, 3	60 (minimum)

* Runs 1 and 2 on Stack 2, then Run 3 on Stack 1 after completion of the EPA 23 and CARB 429 test runs.

[1] Schedule may be changed during testing to accommodate site conditions and/or contractor availability. Every effort will be made to keep CAO/ODEQ informed of any schedule changes.

[2] Multi-metals include target metals for Method 29. Additional metals not listed in Method 29 but referenced in OAR 340-245-8020 to be analyzed include aluminum, iron, potassium, and vanadium. The Molybdenum compounds on the filter will be analyzed using scanning electron microscopy with energy dispersive X-ray spectrometry.

[3] Hexavalent chromium testing will follow EPA SW-846 Method 0061 procedures, with substitution of $NaHCO_3$ solution in place of the KOH solution cited in the Method.

[4] SLO-VOC will test for bromomethane, chloroethane, vinyl bromide, and vinyl chloride.

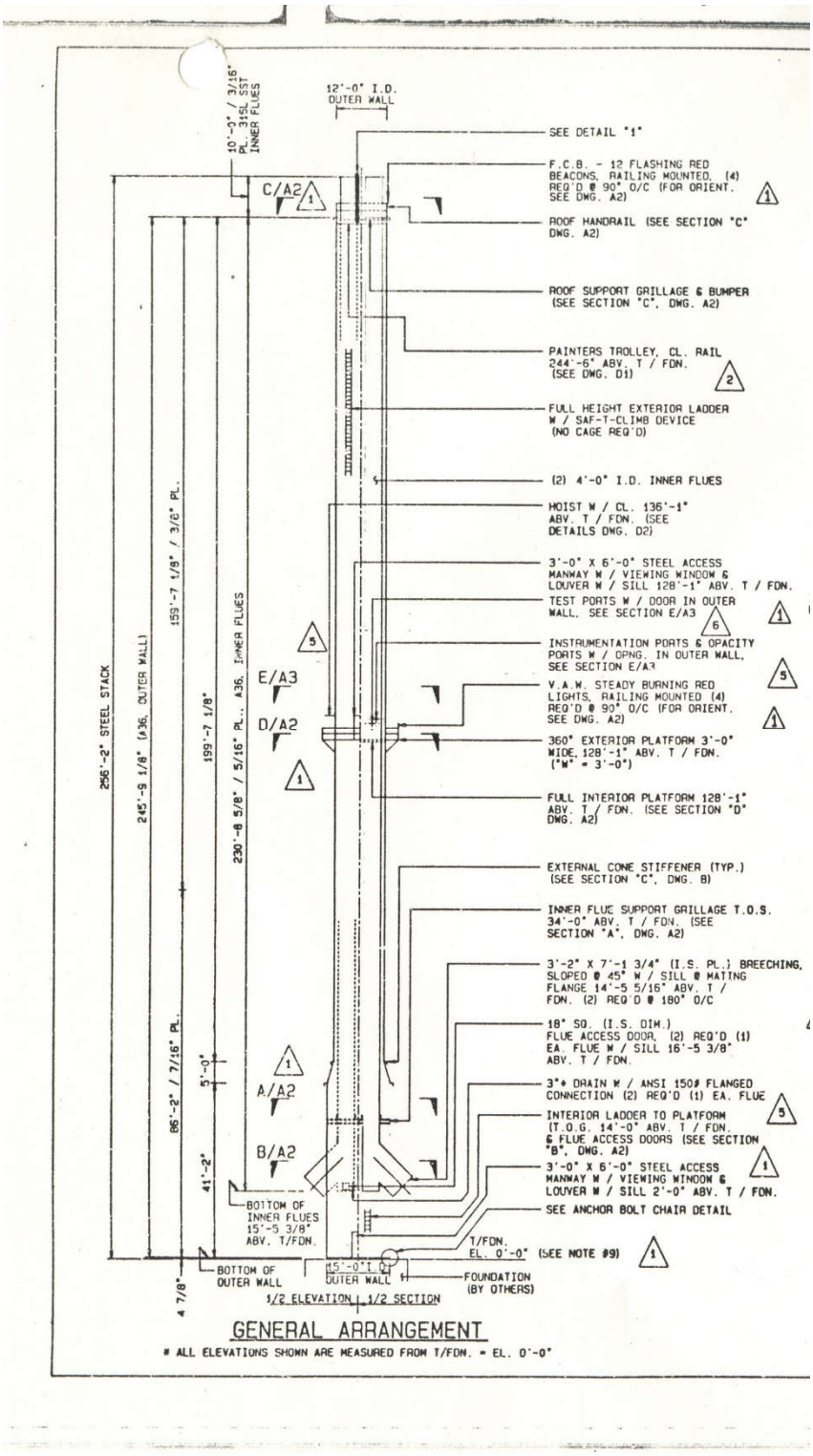
[5] Acute toxicity testing with unit load at 80-90% of design.

5.0 SAMPLING AREA DESCRIPTIONS

5.0 SAMPLING AREA DESCRIPTIONS

The outlet sampling area at Covanta Marion, Inc. (CMI) is located on a platform 128 feet above the ground outside of the steel stack (see Figure 1). The stack is equipped with a rope and pulley to facilitate hauling equipment up and down. The ladder is equipped with a Saf-T-Climb® climbing device. Each stack has two 4 inch diameter test ports at 90° and one 4 inch single port available.

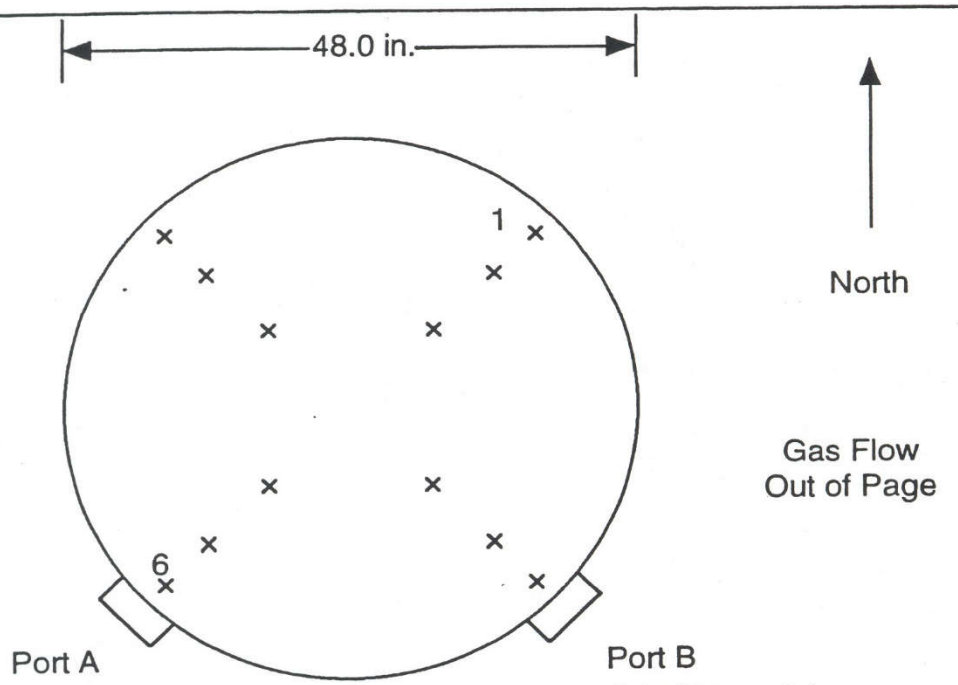
	Sampling Area Parameters
Testing platform elevation above ground:	128 ft.
Test ports elevation:	131 ft.
Test ports flange size:	4 in.
Flue diameter:	4 ft.
Nearest downstream disturbance:	120 ft.
Nearest upstream disturbance:	100 ft.



Figures 2 and 3 depict the sampling point determinations.

METHODOLOGY

SAMPLING POINT DETERMINATION (CONTINUED)



Traverse Point	Port to Point Distance (in.)
1	45.9
2	41.0
3	33.8
4	14.2
5	7.0
6	2.1

CEM Sampling Point	Port to Point Distance (in.)
1	40.0
2	24.0
3	8.0

Diameters to upstream disturbance: >8 — Limit: 2
Diameters to downstream disturbance: >2 — Limit: 0.5

Units 1 and 2 Stack Sampling Point Determination (EPA Method 1)

Figure 3

6.0 TEST METHODS DESCRIPTIONS

6.1 Sampling and Analytical Methods

This section briefly describes the sampling and analytical procedures that are used and any deviations from the methods. The planned methods, techniques and laboratories have been chosen to provide the lowest feasible detection limits for the planned test run times and sampled volumes. For example:

- EPA Method 23 will be used to measure Dioxins, Furans and PCBs.
- A separate sampling train will be operated (according to SW-846 Method 0023) to measure chlorobenzenes and chlorophenols. This will be done to eliminate the need to "split" the samples in the laboratory, to provide lower detection limits for all the analytes.
- Another separate sampling train will be operated (according to CARB 429) to measure PAH compounds. Again, this will be done to provide lower detection limits.

The EPA Method 29 analysis does not discern the metal compounds present, as it measures only each sample's total amount of each analyzed metal. Since Molybdenum Trioxide is a target analyte, a non-destructive analysis will be conducted on each Method 29 filter before the filter is processed for the Method 29 analysis. The non-destructive analysis will include scanning electron microscopy with energy dispersive X-ray spectrometry, which can discern and count Mo Oxides relative to Mo Chlorides and MoS2 (and other Mo compounds). The analysis cannot tell MoO2 apart from MoO3, but should provide a reasonable estimate of the fraction of the total Mo that is Mo oxides versus other phases. Note that Mo complexed with Fe can make identification difficult, and that could increase the uncertainty of the analysis.

The Mo oxide fraction will be used (with the Method 29 result for total Mo from each test run) to calculate a conservative estimate of the emissions of Molybdenum trioxide.

EPA Methods 1-4. EPA Methods 1 through 4 are utilized in conjunction with each isokinetic test method. EPA Method 1 is used to determine the location of the sampling points. EPA Method 2 is used to measure the flue gas flow rate. EPA Methods 3A/3B are used to determine the flue gas molecular weight. EPA Method 4 is used to determine the flue gas moisture content. The information provided by these methods is used in determining isokinetics, parameter concentrations, and parameter emission rates.

EPA Method 23. The concentrations and emissions rates of polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDD/PCDF), polychlorinated biphenyls (PCB),

chlorobenzene, and chlorophenol are determined utilizing the proposed revision to EPA Method 23 from the January 2020 Federal Register. The proposed EPA Method 23 sampling train consists of a glass nozzle, a heated glass probe liner, a heated glass fiber filter, a condenser, an XAD resin trap, four chilled impingers in series (the knock out impinger will be omitted as provided for in the proposed revisions to EPA Method 23) , a dry gas metering console and a calibrated orifice. A heated sample transfer line of Teflon tubing may be used between the filter holder and the condenser, as described in Section 2.1.2 of Method 23. The first and second impingers contain ~100mL of DI water, the third is empty, and the fourth impinger contains pre-weighed silica gel. The weight of each impinger and the adsorbent module, including the fitting caps will be recorded to the nearest 0.5 g before and after sampling. The equipment is operated in accordance with proposed EPA Method 23 with no exceptions. Each test run is four (4) hours in duration.

At the end of each test run, each impinger and the XAD adsorbent module is weighed to compare with pre-sampling weights for determination of the stack gas moisture content (i.e. EPA Method 4). The samples are recovered, processed and analyzed in accordance with proposed EPA Method 23. The samples are extracted and concentrated in the laboratory, then analyzed by High-Resolution GC with High-Resolution Mass Spectroscopy for PCDD/PCDF and PCB. Results are converted to stack concentrations (ng/dscm or pg/dscm) and mass emission rates (e.g. lb/hr) for reporting.

EPA SW-846 Method 0023a. The concentrations and emissions rates of chlorobenzene and chlorophenol are determined utilizing the proposed revision to EPA Method 23 from the January 2020 Federal Register. The sampling train consists of a glass nozzle, a heated glass probe liner, a heated glass fiber filter, a condenser, an XAD resin trap, four chilled impingers in series, a dry gas metering console and a calibrated orifice. A heated sample transfer line may be used between the filter holder and the condenser. The first and second impingers contain ~100mL of DI water, the third is empty, and the fourth impinger contains pre-weighed silica gel. The weight of each impinger and the adsorbent module, including the fitting caps will be recorded to the nearest 0.5 g before and after sampling. The equipment is operated in accordance with proposed EPA Method 23 with no exceptions. Each test run is four (4) hours in duration.

At the end of each test run, each impinger and the XAD adsorbent module is weighed to compare with pre-sampling weights for determination of the stack gas moisture content (i.e. EPA Method 4). The samples are recovered, processed and analyzed in accordance with SW-

846 Method 0023a. The samples are extracted and concentrated in the laboratory, then analyzed by Gas Chromatography - Mass Spectroscopy (GC-MS) according to EPA Method 8270D for its list of calibrated Semi-Volatile Organic Compounds, which includes some of the chlorobenzenes and chorophenols. The analysis includes a scan to measure the top ten ten tentatively identified compounds (TIC) to include any additional chlorobenzenes and chlorophenols (Chlorobenzene may be too volatile to be captured, but will be captured and analyzed in the Method 0031 samples). Results are converted to stack concentrations (ng/dscm or pg/dscm) and mass emission rates (e.g. lb/hr) for reporting.

CARB Method 429. The sampling and analytical procedures outlined in CARB Method 429 are used to determine the polycyclic aromatic hydrocarbons (PAHs) emissions.

Sampling Train Description. The sampling train consists of a glass nozzle, a heated probe with a glass liner, a heated Teflon-coated glass fiber filter, a water-cooled condenser, a XAD sorbent trap, four chilled impingers in series, a pump, a dry gas meter and a calibrated orifice. A sample transfer line (Teflon tubing) may be used to connect from the filter holder to the condenser. The filter is housed in glass filter holder and supported on a Teflon frit. The condenser is placed above the XAD sorbent trap allowing the condensate to drain vertically through the sorbent for removal of the organic constituents in the gas. The sorbent trap is charged with the precleaned, spiked resin. The first and second impingers each are charged with sodium carbonate/sodium bicarbonate buffer solution, the third is empty and the fourth contains silica gel. Sealing greases are not used on the sample train connections.

The samples are recovered, processed and analyzed in accordance with CARB Method 429. The samples are extracted and concentrated in the laboratory, then analyzed by high resolution capillary column gas chromatography coupled with high resolution mass spectrometry (HRGC/HRMS) for the PAH compounds. Results are converted to stack concentrations (ng/dscm) and mass emission rates (e.g. lb/hr) for reporting.

EPA Method 26A (Modified). Concentrations of Halogens and halides are measured using EPA Method 26A with isokinetic sampling. This provides sampling similar to Method 26 but using full-size impingers and the larger sampled volume in place of the midget impingers and smaller sampled volume of Method 26.
The following will also apply:

1.) The probe & filter must be kept above the exhaust temperature and greater than 248°F.

2.) A separate blank solution of the absorbing reagent should be prepared for analysis with the field samples.

3.) At a minimum, results of testing are to be reported in the following units. Test results shall be reported as not blank corrected.
- ppmdv
- ppmdv @ 7% O_2
- lb/hr (outlet only)
- lb/1,000 lbs of steam produced

The equipment is operated in accordance with EPA Method 26A except that:
- The sampling will be conducted at a constant sampling rate rather than at isokinetic sampling rates,
- The sampling probe may be a "straight" tube rather than including a nozzle for isokinetic sampling.
- The sampled volume will be measured using a "Method 5" style dry gas meter console.
Each test run will be 1 hour in duration.

At the end of each test run, each impinger is weighed to compare with pre-sampling weights for determination of the stack gas moisture content (i.e. EPA Method 4). The contents of the H_2SO_4 impingers are recovered into one sample bottle, and the contents of the NaOH impingers are recovered into a separate sample bottle for each test run.

The full load test samples are analyzed in accordance with EPA Method 26A for the halides and halogens identified in Section 1.1 of EPA Method 26 (i.e. HCl, HBr, HF, Cl_2 and Br_2), but the low load tests samples will only be analyzed for the halides (HCl and HF).

.

EPA Method 29. Metal concentrations and emission rates are determined utilizing EPA Method 29. The EPA Method 29 sampling train consists of a glass nozzle, a heated probe with a glass liner, a heated (low-metal blank) quartz filter, an empty impinger (optional), two chilled impingers each with 100mL of 5% HNO_3/10% H_2O_2, an empty impinger, two chilled impingers each with 100mL of 4% $KMnO_4$/10% H_2SO_4, an impinger with a known mass of of silica gel, and a dry gas metering console. Each test run is a minimum of two (2) hours in duration. Borosilicate glass or quartz probe liners and nozzles are used to avoid possible contamination.

After completion of each test run, each impinger is weighed to compare with pre-sampling weights for determination of the stack gas moisture content (i.e. EPA Method 4). The samples

are recovered, preserved, processed and analyzed in the analytical laboratory in accordance with EPA Method 29.

The Method 29 filter from each test run (and a reagent blank filter) will be sent first to a laboratory for non-destructive analysis of the Molybdenum compounds. The non-destructive analysis will include scanning electron microscopy with energy dispersive X-ray spectrometry, which can discern and count Mo Oxides relative to Mo Chlorides and MoS2 (and other Mo compounds). The results of the analysis will be used to estimate the fraction of the total Molybdenum emissions that may be Molybdenum Trioxide. After completion of the non-destructive analysis, the filters will be sent to the separate laboratory for processing by EPA Method 29 along with the other Method 29 sample fractions.

EPA SW-846 Method 0061. Hexavalent chromium emissions will be determined using the SW846 Method 0061, modified to use a different impinger solution. The sampling train will consist of a glass nozzle, Teflon probe liner with Teflon aspirator, four Teflon impingers and one glass impinger connected in series, a leak-free sampling pump assembly and a dry gas metering console.

The impingers will be charged as described in Section 7.1.4 of Method 0061, except that the 0.1M KOH will be replaced by 0.1M sodium bicarbonate solution. Recent sampling and laboratory practice has evolved to improve the maintenance of the valence state of the hexavalent and trivalent chromium and to provide lower blank values. The bicarbonate solution has been found to have non-detectable chromium content, even at laboratory detection limit of 0.01 μg/L. The solution also improves the maintenance of the proper pH range during sampling, as studies have shown that low pH drives hexavalent chromium to the trivalent state, and high pH drives trivalent chromium to the hexavalent state. The bicarbonate solution facilitates maintenance of the pH in the 8.5 to 10 range that is ideal for valence-state maintenance.

At the completion of each test run, the pH of the solution in the first impinger is determined (and recorded) using pH indicator strip. If the pH is not above 8.5, the solution is discarded. If the pH is above 8.5, the impingers are purged for 30 minutes with N_2 at a rate of 10 liters/min. At the conclusion of the N_2 purge, the contents of the impingers are recovered into a sample container. The entire sampling train up to the silica gel impinger is rinsed with DI water into a sample container. The sample is filtered through an acetate membrane filter with a 0.45 um

pore size. Nitrogen is used to accelerate the filtering period. The filtered sample is then placed into a chilled ice chest for storage and transport to the analytical laboratory.

The samples are analyzed in accordance with SW846 Method 0061 by Chester LabNet of Tigard, Oregon. Chester's SOP for the method includes important updates that provide a detection limit of 0.01 µg/L (as compared with older techniques that have a typical detection limit of 0.5 µg/L).

EPA SW-846 Method 0031. Concentrations of volatile organic compounds are measured using a single sampling train for SW-846 Method 0031 The system includes a sampling rate of 0.5 L/min for 40 minutes as in the "SLO-SMVOC" criteria to collect the very volatile compounds without significant breakthrough (i.e. less than 5% in the final Tenax trap). Three such samplings are made during each 120-minute test run, with trap changes between samplings. A separate fourth 40-minute sampling run may be made to provide a "spare" set of traps to archive for each test run in case of issues with any of the normal set of three. The only compounds not analyzed by 0031 are Ethylene, Propylene and 1,3-Dichloropropene; measurement of these may be provided by a TIC scan by EPA Method 8270. A list of the normally applicable compounds is available in Section 1.1 of the method.

The method employs a sampling module and meter box to withdraw a 20-L sample of effluent gas containing volatile organic compounds from a stationary source at a flow rate of 0.5 L/min, using a glass-lined probe heated to 130 ± 5°C and a "Sampling method for volatile organic compounds" (SMVOC) train. The gas stream is cooled to 20°C by passage through a water-cooled condenser and volatile organic compounds are collected on a set of sorbent traps (Tenax®-GC/Tenax®-GC/Anasorb®-747). Liquid condensate is collected in an impinger placed between the two Tenax®-GC traps and the Anasorb®-747 trap.

Sample fractions are recovered, stored, shipped and analyzed as described in Method 0031.

CARB Method 430. Sampling and analysis are conducted in accordance with CARB Method 430, modified to include sampling and analysis of acrolein and to mitigate interference from NO_X in the stack gas. Gaseous emissions are drawn through a probe and sample line (tubing) and two impingers in series, each impinger containing an aqueous acidic solution of 2,4-dinitrophenyl-hydrazine (DNPH). The sampling train includes a probe of heated glass or Teflon

tubing, a connecting sample line of Teflon tubing, the two impingers, vacuum pump, control valves and dry gas meter.

Modifications for sampling include the use of a calibrated liter-range dry gas meter to measure the volume of sampled dry stack gas (in place of the rotameter described in the Method, as the rotameter measures only the sampling rate). Note that the meter box includes a rotameter or similar device for measurement of the sampling rate so that the rate will be no higher than 500 ml per minute.

Sampling is also modified by the addition of a toluene “float” to each DNPH impinger. This modification has been well-studied by several researchers and has become common practice among testers who routinely use CARB Method 430. The modification prevents interference from NO_X, allows accurate measurement of acrolein, and provides immediate, continuous extraction to stay within the 7-day hold-time for extraction described in Section 8.3 of Method 430.

Approximately 2 to 5 ml of toluene is added to each DNPH impinger prior to sampling and is recovered from the impinger with the DNPH solution. This modification provides continuous extraction of the hydrozone derivatives (formed from the aldehydes reacting with the DNPH) as the samples are collected. Since the derivative for acrolein is not water-soluble, it is continuously extracted into and preserved in the toluene; this allows for accurate laboratory analysis of the acrolein content (which would not be possible using the Method as written). The continuous extraction of the other derivatives (from formaldehyde and acetaldehyde) into the toluene prevents interference from NO_X, as the reactions with NO_X take place only in an aqueous solution.

At the completion of sampling, the probe is rinsed with 2 ml of impinger solution into the first impinger. Each impinger is recovered separately into a glass sample vials with a gas tight lid and each impinger is rinsed with 2 ml of impinger solution. An aldehyde reacts with DNPH by nucleophilic addition on the carbonyl followed by 1,2- elimination of water and the formation of a 2,4-dinitrophenylhydrazone. Acid is required to promote protonation of the carbonyl because DNPH is a weak nucleophile. After organic solvent extraction, the sample is analyzed using reverse phase HPLC with an ultraviolet (UV) absorption detector operated at 360 nm. Impingers are analyzed separately. Formaldehyde and acetaldehyde in the sample are identified and

quantified by comparison of retention times and area counts of sample extracts with those of standards.

Bay Area Air Quality Management District (BAAQMD) Source Test Procedure ST-1B.
The sampling procedures outlined in BAAQMD Method ST-1B is used to determine the ammonia emissions. The sampling train consists of a heated glass or titanium probe liner, a heated borosilicate glass filter holder with a Teflon filter support, four chilled impingers in series, a pump, a dry gas meter and a calibrated orifice. The impingers are placed in an ice bath to maintain the impinger temperature at 45° F or less.

All glassware is precleaned by washing with soap, hot tap water and rinsed with deionized water. For sampling, the first two impingers are each charged with 100 ml of 0.1 N hydrochloric acid (HCl). The third impinger is empty, and the fourth impinger contain silica gel. The leak check and sampling procedures are performed according to the method. Each impinger is weighed before and after sampling.

The contents of the first impinger are transferred to a Nalgene sample bottle. The contents of the second impinger are transferred to a separate Nalgene sample bottle.
The samples are delivered to the laboratory for separate analysis of the first and second impinger contents for the ammonia concentrations using a calibrated ion specific electrode.

7.0 QUALITY ASSURANCE / QUALITY CONTROL

7.0 QUALITY ASSURANCE / QUALITY CONTROL

Covanta has instituted a rigorous Quality Assurance/Quality Control (QA/QC) program for all its compliance source testing. This program ensures that the emission data reported for Covanta facilities are as accurate and meaningful as possible.

Glass or Teflon® is employed in all the sampling equipment in contact with the sample gas. This includes the nozzle, probe liner, filter housing, sample line and impingers. Calibration of all gas meters, thermocouples, and pitot tubes used in the test program will be performed using reference methods with calibration sheets included in the final report.

Transportation blanks, method blanks, inert sample containers, field data and chain of custody forms from the U.S. EPA QA Handbook for Air Pollution Measurement Systems, Volume III, Stationary Source Specific Methods, EPA-600/4-77-027b, are used during all phases of the test program.

All test programs include a supervising engineer from Covanta's corporate office to ensure the integrity of the test program according to the Source Test Plan. All field data sheets for each test run listed in the source test plan including any aborted test runs will be included in the final test report. The draft report with laboratory analyses will be available to CMI within 25 calendar days following the completion of testing.

8.0 OPERATIONAL PARAMETERS

8.1 OPERATIONAL PARAMETERS

During the source testing, plant process data will be monitored and collected by Covanta personnel to ensure representative operation of the facility. Steam flow rate will be documented to ensure representative heat input at design conditions.

The following operating parameters will be included in the final report:

Steam Production: Steam Flow (lb/hr)

Steam Flow will be measured and reported for all test runs. Reduced steam load (i.e. low fire) will be 80-90% of design steam load capacity and increased/normal steam load (i.e. high fire) will be 90-110% of design steam load capacity.

Temperature: Baghouse Inlet

Lime slurry feed rate: dry lbs/hr

Ammonia injection rate: gal/hr

Air Pollution Control: Carbon Feed Rate (lb/hr to each unit)

Supplemental fuel usage during the tests, if used

Municipal Solid Waste totals during testing

Regulated Medical Waste :

Regulated Medical Waste (RMW) is composed of several subcategories, which include pathology, trace chemotherapy, pharmaceuticals, sharps, and biohazardous waste. Due to state-specific requirements for treatment technologies, CMI primarily processes pathology, trace chemotherapy, and pharmaceutical wastes. These wastes are packaged in either U.S. Department of Transportation (DOT) approved single-use packaging or reusable packaging. Processing of single use packaged RMW will likely contain higher quantities of plastic and corrugated cardboard. CMI does not refer to either packaging or waste type as ‘grey bin’ or ‘blue bin.’ In addition, this terminology is not identified in any regulatory context. CMI will track volumes of medical waste processed and will differentiate between single-use and reusable packaging for reporting purposes.

- Packaging type (reusable or single use)
- Number of containers or pallets
- Total tons processed

Liquid Direct Injection (LDI) waste totals during testing to include:

- Waste description
- Approximate injection rates
- Total tons and/or gallons processed

- Analysis of leachate injected during the testing
  - Chloride – Method 300.0 – Data already obtained for LDI
  - Total Metals – Method 6020A - Data already obtained for LDI
  - Total Halogenated Organics – Method 9020B - As Andrew indicated, additional data may be required for Total Halogenated Organics - Method 9020B

Supplemental waste (also referred to as Special waste) during testing to include:

- Waste description
- Total tons received

9.0 SOURCE TEST RESULTS

9.1 SOURCE TEST RESULTS

Source test results will be submitted to the ODEQ Agency Headquarters, 700 NE Multnomah Street, Suite 600, Portland, OR 97232 within 60 days following the completion of the source test.

Emissions to be tested shall be reported as:

PCDD/PCDF:	ng/dscm @ 7% O_2, lb/hr, lb/1000lb steam
PCBs:	ng/dscm @ 7% O_2, lb/hr, lb/1000lb steam
PAHs:	ng/dscm @ 7% O_2, lb/hr, lb/1000lb steam
VOCs:	ppb @ 7% O_2, lb/hr, lb/1000lb steam
Metals:	mg/dscm @ 7% O_2, lb/hr, lb/1000lb steam
Hydrogen chloride, halides, and halogens:	ppm @ 7%, lb/hr, lb/1000lb steam
Formaldehyde and other aldehydes:	ppm @ 7%, lb/hr, lb/1000lb steam
Ammonia:	ppm @ 7%, lb/hr, lb/1000lb steam
Chlorophenols:	ng/dscm @ 7% O2, lb/hr, lb/1000lb steam
Chlorobenzenes:	ng/dscm @ 7% O2, lb/hr, lb/1000lb steam
Molybdenum chloride and trioxide	weight percentage of solid particulate matter and of total Mo, lb/hr, lb/1000lb steam

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Peter Becker
Title: Client Project Manager
Region: West
Email: pbecker@montrose-env.com
Phone: 330-285-6884

Name: Kristina Schafer
Title: Hub District Manager
Region: West
Email: kschafer@montrose-env.com
Phone: 253-480-3801