GHD Services Inc.

6400 Shafer Court, Suite 400
Rosemont, Illinois 60018

Vantage Specialty Chemicals

Gurnee, IL
Client Project # 11197003
Sampling Date: 7/3/19

Analytical Report
(0719-075A)

EPA Method TO-15

Ethylene oxide

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 ??? pages.

Report Issued: xx/xx/xxxx

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Results

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Sample Name	: AIR-11197003-07032019-053
Sample Info	: 0719-075; 500mL load; Can#000062
Data File	: X1902385.D
Dilution	: 1
Pressurization Factor	: 1.724
Acquisition Date	: 2019-07-12 13:51:16
Instrument Method	: TO15_RMP_EO.M
Matrix	: AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.275	0.0172	0.0172	0.495	0.0311	0.0311	m

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,118,864	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	:	AIR-11197003-07032019-054
Sample Info	:	0719-075; 500mL load; Can#1479
Data File	:	X1902386.D
Dilution	:	1
Pressurization Factor	:	1.770
Acquisition Date	:	2019-07-12 14:41:22
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.0674	0.0177	0.0177	0.121	0.0319	0.0319	m

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,123,840	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	: AIR-11197003-07032019-055
Sample Info	: 0719-075; 500mL load; Can#000028
Data File	: X1902387.D
Dilution	: 1
Pressurization Factor	: 1.735
Acquisition Date	: 2019-07-12 15:37:35
Instrument Method	: TO15_RMP_EO.M
Matrix	: AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.0392	0.0174	0.0174	0.0706	0.0313	0.0313	m

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,150,049	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	:	AIR-11197003-07032019-056
Sample Info	:	0719-075; 500mL load; Can#000024
Data File	:	X1902388.D
Dilution	:	1
Pressurization Factor	:	1.750
Acquisition Date	:	2019-07-12 16:34:00
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.0636	0.0175	0.0175	0.115	0.0315	0.0315	m

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,169,309	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	: AIR-11197003-07032019-057
Sample Info	: 0719-075; 500mL load; Can#1583
Data File	: X1902389.D
Dilution	: 1
Pressurization Factor	: 2.612
Acquisition Date	: 2019-07-12 17:30:14
Instrument Method	: TO15_RMP_EO.M
Matrix	: AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.0629	0.0261	0.0261	0.113	0.0471	0.0471	m

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,147,555	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name : AIR-11197003-07032019-058
Sample Info : 0719-075; 500mL load; Can#000072
Data File : X1902390.D
Dilution : 1
Pressurization Factor : 1.821
Acquisition Date : 2019-07-12 18:26:23
Instrument Method : TO15_RMP_EO.M
Matrix : AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.136	0.0182	0.0182	0.244	0.0328	0.0328	m

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,152,340	11.94	5.00	PASS

(ND) = Not Detected
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IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Lab QC

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Sample Name	:	Humid Blank
Sample Info	:	500mL load; Can#0702
Data File	:	X1902369.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-11 23:43:42
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	ND	0.0100	0.0100	ND	0.0180	0.0180	

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,152,752	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	:	Humid Blank
Sample Info	:	500mL load; Can#0702
Data File	:	X1902396.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-12 23:33:54
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	ND	0.0100	0.0100	ND	0.0180	0.0180	

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,174,805	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	:	1ppbv EO LCS
Sample Info	:	25mL load; Can #0741; GCMSPrepPg0767
Data File	:	X1902366.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-11 21:09:57
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Response	Concentration (PPBV)	Tag Value (PPBV)	% Recovery	Flag
Ethylene oxide	83,207	0.955	1.01	94.7	PASS

Sample Name	:	1ppbv EO LCS
Sample Info	:	25mL load; Can #0741; GCMSPrepPg0767
Data File	:	X1902366.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-11 21:09:57
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.955	0.0100	0.0100	1.72	0.0180	0.0180	

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,159,419	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	:	0.1ppbv EO Stability Std
Sample Info	:	25mL load; Can #0714; GCMSPrepPg0754
Data File	:	X1902368.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-11 22:47:38
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Response	Concentration (PPBV)	Tag Value (PPBV)	% Recovery	Flag
Ethylene oxide	10,220	0.120	0.101	118.9	PASS

Sample Name	:	0.1ppbv EO Stability Std
Sample Info	:	25mL load; Can #0714; GCMSPrepPg0754
Data File	:	X1902368.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-11 22:47:38
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.120	0.0100	0.0100	0.220	0.0183	0.0183	m

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,133,870	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Sample Name	:	1ppbv EO LCS
Sample Info	:	25mL load; Can #0741; GCMSPrepPg0767
Data File	:	X1902393.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-12 21:00:10
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Response	Concentration (PPBV)	Tag Value (PPBV)	% Recovery	Flag
Ethylene oxide	81,880	0.938	1.01	93.0	PASS

Sample Name	: 1ppbv EO LCS
Sample Info	: 25mL load; Can #0741; GCMSPrepPg0767
Data File	: X1902393.D
Dilution	: 1
Pressurization Factor	: 1.000
Acquisition Date	: 2019-07-12 21:00:10
Instrument Method	: TO15_RMP_EO.M
Matrix	: AIR

Target Compound	Concentration (PPBV)	RL (PPBV)	MDL (PPBV)	Concentration (ug/m3)	RL (ug/m3)	MDL (ug/m3)	Flag *
Ethylene oxide	0.938	0.0100	0.0100	1.69	0.0180	0.0180	

Internal Standards	Response	Retention Time (min)	Concentration (PPBV)	Flag *
Bromochloromethane (IS)	1,161,831	11.94	5.00	PASS

(ND) = Not Detected
*** (J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration**
IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Canister and Controller Data Sheet

Enthalpy Analytical, LLC

Client Name: GHD Services, Inc.
Client #: 11197003
Enthalpy Job #: 0719-075

Canister Data

Canister ID	Blank Check Analysis ID	Canister Pressure Pre-Sample (mmHg)	Canister Pressure Post-Sample (mmHg)	Canister Pressure Final (mmHg)	Canister Pressurization Factor
000062	0519-259#1	-760	-39	484	1.724
1479	0519-259#1	-760	-44	509	1.770
000028	0519-259#3	-763	-46	480	1.735
000024	0519-259#3	-763	-36	508	1.750
1583	0519-259#3	-763	-322	387	2.612
000072	0519-259#3	-763	-41	551	1.821
0788	0519-259#4	-758	-75	360	1.633
0765	0519-259#4	-758	-24	492	1.699
0764	0519-259#4	-758	-277	338	2.269
0766	0519-259#4	-758	-29	492	1.711
0760	0519-259#4	-758	-21	478	1.674
0761	0519-259#4	-758	-547	302	4.954

Date Prepared: 6/3/19
Date Received: 7/9/19

Prepared By: WRC
Received By: DSM

Narrative Summary

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Enthalpy Analytical Narrative Summary

Company	GHD Services, Inc.
Analyst	TDD
Parameters	EPA Method TO-15 SIM

Client #	11197003
Job #	0719-075A
# Samples	6 (6L) Canisters

Custody

David Myers received the samples on 7/9/19 after being relinquished by GHD Services, Inc. The samples were received at ambient temperature and 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 samples were analyzed for ethylene oxide using selective ion monitoring (SIM) and analytical procedures from EPA Method TO-15, *Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/ Mass Spectrometry (GC/MS).*

Upon receipt, the canister pressures were measured and recorded. The canisters were then pressurized with UHP nitrogen and a dilution ratio was calculated for each canister. Refer to the Canister and Controller Data Sheet on page 19 of this PDF report.

The Agilent Technologies Model 6890N, Gas Chromatograph "Xavier" (S/N US10721018) equipped with a 5975C VL Mass Selective Detector (S/N US71215962) and a Restek Rtx-624 Sil MS, 60 m x 0.32 mm x 1.8 µm capillary column (S/N 1555499) for these analyses. All samples and standards were introduced directly to the analyzer using an Entech 7200 Preconcentrator.

Calibration

The BFB tune analyses associated with the initial and continuing calibrations met method acceptance criteria. The initial calibration ***(X070919A-EO)*** that was used to quantitate the samples met the 30% RSD criteria. The initial calibration verification met the 30% recovery criteria. The closing continuing calibration met the 30% response factor difference criteria. Summary calibration data has been included in this report, however full calibration data is available upon request.

Chromatographic Conditions

A copy of the acquisition method (***TO15_Rmp_EO.M***) is available upon request.

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Enthalpy Analytical Narrative Summary
(continued)

QC Notes	All internal standard retention time and response criteria were met these analyses. The laboratory humid blanks associated with this analysis did not contain ethylene oxide at a concentration greater than 3-times the MDL value. The laboratory duplicate (LD) analyzed with this set of samples met the 25% difference acceptance criteria. The samples were analyzed within the 30-day holding time required by the method.
Reporting Notes	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.

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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).

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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.

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Sample Custody

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Chain of Custody Record

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Special Handling:
- ☐ Standard Turn Around Time
- ☐ Rush Turn Around Time -- Date Needed_____
- All TATs Subject to Approval by Enthalpy Analytical
- All Bag/Can Samples Disposed of 1 Month from Receipt.
- All Other Samples Disposed of 4 Months from Receipt.

Sample(s) Collected by: EVAN MEINEER
Client Name: GHD
Project Manager: MATT LAZARIC

Project Number: 11197003
Site Name: VANTAGE
Location: GURNEE, IL

PO#:
Telephone#: 773-380-9933
Email: matthew.lazaric@ghd.com

For spiked or duplicate samples: please provide sample volumes for recovery calculations. For Particulates: please provide tare weights and/or condensed water volumes.

Special Instructions:

A=Air 1=H2SO4 2=NaOH W=Water O=Other
X=XAD C=Charcoal SG=Silica Gel
G=Grab C=Composite Q=Quality Control O=Other

Sample ID	Date	Time	Sample Volume	Type	Matrix	# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes	# Other	Analyses: Ethylene Oxide	Notes: END TIME	Can ID #
Air-11197003-7/3/2019-053	7/3/19	10:53	6L	C	A					1			X	7/4/19 9:46	000062
Air-11197003-7/3/2019-054	7/3/19	11:06	6L	C	A					1			X	7/4/19 9:55	1479
Air-11197003-7/3/2019-055	7/3/19	11:17	6L	C	A					1			X	7/4/19 10:04	000028
Air-11197003-7/3/2019-056	7/3/19	11:34 ①	6L	C	A					1			X	7/4/19 10:18	000024
Air-11197003-7/3/2019-057	7/3/19	11:59	6L	C	A					1			X	7/4/19 10:34	1583
Air-11197003-7/3/2019-058	7/3/19	12:00	6L	C	A					1			X	7/4/19 10:35	000072

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Condition Upon Receipt:
		[signature]	7-9-19	1:40PM	☐ Iced ☐ Ambient ☐ °C_____
					☐ Iced ☐ Ambient ☐ °C_____
					☐ Iced ☐ Ambient ☐ °C_____

Good Condition Ambient Temp DSM 07-09-19 ① Can mislabeled-054 instead of-056. DSM 07-09-19

Sample Chromatograms

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Sample Name	:	AIR-11197003-07032019-053
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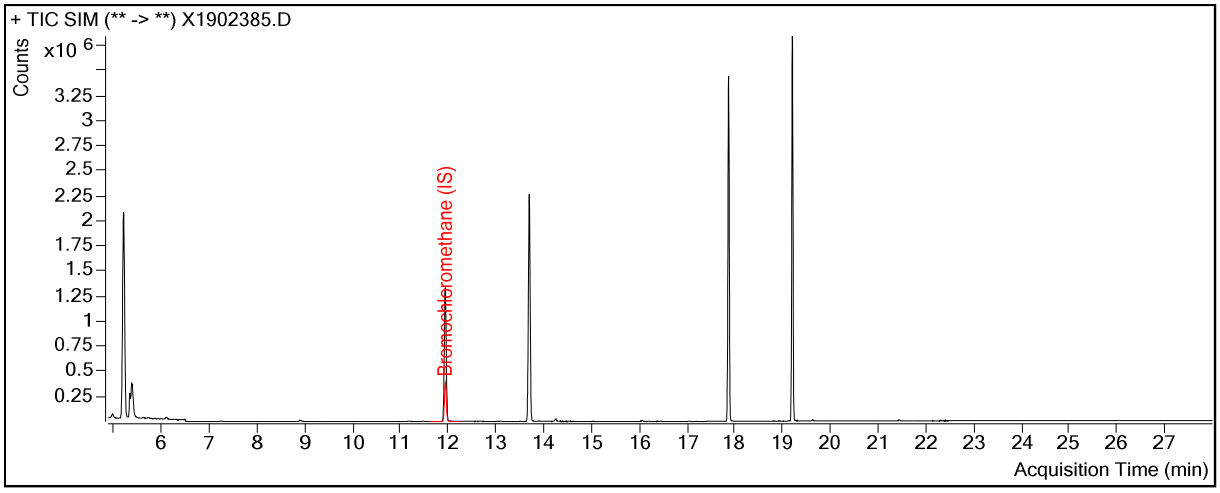
Pressurization Factor	:	1.724
Acquisition Date	:	2019-07-12 13:51:16
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



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Pressurization Factor	:	1.724
Acquisition Date	:	2019-07-12 13:51:16
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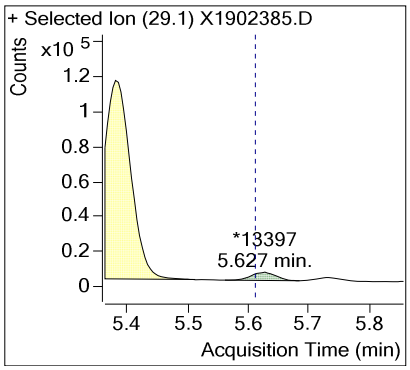
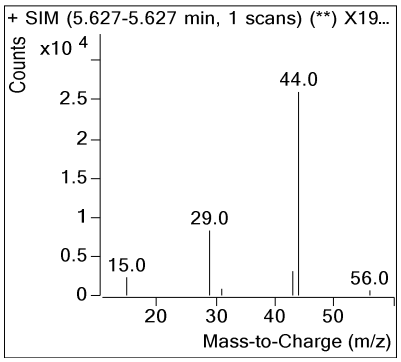
Matrix	:	AIR

Ethylene oxide





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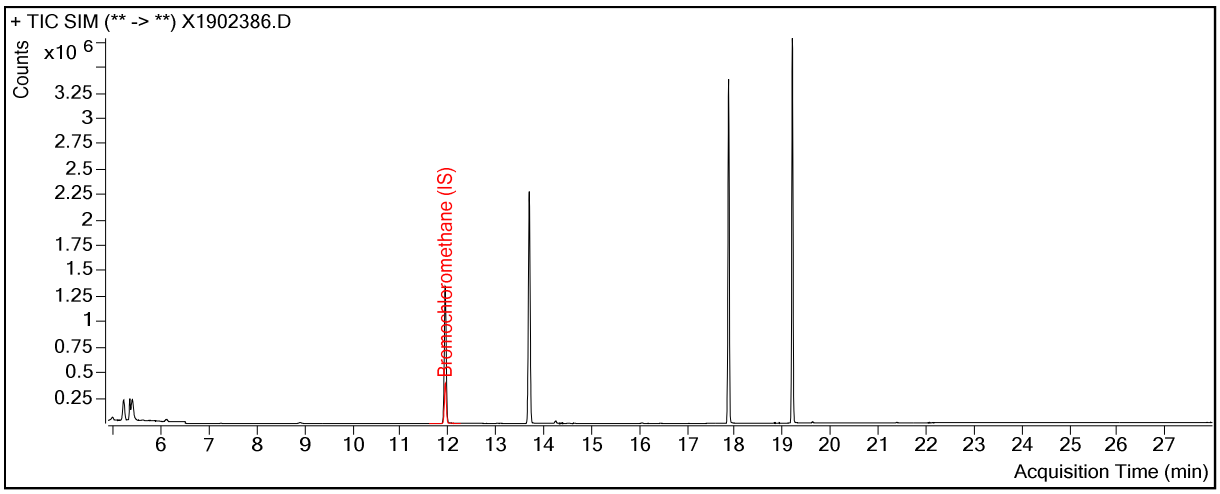
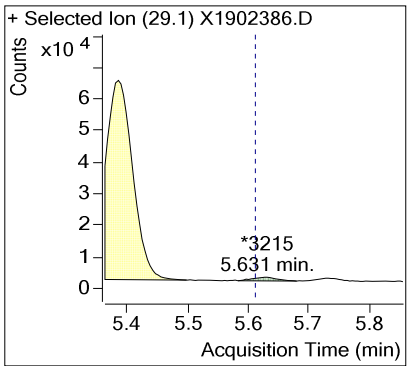
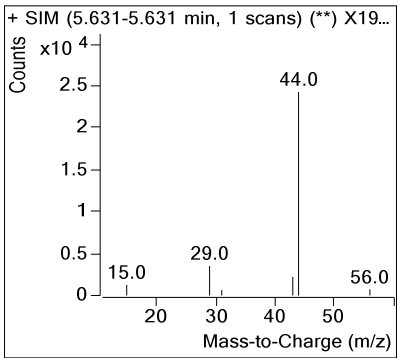
Sample Info	:	0719-075; 500mL load; Can#1479
Data File	:	X1902386.D
Dilution	:	1
Pressurization Factor	:	1.770
Acquisition Date	:	2019-07-12 14:41:22
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



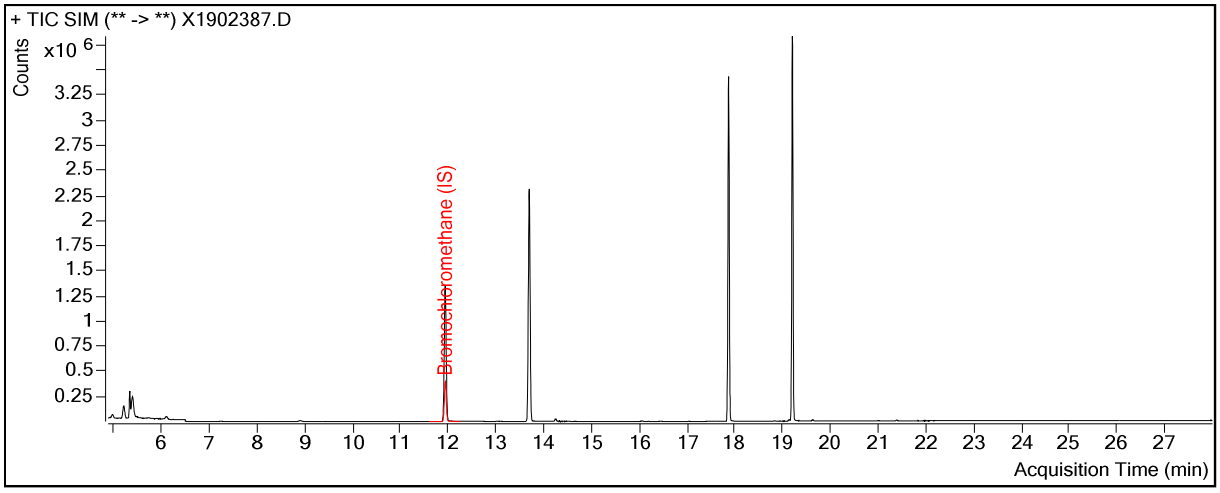
Sample Name	:	AIR-11197003-07032019-054
Sample Info	:	0719-075; 500mL load; Can#1479
Data File	:	X1902386.D
Dilution	:	1
Pressurization Factor	:	1.770
Acquisition Date	:	2019-07-12 14:41:22
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Ethylene oxide



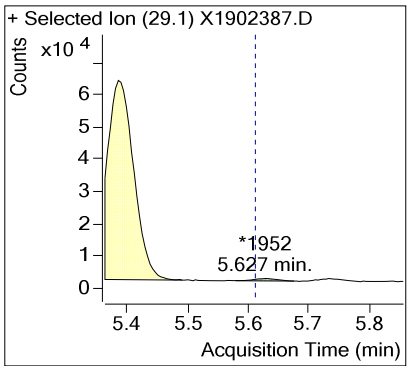


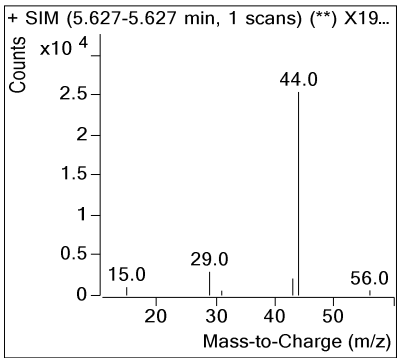
Sample Name	:	AIR-11197003-07032019-055
Sample Info	:	0719-075; 500mL load; Can#000028
Data File	:	X1902387.D
Dilution	:	1
Pressurization Factor	:	1.735
Acquisition Date	:	2019-07-12 15:37:35
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



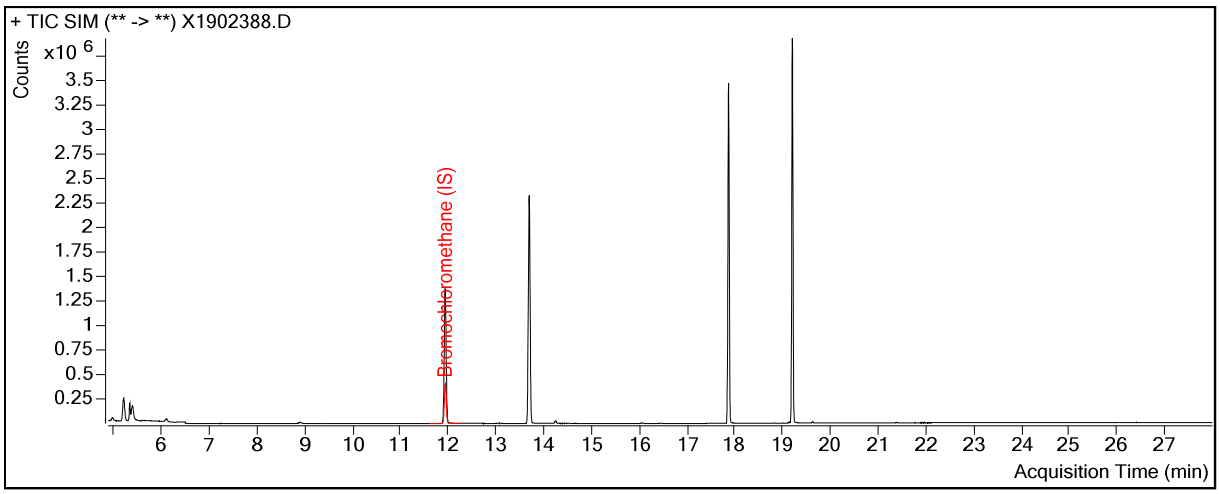
Sample Name	:	AIR-11197003-07032019-055
Sample Info	:	0719-075; 500mL load; Can#000028
Data File	:	X1902387.D
Dilution	:	1
Pressurization Factor	:	1.735
Acquisition Date	:	2019-07-12 15:37:35
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Ethylene oxide



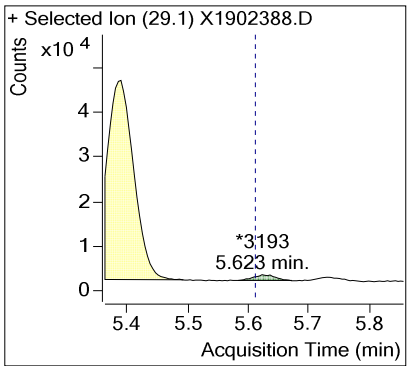


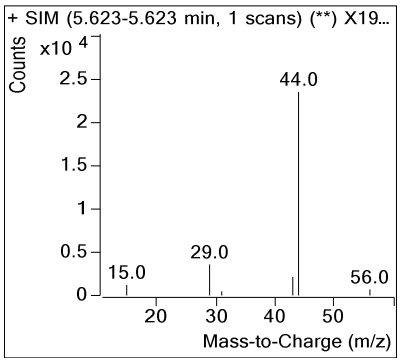
Sample Name	:	AIR-11197003-07032019-056
Sample Info	:	0719-075; 500mL load; Can#000024
Data File	:	X1902388.D
Dilution	:	1
Pressurization Factor	:	1.750
Acquisition Date	:	2019-07-12 16:34:00
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



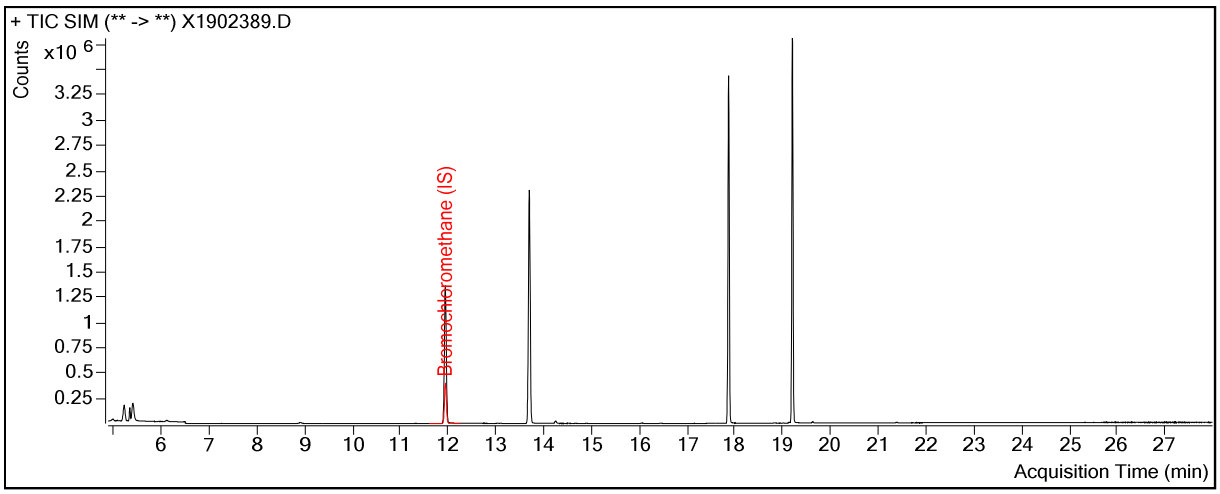
Sample Name	:	AIR-11197003-07032019-056
Sample Info	:	0719-075; 500mL load; Can#000024
Data File	:	X1902388.D
Dilution	:	1
Pressurization Factor	:	1.750
Acquisition Date	:	2019-07-12 16:34:00
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Ethylene oxide



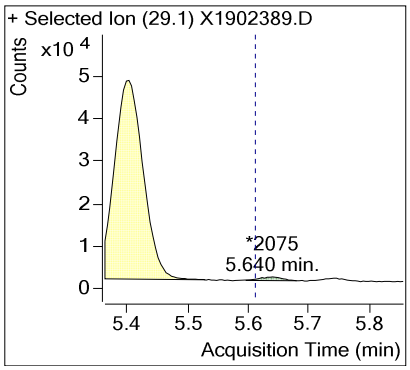


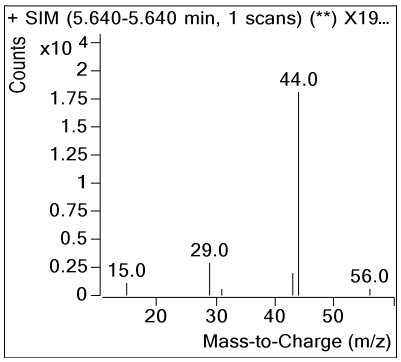
Sample Name	:	AIR-11197003-07032019-057
Sample Info	:	0719-075; 500mL load; Can#1583
Data File	:	X1902389.D
Dilution	:	1
Pressurization Factor	:	2.612
Acquisition Date	:	2019-07-12 17:30:14
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



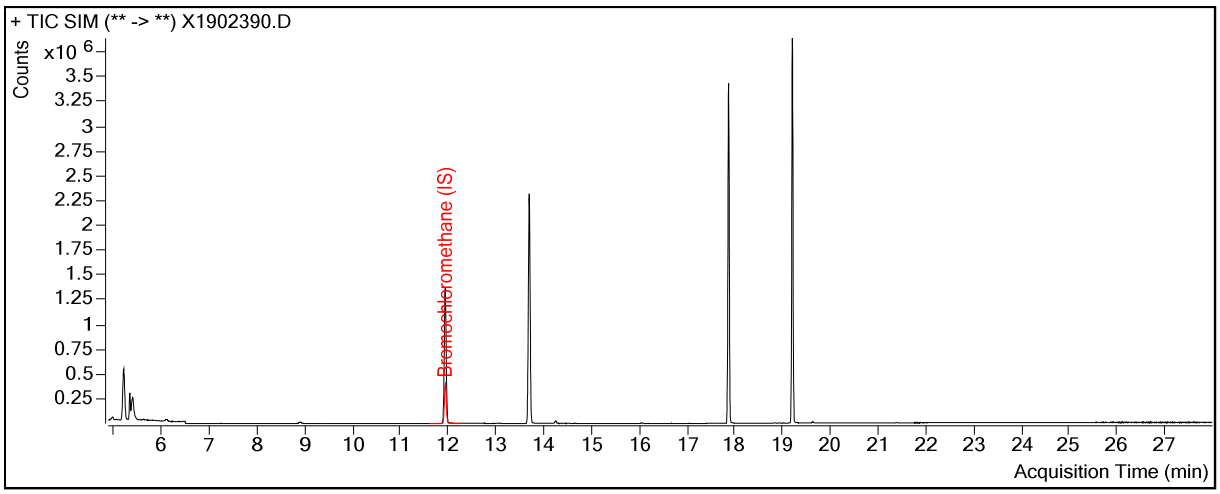
Sample Name	:	AIR-11197003-07032019-057
Sample Info	:	0719-075; 500mL load; Can#1583
Data File	:	X1902389.D
Dilution	:	1
Pressurization Factor	:	2.612
Acquisition Date	:	2019-07-12 17:30:14
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Ethylene oxide



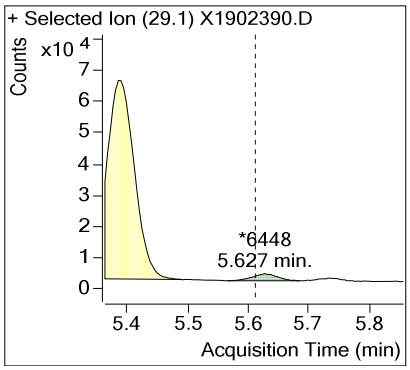


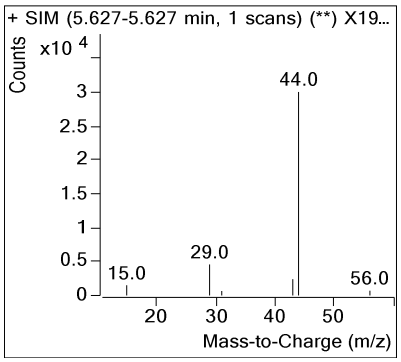
Sample Name	:	AIR-11197003-07032019-058
Sample Info	:	0719-075; 500mL load; Can#000072
Data File	:	X1902390.D
Dilution	:	1
Pressurization Factor	:	1.821
Acquisition Date	:	2019-07-12 18:26:23
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



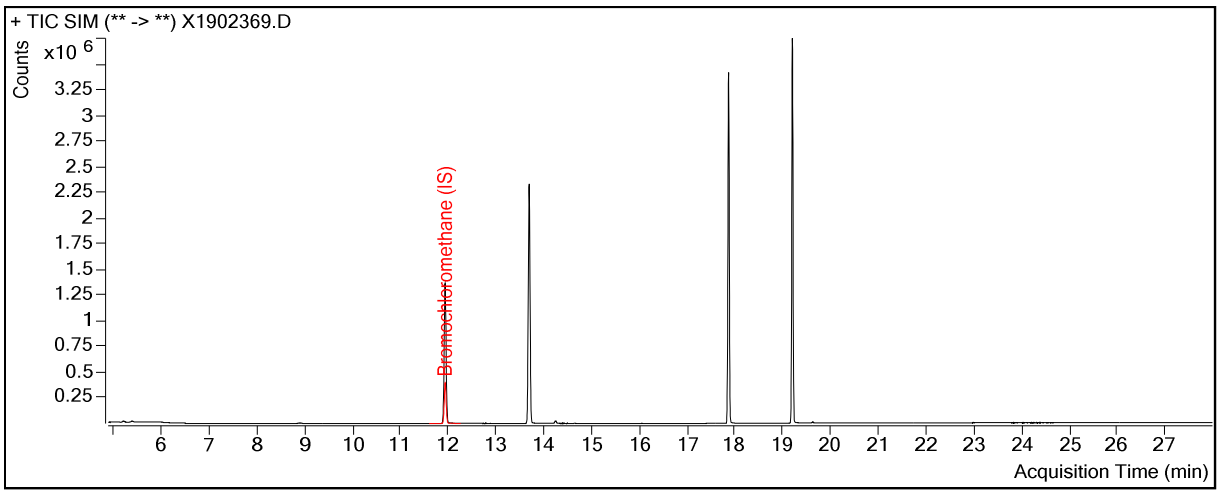
Sample Name	:	AIR-11197003-07032019-058
Sample Info	:	0719-075; 500mL load; Can#000072
Data File	:	X1902390.D
Dilution	:	1
Pressurization Factor	:	1.821
Acquisition Date	:	2019-07-12 18:26:23
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Ethylene oxide

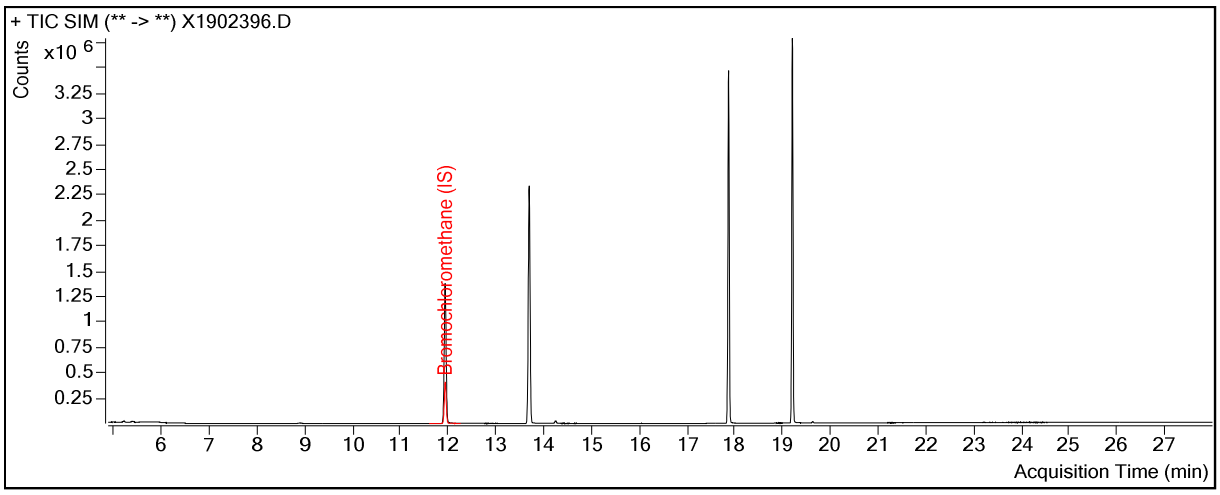




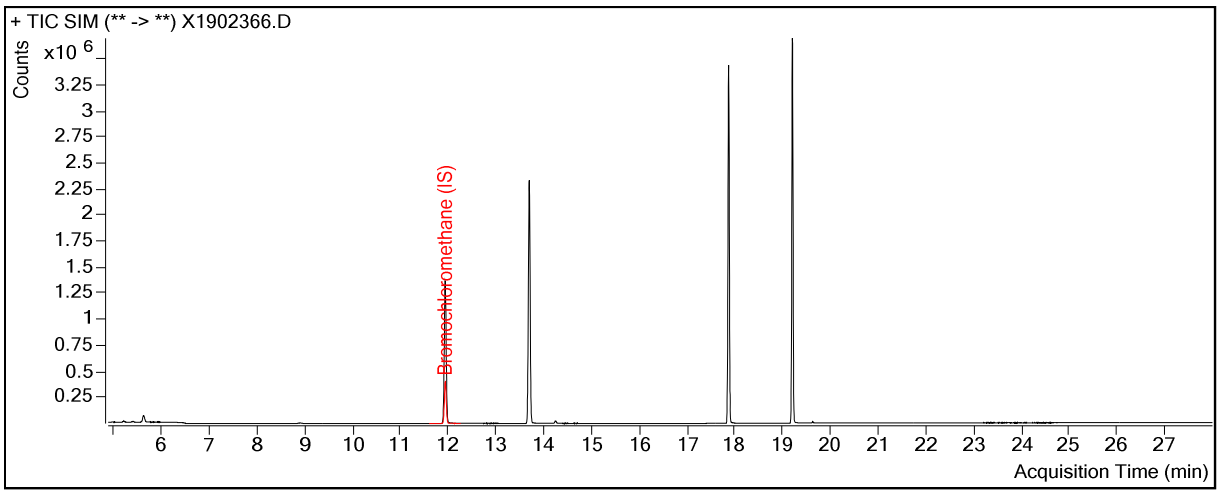
Sample Name	:	Humid Blank
Sample Info	:	500mL load; Can#0702
Data File	:	X1902369.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-11 23:43:42
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



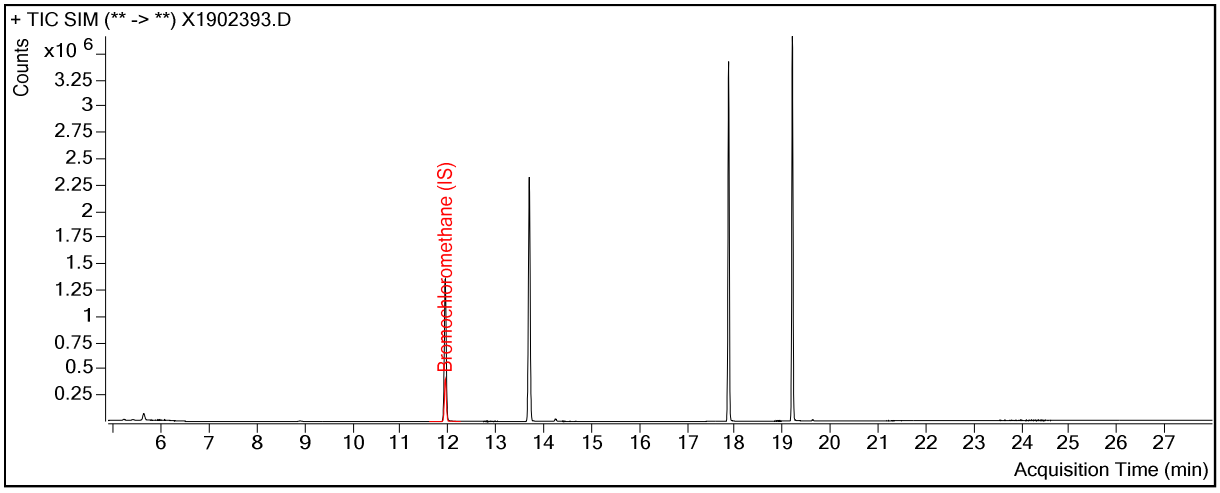
Sample Name	:	Humid Blank
Sample Info	:	500mL load; Can#0702
Data File	:	X1902396.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-12 23:33:54
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



Sample Name	:	1ppbv EO LCS
Sample Info	:	25mL load; Can #0741; GCMSPrepPg0767
Data File	:	X1902366.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-11 21:09:57
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



Sample Name	:	1ppbv EO LCS
Sample Info	:	25mL load; Can #0741; GCMSPrepPg0767
Data File	:	X1902393.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-12 21:00:10
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR



Calibration Summary Reports

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Calibration Sequence X070919A-EO Ical.batch.bin
Method Generation Date 7/10/2019

Compound	Type	RT	Average RRT	Average RF	%RSD	Flag
Ethylene oxide	Target	5.61	0.470	0.376	9.67	PASS
Bromochloromethane (IS)	ISTD	11.94	----------	----------	----------	----------

Sample Name	:	1ppbv EO ICV
Sample Info	:	25mL load; Can #0741; GCMSPrepPg0767
Data File	:	X1902321.D
Dilution	:	1
Pressurization Factor	:	1.000
Acquisition Date	:	2019-07-09 22:18:27
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Response	Concentration (PPBV)	Tag Value (PPBV)	% Recovery	Flag
Ethylene oxide	73,432	0.916	1.01	90.8	PASS

Sample Name	:	0.5ppbv EO CCV
Sample Info	:	125mL load; Can #2085; GCMSPrepPg0771
Data File	:	X1902365.D
Dilution	:	N/A
Pressurization Factor	:	N/A
Acquisition Date	:	2019-07-11 20:20:46
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Response	RF	Average RF	% Difference	Flag
Ethylene oxide	44,528	0.384	0.376	2.3	PASS

Sample Name	:	0.5ppbv EO CCV
Sample Info	:	125mL load; Can #2085; GCMSPrepPg0771
Data File	:	X1902392.D
Dilution	:	N/A
Pressurization Factor	:	N/A
Acquisition Date	:	2019-07-12 20:10:50
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Response	RF	Average RF	% Difference	Flag
Ethylene oxide	44,281	0.375	0.376	-0.3	PASS

Sample Name	:	0.5ppbv EO CCV
Sample Info	:	125mL load; Can #2085; GCMSPrepPg0771
Data File	:	X1902414.D
Dilution	:	N/A
Pressurization Factor	:	N/A
Acquisition Date	:	2019-07-13 15:12:24
Instrument Method	:	TO15_RMP_EO.M
Matrix	:	AIR

Target Compound	Response	RF	Average RF	% Difference	Flag
Ethylene oxide	45,944	0.391	0.376	4.1	PASS

This Is The Last Page Of This Report.

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