

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File

FROM: Amy Robinson *Amy K. Robinson*
1/4/2019

DATE: 1/4/2019

SUBJECT: Ethylene Oxide Sampling at Viant

Overview

The Viant facility in Grand Rapids, Michigan was identified by EPA NATA analysis as having elevated Ethylene Oxide ambient air impacts. Subsequent modeling by AQD showed that the impacts were above the Initial Risk Screening Level (IRSL) ($0.0002 \mu\text{g}/\text{m}^3$) and Secondary Risk Screening Level (SRSL) ($0.002 \mu\text{g}/\text{m}^3$). To ascertain the accuracy of the modeling, AQD conducted a limited monitoring study for Ethylene Oxide in the vicinity of Viant.

Monitoring for Ethylene Oxide was accomplished using the TO-15 SUMMA canister method. EPA's National Contract Laboratory, Eastern Research Group (ERG), performed the analysis. ERG's laboratory detection limit is $0.0819 \mu\text{g}/\text{m}^3$. Since the SRSL is lower than the detection limit of the current method for Ethylene Oxide, the monitoring data will have to be carefully interpreted. For example, if a sample result is reported as non-detect, it is possible that the actual level could still be above the SRSL.

Sampling Details

Sampling for ethylene oxide around the Viant facility was conducted from approximately 12:00 pm on 11/29/2018 to approximately 12:30 pm on 11/30/2018. Summa canisters using fixed orifices were used to collect 24 hr samples. The canisters were setup at 4 locations on and around the facility, see attached map, on 11/29/2018. I setup two canisters at site #1, to collect co-located samples to identify bias in the collection and analysis. Sites # 1, #2 and #3 were located on company property. While site #4 was setup off site between a nearby sidewalk and street.

First the canisters were setup at each of the sampling sites and secured. Then, the canisters were turned on site by site. This was done to minimize the difference in the start times of the canisters. On 11/30/2018, I returned to Viant to take down the samples. First, the valves on all the canisters were closed and then the canisters were taken down and prepped for shipping. Each canister had a Chain of Custody form from the lab that was filled out and sent back with the canister. I retained a copy of the Chain of Custody. A Canister Sampling Field Test Data Sheet was also filled out for each

canister and retained. The samples were shipped back to the laboratory on 12/4/2018 via UPS overnight shipping.

Results

The results for Sites #2 and #3 were received on 12/21/2018 and the results for Sites #1 and #4 were received on 1/3/2019. The results are summarized in the table below. The highest site was Site #3, which was near the scubber and shipping room vent. All sites showed Ethylene Oxide values above the IRSL and SRSL. ERG used an EPA approved method and followed all quality assurance protocols.

Site	Result ($\mu\text{g}/\text{m}^3$)
#1a (co-located)	0.85
#1b (co-located)	0.87
#2	1.56
#3	76.00
#4	0.42

SUMMA Canister Sampling Locations

Sampled 11/29/18

Legend

- Canister Sites
- 📍 Viant Facility



Google Earth

© 2018 Google

200 ft





Eastern Research Group
601 Keystone Park Drive
Suite 700
Morrisville, NC 27560

January 02, 2019

Ms. Amy Robinson
U.S. Environmental Protection Agency, Region 5
PO Box 30260
Lansing, MI 48909
Project Name: Viant EtO

Dear Ms. Amy Robinson,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 12/05/18 10:09.

The test results in this report are in compliance with NELAC accreditation requirements for the certified parameters. All analyses were performed as described in the US EPA-approved QAPP, under the contract for UATMP, NATTS, CSATAM, PAMS and NMOC support (US EPA Contract No. EP-D-14-030). This cover page is an integral part of this report, and any exceptions or comments are noted on the last page.

Release of the data contained in this data package and in the data submitted in the electronic data deliverable, has been authorized by the Program Manager, or the Program Manager's designee as verified by the following signature.

The issuance of the final Certificate of Analysis takes precedence over any previous Report. If you have any questions, please contact me at 919-468-7924.

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

The information contained in this report and its attachment(s) are intended only for the use of the individual to whom it is addressed and may contain information that is privileged, confidential, or exempt from disclosure. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this report is strictly prohibited. If you have received this report in error, please notify julie.swift@erg.com and delete the report without retaining any copies.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

PO Box 30260

Lansing, MI 48909

ATTN: Ms. Amy Robinson

PHONE: (517) 241-2198 FAX: (312) 886-5824

FILE #: 4173.00

REPORTED: 01/02/19 11:52

SUBMITTED: 12/05/18

AQS SITE CODE:

SITE CODE: Viant EtO

ANALYTICAL REPORT FOR SAMPLES

<u>SampleName</u>	<u>LabNumber</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Received</u>
Viant Site #1 C1	8120528-01	Air	11/29/18 23:59	12/05/18 10:09
Viant Site #1 C2	8120528-02	Air	11/29/18 23:59	12/05/18 10:09
Viant Site #4	8120528-05	Air	11/29/18 23:59	12/05/18 10:09



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FILE #: 4173.00

REPORTED: 01/02/19 11:52

SUBMITTED: 12/05/18

AQS SITE CODE:

SITE CODE: Viant EtO

Description: Viant Site #1 C1

Lab ID: 8120528-01

Sampled: 11/29/18 23:59

Pressure @ Receipt: 6.50" Hg

Canister #: A21025

Received: 12/05/18 10:09

Comments: Col 1 Orifice PH2-13 Across from drum room vent

Analyzed: 12/21/18 10:26

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.473	0.85		0.0453



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FILE #: 4173.00

REPORTED: 01/02/19 11:52

SUBMITTED: 12/05/18

AQS SITE CODE:

SITE CODE: Viant EtO

Description: Viant Site #1 C2

Lab ID: 8120528-02

Sampled: 11/29/18 23:59

Pressure @ Receipt: 6.50" Hg

Canister #: A21058

Received: 12/05/18 10:09

Comments: Col 2 Orifice PH2-28

Analyzed: 12/21/18 11:28

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.481	0.87		0.0453



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FILE #: 4173.00

REPORTED: 01/02/19 11:52

SUBMITTED: 12/05/18

AQS SITE CODE:

SITE CODE: Viant EtO

Description: Viant Site #4	Lab ID: 8120528-05	Sampled: 11/29/18 23:59
Pressure @ Receipt: 10.00" Hg	Canister #: A21089	Received: 12/05/18 10:09
Comments: Orifice FC 24-1 NW of building next to street in front of admir		Analyzed: 12/21/18 14:33

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.231	0.42		0.0453



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FILE #: 4173.00
 REPORTED: 01/02/19 11:52
 SUBMITTED: 12/05/18
 AQS SITE CODE:
 SITE CODE: Viant EtO

Analyte	Result	Units	Source Result	RPD	RPD Limit	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Batch B8L2103 - Summa Canister Prep

Blank (B8L2103-BLK1)			Prepared: 12/18/18 Analyzed: 12/21/18			
Ethylene oxide	ND	ppbv				U
Duplicate (B8L2103-DUP1)			Source: 8120528-01 Prepared: 11/29/18 Analyzed: 12/21/18			
Ethylene oxide	0.492	ppbv	0.47	4.06	25	
Duplicate (B8L2103-DUP2)			Source: 8120528-02 Prepared: 11/29/18 Analyzed: 12/21/18			
Ethylene oxide	0.460	ppbv	0.48	4.51	25	



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FILE #: 4173.00
REPORTED: 01/02/19 11:52
SUBMITTED: 12/05/18
AQS SITE CODE:
SITE CODE: Viant EtO

Analyte	Result	Units	% Difference	Limit (%)	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 1812046

Calibration Check (1812046-CCV1)

Prepared & Analyzed: 12/21/18

Ethylene oxide	2.10	ppbv	-16.1	30.00	
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FILE #: 4173.00
REPORTED: 01/02/19 11:52
SUBMITTED: 12/05/18
AQS SITE CODE:
SITE CODE: Viant EtO

Notes and Definitions

U Under Detection Limit
ND Analyte NOT DETECTED
NR Not Reported
MDL Method Detection Limit
RPD Relative Percent Difference

Note: The test results meet all requirements of NELAC; however the following analytes are not accredited: 1,2,4-trimethylbenzene, 1,2-dibromoethane, 1,2-dichloropropane, 1,3,5-trimethylbenzene, 1,3-butadiene, acetylene, acrolein, bromochloromethane, bromodichloromethane, bromoform, carbon disulfide, dibromochloromethane, dichlorodifluoromethane, dichlorotetrafluoroethane, ethyl acrylate, ethyl tert butyl ether, ethylene oxide, hexachloro-1,3-butadiene, octane, propylene, tert amyl methyl ether, tetrachloroethylene, tran-1,2-dichloroethylene, trchlorofluoromethane, and trichlorotrfluoroethane.



Eastern Research Group
601 Keystone Park Drive
Suite 700
Morrisville, NC 27560

December 21, 2018

Ms. Amy Robinson
U.S. Environmental Protection Agency, Region 5
PO Box 30260
Lansing, MI 48909
Project Name: Viant EtO

Dear Ms. Amy Robinson,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 12/05/18 10:09.

The test results in this report are in compliance with NELAC accreditation requirements for the certified parameters. All analyses were performed as described in the US EPA-approved QAPP, under the contract for UATMP, NATTS, CSATAM, PAMS and NMOC support (US EPA Contract No. EP-D-14-030). This cover page is an integral part of this report, and any exceptions or comments are noted on the last page.

Release of the data contained in this data package and in the data submitted in the electronic data deliverable, has been authorized by the Program Manager, or the Program Manager's designee as verified by the following signature.

The issuance of the final Certificate of Analysis takes precedence over any previous Report. If you have any questions, please contact me at 919-468-7924.

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

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ATTN: Ms. Amy Robinson

PHONE: (517) 241-2198 FAX: (312) 886-5824

FILE #: 4173.00

REPORTED: 12/21/18 13:00

SUBMITTED: 12/05/18

AQS SITE CODE:

SITE CODE: Viant EtO

ANALYTICAL REPORT FOR SAMPLES

<u>SampleName</u>	<u>LabNumber</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Received</u>
Viant Site #2	8120528-03	Air	11/29/18 23:59	12/05/18 10:09
Viant Site #3	8120528-04	Air	11/29/18 23:59	12/05/18 10:09



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FILE #: 4173.00

REPORTED: 12/21/18 13:00

SUBMITTED: 12/05/18

AQS SITE CODE:

SITE CODE: Viant EtO

Description: Viant Site #2

Lab ID: 8120528-03

Sampled: 11/29/18 23:59

Pressure @ Receipt: 5.50" Hg

Canister #: SAT088

Received: 12/05/18 10:09

Comments: Orifice PH2-29 SW corner of building

Analyzed: 12/21/18 01:38

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.866	1.56		0.0453



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FILE #: 4173.00

REPORTED: 12/21/18 13:00

SUBMITTED: 12/05/18

AQS SITE CODE:

SITE CODE: Viant EtO

Description: Viant Site #3

Lab ID: 8120528-04

Sampled: 11/29/18 23:59

Pressure @ Receipt: 9.00" Hg

Canister #: SAT077

Received: 12/05/18 10:09

Comments: Orifice FC 24-2 Scrubber & shipping room vent

Analyzed: 12/21/18 02:40

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	42.1	76.00	D	0.283



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FILE #: 4173.00
REPORTED: 12/21/18 13:00
SUBMITTED: 12/05/18
AQS SITE CODE:
SITE CODE: Viant EtO

Analyte	Result	Units	Source Result	RPD	RPD Limit	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Batch B8L2003 - Summa Canister Prep

Blank (B8L2003-BLK1)

Prepared: 12/13/18 Analyzed: 12/20/18

Ethylene oxide	ND	ppbv				U
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REPORTED: 12/21/18 13:00
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AQS SITE CODE:
SITE CODE: Viant EtO

Analyte	Result	Units	% Difference	Limit (%)	Notes
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FILE #: 4173.00
REPORTED: 12/21/18 13:00
SUBMITTED: 12/05/18
AQS SITE CODE:
SITE CODE: Viant EtO

Notes and Definitions

U Under Detection Limit
D This result obtained by dilution.
ND Analyte NOT DETECTED
NR Not Reported
MDL Method Detection Limit
RPD Relative Percent Difference

Note: The test results meet all requirements of NELAC; however the following analytes are not accredited: 1,2,4-trimethylbenzene, 1,2-dibromoethane, 1,2-dichloropropane, 1,3,5-trimethylbenzene, 1,3-butadiene, acetylene, acrolein, bromochloromethane, bromodichloromethane, bromoform, carbon disulfide, dibromochloromethane, dichlorodifluoromethane, dichlorotetrafluoroethane, ethyl acrylate, ethyl tert butyl ether, ethylene oxide, hexachloro-1,3-butadiene, octane, propylene, tert amyl methyl ether, tetrachloroethylene, tran-1,2-dichloroethylene, trchlorofluoromethane, and trichlorotrfluoroethane.