MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: File

FROM: Susan Kilmer

DATE: September 30, 2019

SUBJECT: Monthly Ethylene Oxide Sampling at Viant Medical, Inc. for July 2019

Overview

Viant Medical, Inc. (Viant) in Grand Rapids, Michigan was identified by the United States Environmental Protection Agency (USEPA) National Air Toxics Assessment (NATA) as having elevated ethylene oxide ambient air impacts. Subsequent computer modeling by t Air Quality Division (AQD) showed impacts above the Initial Risk Screening Level (IRSL) at 0.0002 µg/m^3 and Secondary Risk Screening Level (SRSL) at 0.002 µg/m^3. To ascertain the accuracy of the computer model, the AQD initially conducted a Phase I (limited monitoring) sampling study for ethylene oxide in the vicinity of Viant in November 2018. A more robust Phase II sampling effort was conducted in March 2019 near the facility, on the Grand Valley State University campus, locations in the City of Grand Rapids, and several upwind and downwind locations. Results of the Phase I and II sampling are available on the website www.michigan.gov/viant

Ambient air monitoring for ethylene oxide was accomplished using the EPA TO-15 Summa canister method. The EPA's National Contract Laboratory, Eastern Research Group (ERG), performed the analysis. ERG's laboratory detection limit is 0.111 µg/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

As part of a compliance plan related to an enforcement action, Viant has agreed to conduct monthly perimeter sampling for ethylene oxide. Viant contracted with Ramboll US Corporation to conduct ambient air sampling at four outdoor locations as well as one indoor location on a once per month basis. The monthly sampling began in July 2019 and will continue through February 2020. Starting in August 2019, the AQD will collect a side by side outdoor air sample with Viant at one location.

Results

The Ramboll US Corporation collected five samples over a 24-hour period on July 9, 2019. The AQD received the report in late August 2019 and reviewed the data. The results from the July sampling are on page 3 of the attached report and are similar to the AQD's Phase I and II sampling results.

AMBIENT AIR SAMPLING AT VIANT MEDICAL FACILITY, GRAND RAPIDS, MICHIGAN

JULY 2019 SAMPLING EVENT RESULTS

Prepared For:
Hogan Lovells US LLP
Denver, CO

On Behalf Of:
Viant Medical
Grand Rapids, MI

Prepared By:
Ramboll US Corporation
Arlington, VA

Date
August 2019

Project Number
1690010876

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1. INTRODUCTION

Ramboll US Corporation (Ramboll) has prepared this report to summarize the sampling procedures and results of Ramboll's July 2019 air sampling event at the Viant Medical (Viant) facility located at 520 Watson Street Southwest in Grand Rapids, Michigan (the "facility" or the "site"). The sampling event was completed during a 24-hour period between July 9 and 10, 2019, and included the collection of four ambient air samples and one indoor air sample (with co-located canisters) that were submitted for laboratory analysis of ethylene oxide (EtO). The sampling was performed in accordance with the scope of work in the April 2019 Ambient Air Sampling Work Plan (the "April 2019 Work Plan") prepared by Ramboll and approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE, formerly the Michigan Department of Environmental Quality) on June 4, 2019. The sections below describe the sampling methodology and results from the July 2019 sampling event.

2. SAMPLING LOCATIONS

Sampling locations selected during the July 2019 air sampling event were informed by the results of ambient air sampling for EtO conducted by EGLE and Grand Valley State University (GVSU) within and near the site in November 2018. Ramboll's July 2019 air sampling included the collection of four ambient air samples, three of which were located on-site to the south (Location #1), west (Location #2), and north of the site building (Location #4), and one located off-site, approximately 115 feet to the northwest of the site building along Watson Street Southwest (Location #3). Two co-located indoor air samples were collected from inside the scrubber room located in the southeastern part of the site building (Location IA). Sampling locations from this event are depicted on Figure 1 and photographs of each sample are included in Attachment A.

3. METHODOLOGY

All six samples were collected using 6-liter, stainless steel SUMMA® canisters equipped with 24-hour mass flow controllers. Each canister was cleaned and individually certified by Eurofins Air Toxics (EAT), the laboratory used during this project. Mass flow controllers were also individually certified by the laboratory. At Locations #1 through #4, the canisters were secured to utility or light poles using zip-ties and/or ratchet straps to sample air within the breathing zone height (approximately 5-6 feet). The co-located IA samples were suspended within the breathing zone beneath a horizontal support beam located inside the northeast part of the scrubber room. The co-located sample canister inlets were positioned approximately 1 meter away from each other.

Prior to sample collection at each location, a shut-in test was performed on each canister and mass flow controller. The shut-in test (i.e., leak check) was conducted by attaching the mass flow controller to the canister using a quick-connect fitting, placing the brass cap that comes with the mass flow controller to the inlet of the controller, quickly opening and closing the valve on the canister, and inspecting the pressure needle on the mass flow controller gauge to evaluate whether there was a leak in the sampling train. After the shut-in test was successfully performed, the initial pressure (in inches of mercury or in Hg) was recorded, the brass cap was removed from the inlet of the mass flow controller, and the valve on the canister was opened to begin collection of the 24-hour integrated sample. The start time, canister ID, mass flow controller ID, and sample location were recorded for each sample in a field notebook as well as on a tag attached to the canister. A sign was placed on each canister warning potential passersby not to disturb the air sampling device. The condition and

vacuum pressure of each canister was periodically inspected throughout the 24-hour period of sample collection. Wind direction and speeds were documented using local weather station data during the placement of each sample. The wind was predominantly from the southeast during the 24-hour sampling period, which began July 9, 2019 and ended July 10, 2019.

Approximately three hours following the start of sample collection at Location #4, Ramboll field personnel observed that the canister at this location was drawing air at a slower rate than anticipated for a 24-hour sample. Anticipating a defective canister valve, Ramboll personnel replaced the canister with a clean spare. The valve on the new canister at Location #4 was opened immediately after passing a shut-in test. The apparent equipment malfunction at Location #4 resulted in a time-integrated sample that collected air over an approximately 21-hour period. To ensure consistency in end times, Ramboll personnel ended sample collection at Location #4 at approximately the same time as the other samples.

After approximately 24 hours from the start of the event, the valves on the canisters were closed, the mass flow controllers were removed from the canisters, and the end time and final pressure of each sample were recorded. The samples were packed into boxes, shipped overnight via chain-of-custody protocol, and delivered to EAT in Folsom, California the following day for analysis of EtO via modified United States Environmental Protection Agency (USEPA) Method TO-15 by Gas Chromatography with Mass Spectrometry (GC/MS) (USEPA 1999). The modified method developed by EAT was utilized because of its low Minimum Detection Limit (MDL) for EtO of 0.050 parts per billion, volume (ppbv) or 0.090 micrograms per cubic meter ($\mu g/m^3$). The laboratory received the canister samples on July 11, 2019 and analyzed them on July 12 and 17, 2019.

Following inspection of the canisters and mass flow controllers by EAT, the laboratory determined that the mass flow controller used to collect the sample at Location #4 was operating at a rate approximately two-thirds of the normal flow rate (i.e., at a rate of 2.4 instead of 3.5 milliliters per minute [ml/min]). According to EAT, the issue may have been caused by the high relative humidity of the sampling environment. The lower flow rate and associated higher detection limit did not affect the ability to obtain a measurable result, as the EtO concentration at Location #4 was significantly above the MDL.

4. RESULTS

The results from the July 2019 sampling event are reported in Table 1 and Table 2.

Table 1: Outdoor Air Sampling Results, July 9-10, 2019				
Sample Location ID	On-Site	Location Description	EtO Concentration ($\mu g/m^3$)	*Sample-Specific MDL ($\mu g/m^3$)*
1	Yes	South of building in parking lot	0.27	*0.092*
2	Yes	West of building, along western property boundary	0.77	*0.12*
3	No	Northwest of building along Watson Street Southwest	0.98	*0.12*
4	Yes	North of building, northern corner of parking lot	1.8*	*0.31*
*Result represents an average concentration over a 21-hour period.				

Table 2: Indoor Air Sampling Results, July 9-10, 2019			
Sample Location ID	Location Description	EtO Concentration ($\mu g/m^3$)	*Sample-Specific MDL ($\mu g/m^3$)*
IA (co-located samples)	Scrubber room	440; 450 (co-located sample)	*1.9;* *1.7*

EtO was detected in all samples collected. The EtO concentration in outdoor ambient air samples ranged from 0.27 $\mu g/m^3$ at Location #1 to 1.8 $\mu g/m^3$ at Location #4 (Figure 1). EGLE provided meteorological data collected in five-minute intervals from its Grand Rapids – Monroe Street air monitoring site, which is approximately 1.7 miles north-northeast of Viant.[1] According to the Grand Rapids – Monroe Street meteorological data, the wind direction was primarily from the southeast, and to a lesser extent, from the south and southwest (Figure 2). Wind speed varied between 1 and 11 miles per hour (mph), though for the majority of the 24-hour period, wind speeds varied between 2 and 6 mph. The EtO concentration inside the scrubber room was 440/450 $\mu g/m^3$.

5. QUALITY ASSURANCE

Ramboll evaluated data quality based on acceptable criteria specified by USEPA for precision, completeness, bias, and sensitivity in accordance with the Ambient Air Sampling Work Plan. To evaluate the repeatability of sampling procedures, one co-located sample was collected at the IA location during this investigation. The difference in concentrations of EtO detected in these co-located samples was 2.2% and within the acceptable range of 25%, as defined in the April 2019 Work Plan. Additionally, a laboratory replicate sample analysis of the sample collected at Location #1 was performed. In this replicate analysis, the difference in detected EtO was approximately 16% (as

[1] The Grand Rapids – Monroe Street air monitoring site is part of the state's air monitoring network as well as the federal NCore multi-pollutant monitoring network. Meteorological measurements collected at that site are subject to quality assurance procedures in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements Version 2.0.

calculated average detected concentration as the denominator), which also is within the acceptable range of 25%. Given the sensitivity of the laboratory analytical method, the laboratory diluted the samples (particularly the two samples collected inside the scrubber room), which increased the MDLs above the target MDL for each sample. A summary of all quality assurance criteria and a discussion of any deviations and corresponding corrective action related to the July 2019 sampling event are provided in Table 2 below.

Table 2: Quality Control Criteria for TO-15 Sample Collection and Analysis, July 9-10, 2019

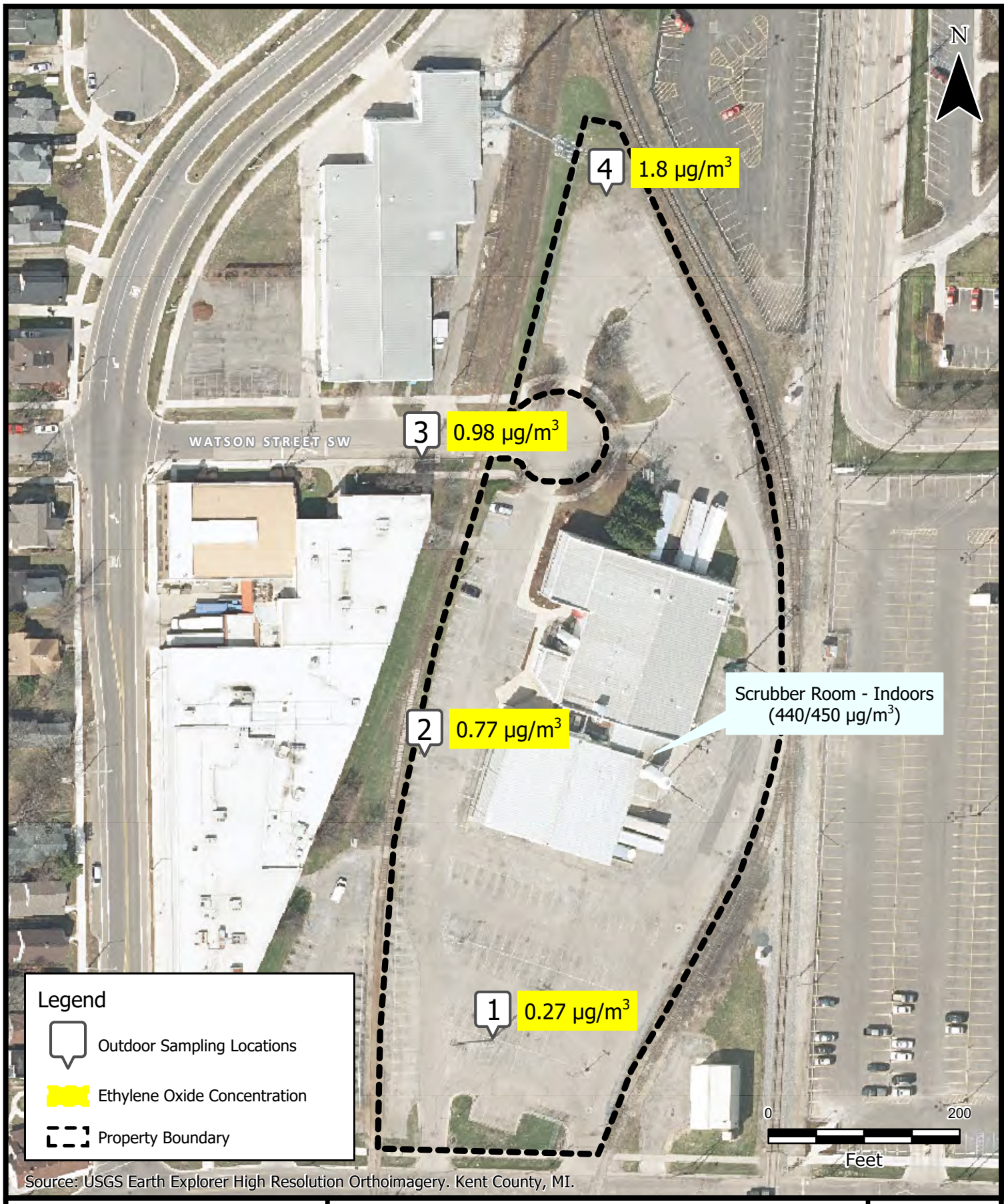
Quality Control Sample	Data Quality Indicators (DQIs)	Frequency	Acceptance Criteria	July 2019 Outcome	Corrective Action
Co-located sample	Precision	1 per day	Within 25%	2.2%	N/A
Replicate sample	Precision	1 per batch	Within 25% for sample concentrations greater than five times reporting limit	16%	N/A
Valid sample count	Completeness	N/A	85% or more of total samples	100%	N/A
Canister batch blank	Bias	After analysis of standards and prior to sample analysis, or when contamination is present.	Below the reporting limit	Below reporting limit of 0.090 µg/m^3	N/A
Method Detection Limit	Sensitivity	1 per method modification	0.05 ppb (0.09 µg/m^3) or less	N/A* (no change to method)	N/A
Sampling period	Field QC	All samples	24 hours +/- 1 hour	All samples except Location #4, which was collected for 21 hours	Flagged sample; Will have a spare mass flow controller available for future sampling events

*Sample-specific MDLs due to dilution are noted in Tables 1 and 2.

6. CONCLUSIONS

EtO was detected at concentrations in ambient air surrounding the Viant facility at concentrations between 0.27 µg/m^3 and 1.8 µg/m^3 during the July 2019 sampling event, with the highest concentrations observed in the downwind direction relative to the site building. The 0.27 µg/m^3 result was from an upwind sample location.

FIGURE 1
MAP OF SAMPLING RESULTS



RAMBOLL

SAMPLING RESULTS (JULY 2019)
VIANT MEDICAL
GRAND RAPIDS, MICHIGAN

FIGURE
1

DRAFTED BY: HA

DATE: 7/31/2019

PROJECT 1690010876

FIGURE 2
WIND ROSE

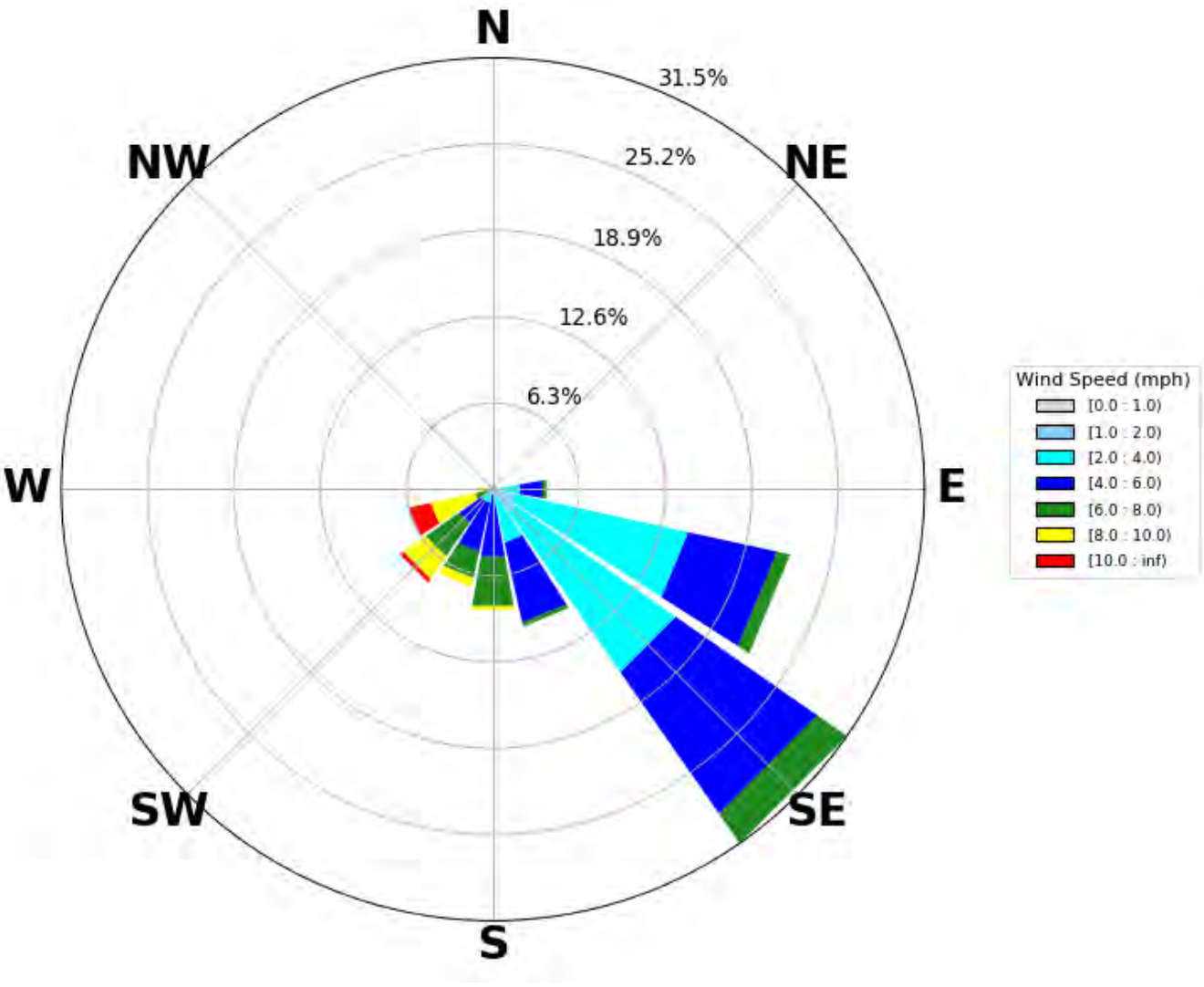
WIND ROSE PLOT:

EGLE Met Station - Grand Rapids, MI

Monroe Ave, **south of Leonard St.**

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:

DATA PERIOD:

Start Date:
7/9/2019 - 12:15

End Date:
7/10/2019 - 13:20

CALM WINDS:

0%

AVG. WIND SPEED:

4.31 mph

WIND ROSE FOR EGLE GRAND RAPIDS METEOROLOGICAL STATION

COMPANY NAME:

Viant Medical

DATE:

7/30/2019

DRAFTED BY:

HA

FIGURE
2

RAMBOLL

APPENDIX A
PHOTOGRAPHS OF SAMPLING LOCATIONS

Photo 1: View of sample collection at Location #1, facing south.

Photo 2: View of sample collection at Location #2, facing west.

RAMBOLL

Site Photographs
Viant Medical
520 Watson Street Southwest, Grand Rapids, Michigan
July 2019

Photo 3: View of sample collection at Location #3, facing north.

Photo 4: View of sample collection at Location #4, facing north. Initial SUMMA canister used (not analyzed) at location pictured at bottom left of photograph.

Photo 5: View of northern portion of scrubber room. Sampling area located behind set of vertical pipes on right side of photograph.

Photo 6: View of sample collection at indoor air (IA) location within scrubber room.

APPENDIX B
LABORATORY ANALYTICAL REPORT

eurofins | Air Toxics

7/24/2019
Ms. Christine Ng
Ramboll Environ
4350 N. Fairfax Drive
Suite 300
Arlington VA 22203

Project Name: Viant Grand Rapids
Project #: 1690010876
Workorder #: 1907228

Dear Ms. Christine Ng

The following report includes the data for the above referenced project for sample(s) received on 7/11/2019 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1907228

Work Order Summary

CLIENT:	Ms. Christine Ng Ramboll Environ 4350 N. Fairfax Drive Suite 300 Arlington, VA 22203	**BILL TO:**	Accounts Payable-Arlington VA Ramboll Environ 4350 N. Fairfax Drive Suite 300 Arlington, VA 22203
PHONE:	703-516-2382	**P.O. #**	WO-2019-ARL-01
FAX:	703-516-2302	**PROJECT #**	1690010876 Viant Grand Rapids
DATE RECEIVED:	07/11/2019	**CONTACT:**	Ausha Scott
DATE COMPLETED:	07/24/2019		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	20190709-1	Modified TO-15 SIM	8 "Hg	5.3 psi
01AA	20190709-1 Lab Duplicate	Modified TO-15 SIM	8 "Hg	5.3 psi
02A	20190709-2	Modified TO-15 SIM	13.3 "Hg	5 psi
03A	20190709-3	Modified TO-15 SIM	13.1 "Hg	4.8 psi
04A	20190709-4	Modified TO-15 SIM	23.7 "Hg	4.8 psi
05A	20190709-IA	Modified TO-15 SIM	9.2 "Hg	5.1 psi
06A	20190709-DUP	Modified TO-15 SIM	7.1 "Hg	4.8 psi
07A	Lab Blank	Modified TO-15 SIM	NA	NA
07B	Lab Blank	Modified TO-15 SIM	NA	NA
08A	CCV	Modified TO-15 SIM	NA	NA
08B	CCV	Modified TO-15 SIM	NA	NA
09A	LCS	Modified TO-15 SIM	NA	NA
09AA	LCSD	Modified TO-15 SIM	NA	NA
09B	LCS	Modified TO-15 SIM	NA	NA
09BB	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY:  DATE: 07/24/19

Technical Director

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA TO-15 Ethylene oxide (SIM)
Ramboll Environ
Workorder# 1907228

Six 6 Liter Summa Canister (100% SIM Ambient) samples were received on July 11, 2019. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the SIM acquisition mode for the measurement of Ethylene oxide in ambient air.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

Sample 20190709-4 was received with significant vacuum remaining in the canister despite the use of a mass flow controller. As a result, the sample collected may not represent the average concentration over the entire monitoring period. Additionally, the residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

Ethylene Oxide is not included on the laboratory's NELAP scope of accreditation for TO-15 SIM. However, TO-15 method and NELAP quality requirements were met.

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for Ethylene Oxide. Concentrations that are below the level at which the canister was certified may be false positives.

Dilution was performed on samples 20190709-IA and 20190709-DUP due to the presence of high level target species.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See Case Narrative

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	20190709-1		
Lab ID:	1907228-01A	**Date/Time Analyzed:**	7/12/19 06:29 PM
Date/Time Collected:	7/10/19 12:18 PM	**Dilution Factor:**	1.86
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msd2.i / 2071211sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	0.092	D	0.17	0.27

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	20190709-1 Lab Duplicate		
Lab ID:	1907228-01AA	**Date/Time Analyzed:**	7/12/19 07:07 PM
Date/Time Collected:	7/10/19 12:18 PM	**Dilution Factor:**	1.86
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msd2.i / 2071212sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	0.092	D	0.17	0.23

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	20190709-2		
Lab ID:	1907228-02A	**Date/Time Analyzed:**	7/12/19 07:46 PM
Date/Time Collected:	7/10/19 12:43 PM	**Dilution Factor:**	2.41
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msd2.i / 2071213sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	0.12	D	0.22	0.77

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	20190709-3		
Lab ID:	1907228-03A	**Date/Time Analyzed:**	7/12/19 08:23 PM
Date/Time Collected:	7/10/19 01:10 PM	**Dilution Factor:**	2.35
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msd2.i / 2071214sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	0.12	D	0.21	0.98

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	20190709-4		
Lab ID:	1907228-04A	**Date/Time Analyzed:**	7/12/19 09:02 PM
Date/Time Collected:	7/10/19 01:32 PM	**Dilution Factor:**	6.29
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msd2.i / 2071215sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	0.31	D	0.57	1.8

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	20190709-IA		
Lab ID:	1907228-05A	**Date/Time Analyzed:**	7/17/19 07:29 PM
Date/Time Collected:	7/10/19 01:20 PM	**Dilution Factor:**	38.8
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msd2.i / 2071715sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	1.9	D	3.5	440

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	20190709-DUP		
Lab ID:	1907228-06A	**Date/Time Analyzed:**	7/17/19 08:05 PM
Date/Time Collected:	7/10/19 01:20 PM	**Dilution Factor:**	34.8
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msd2.i / 2071716sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	1.7	D	3.1	450

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	Lab Blank		
Lab ID:	1907228-07A	**Date/Time Analyzed:**	7/12/19 05:51 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071210sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	0.049	D	0.090	Not Detected

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	Lab Blank		
Lab ID:	1907228-07B	**Date/Time Analyzed:**	7/17/19 06:17 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071713sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethylene Oxide	75-21-8	0.049	D	0.090	Not Detected

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	CCV		
Lab ID:	1907228-08A	**Date/Time Analyzed:**	7/12/19 02:29 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071206sim

Compound	CAS#	%Recovery
Ethylene Oxide	75-21-8	84

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	CCV		
Lab ID:	1907228-08B	**Date/Time Analyzed:**	7/17/19 04:26 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071710sim

Compound	CAS#	%Recovery
Ethylene Oxide	75-21-8	85

D: Analyte not within the DoD scope of accreditation.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	LCS		
Lab ID:	1907228-09A	**Date/Time Analyzed:**	7/12/19 03:07 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071207sim

Compound	CAS#	%Recovery
Ethylene Oxide	75-21-8	82

D: Analyte not within the DoD scope of accreditation.

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	LCSD		
Lab ID:	1907228-09AA	**Date/Time Analyzed:**	7/12/19 03:45 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071208sim

Compound	CAS#	%Recovery
Ethylene Oxide	75-21-8	83

D: Analyte not within the DoD scope of accreditation.

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	LCS		
Lab ID:	1907228-09B	**Date/Time Analyzed:**	7/17/19 05:03 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071711sim

Compound	CAS#	%Recovery
Ethylene Oxide	75-21-8	106

D: Analyte not within the DoD scope of accreditation.

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM
Viant Grand Rapids

Client ID:	LCSD		
Lab ID:	1907228-09BB	**Date/Time Analyzed:**	7/17/19 05:40 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd2.i / 2071712sim

Compound	CAS#	%Recovery
Ethylene Oxide	75-21-8	106

D: Analyte not within the DoD scope of accreditation.

* % Recovery is calculated using unrounded analytical results.

APPENDIX C
LABORATORY CHAIN OF CUSTODY

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

PID: _____ Workorder #: 1907228

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Client: Ramboll
Project Name: Vint Grand Rapids
Project Manager: Christine Ng
Project #: 1690010876
Sampler: Mick Martin
Site Name: Vint

Special Instructions/Notes:
SIM analysis of ethylene oxide

Notes: Canister # N2527 did not appear to be taking in air after ~3 hours. This can was only used for 20190709-4. Can # N0112 also appeared to be slow taking in air.

Turnaround Time (Rush surcharges may apply)
Standard ✓ Rush _____ (specify)

Lab ID	Field Sample Identification(Location)	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Canister Vacuum/Pressure		Lab Use Only		Requested Analyses			
				Date	Time	Date	Time	Initial (in Hg)	Final (in Hg)	Receipt	Final (psig) Gas: N_2 / He	Ethylene Oxide			
01A	20190709-1	00567	22807	7/9/2019	1218	7/10/2019	1218	-28	-7			✓			
02A	20190709-2	00524	22477		1243		1243	-28.5	-12.5			✓			
03A	20190709-3	N1774	20562		1310		1310	-29.5	-13.5			✓			
04A	20190709-4	N0112	23862		1651		1332	-29.5	-23.5			✓			
05A	20190709-IA	N2556	22571		1358		1320	-29	-8			✓			
06A	20190709-DUP	N1672	24091		1358		1320	-28	-5.5			✓			

7/10/19

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Ramboll	7/10/19	1430	FAT	7/11/19	0940

Lab Use Only

Shipper Name: FEDEX | Custody Seals Intact? | Yes | No | None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922