

8/20/2024

Mr. Jon Laurance

GeoSyntec Consultants

920 SW Sixth Avenue, Suite 600

Portland OR 97204

Project Name: Cascade SVE

Project #: PNG0564524

Workorder #: 2408153

Dear Mr. Jon Laurance

The following report includes the data for the above referenced project for sample(s) received on 8/7/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-15 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 LLC. 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: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran

Project Manager

WORK ORDER #: 2408153

Work Order Summary

CLIENT:	Mr. Jon Laurance GeoSyntec Consultants 920 SW Sixth Avenue, Suite 600 Portland, OR 97204	BILL TO:	Accounts Payable Cascade Corporation 2201 NE 201st Avenue Fairview, OR 97024
PHONE:	503-222-9518	P.O. #	
FAX:	503-242-1416	PROJECT #	PNG0564524 Cascade SVE
DATE RECEIVED:	08/07/2024	CONTACT:	Monica Tran
DATE COMPLETED:	08/20/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVE-EFF-080624	Modified TO-15	6.7 "Hg	9.9 psi
02A	VW-17d-95.5-080624	Modified TO-15	10.4 "Hg	9.6 psi
03A	VMW E-080624	Modified TO-15	6.1 "Hg	9.9 psi
04A	VMW G-080624	Modified TO-15	8.4 "Hg	10.1 psi
05A	VMW J2-080624	Modified TO-15	6.3 "Hg	9.8 psi
06A	VMW K-080624	Modified TO-15	6.7 "Hg	10 psi
07A	Lab Blank	Modified TO-15	NA	NA
07B	Lab Blank	Modified TO-15	NA	NA
08A	CCV	Modified TO-15	NA	NA
08B	CCV	Modified TO-15	NA	NA
09A	LCS	Modified TO-15	NA	NA
09AA	LCSD	Modified TO-15	NA	NA
09B	LCS	Modified TO-15	NA	NA
09BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 08/20/24

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2703122, NH NELAP-209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
 Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

LABORATORY NARRATIVE
Modified TO-15
GeoSyntec Consultants
Workorder# 2408153

Six 1 Liter Summa Canister (100% Certified) samples were received on August 07, 2024. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

The Chain of Custody (COC) information for sample VW-17d-95.5-080624 did not match the information on the canister with regard to canister barcode. The sample labeled 000003022 on the COC is labeled as 0000003022 on the canister. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Analytical Notes

Dilution was performed on samples SVE-EFF-080624, VMW E-080624, VMW J2-080624, and VMW K-080624 due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight 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.
- E - Exceeds instrument calibration range.
- 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.

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

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SVE-EFF-080624

Lab ID#: 2408153-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	1.1	7.8	4.3	31
Trichloroethene	1.1	78	5.8	420
Tetrachloroethene	1.1	5.0	7.3	34

Client Sample ID: VW-17d-95.5-080624

Lab ID#: 2408153-02A

No Detections Were Found.

Client Sample ID: VMW E-080624

Lab ID#: 2408153-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	1.0	8.3	4.2	33
Trichloroethene	1.0	99	5.6	530
Tetrachloroethene	1.0	6.4	7.1	44

Client Sample ID: VMW G-080624

Lab ID#: 2408153-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.23	2.2	0.93	8.7
Trichloroethene	0.23	9.6	1.2	52
Tetrachloroethene	0.23	1.7	1.6	11

Client Sample ID: VMW J2-080624

Lab ID#: 2408153-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.46	2.4	1.8	9.4
Trichloroethene	0.46	24	2.5	130
Tetrachloroethene	0.46	1.9	3.1	13

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: VMW K-080624

Lab ID#: 2408153-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	1.1	7.3	4.3	29
Trichloroethene	1.1	59	5.8	320
Tetrachloroethene	1.1	2.9	7.3	20

Client Sample ID: SVE-EFF-080624

Lab ID#: 2408153-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081911sim	Date of Collection:	8/6/24 1:30:00 PM
Dil. Factor:	10.8	Date of Analysis:	8/19/24 04:32 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
cis-1,2-Dichloroethene	1.1	7.8	4.3	31
Trichloroethene	1.1	78	5.8	420
Tetrachloroethene	1.1	5.0	7.3	34

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: VW-17d-95.5-080624

Lab ID#: 2408153-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081517sim	Date of Collection: 8/6/24 1:44:00 PM
Dil. Factor:	2.53	Date of Analysis: 8/16/24 01:00 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.25	Not Detected	0.65	Not Detected
1,1-Dichloroethene	0.25	Not Detected	1.0	Not Detected
cis-1,2-Dichloroethene	0.25	Not Detected	1.0	Not Detected
Trichloroethene	0.25	Not Detected	1.4	Not Detected
Tetrachloroethene	0.25	Not Detected	1.7	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: VMW E-080624

Lab ID#: 2408153-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081910sim	Date of Collection:	8/6/24 2:05:00 PM
Dil. Factor:	10.5	Date of Analysis:	8/19/24 03:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.2	Not Detected
cis-1,2-Dichloroethene	1.0	8.3	4.2	33
Trichloroethene	1.0	99	5.6	530
Tetrachloroethene	1.0	6.4	7.1	44

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: VMW G-080624

Lab ID#: 2408153-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081519sim	Date of Collection:	8/6/24 2:30:00 PM
Dil. Factor:	2.34	Date of Analysis:	8/16/24 02:38 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.23	Not Detected	0.60	Not Detected
1,1-Dichloroethene	0.23	Not Detected	0.93	Not Detected
cis-1,2-Dichloroethene	0.23	2.2	0.93	8.7
Trichloroethene	0.23	9.6	1.2	52
Tetrachloroethene	0.23	1.7	1.6	11

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: VMW J2-080624

Lab ID#: 2408153-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081520sim	Date of Collection:	8/6/24 2:54:00 PM
Dil. Factor:	4.59	Date of Analysis:	8/16/24 03:20 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.46	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.46	Not Detected	1.8	Not Detected
cis-1,2-Dichloroethene	0.46	2.4	1.8	9.4
Trichloroethene	0.46	24	2.5	130
Tetrachloroethene	0.46	1.9	3.1	13

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: VMW K-080624

Lab ID#: 2408153-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081521sim	Date of Collection:	8/6/24 3:25:00 PM
Dil. Factor:	10.8	Date of Analysis:	8/16/24 03:59 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
cis-1,2-Dichloroethene	1.1	7.3	4.3	29
Trichloroethene	1.1	59	5.8	320
Tetrachloroethene	1.1	2.9	7.3	20

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: Lab Blank

Lab ID#: 2408153-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081507simd	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/15/24 03:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: Lab Blank

Lab ID#: 2408153-07B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081907simd	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/19/24 12:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: CCV

Lab ID#: 2408153-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081503sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/15/24 12:17 PM

Compound	%Recovery
Vinyl Chloride	80
1,1-Dichloroethene	78
cis-1,2-Dichloroethene	78
Trichloroethene	83
Tetrachloroethene	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: CCV

Lab ID#: 2408153-08B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081903sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/24 09:51 AM

Compound	%Recovery
Vinyl Chloride	76
1,1-Dichloroethene	75
cis-1,2-Dichloroethene	76
Trichloroethene	84
Tetrachloroethene	90

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: LCS

Lab ID#: 2408153-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081504sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/15/24 01:14 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	84	70-130
1,1-Dichloroethene	78	70-130
cis-1,2-Dichloroethene	80	70-130
Trichloroethene	86	70-130
Tetrachloroethene	90	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCSD

Lab ID#: 2408153-09AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081505sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/15/24 01:52 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	79	70-130
1,1-Dichloroethene	75	70-130
cis-1,2-Dichloroethene	79	70-130
Trichloroethene	85	70-130
Tetrachloroethene	88	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: LCS

Lab ID#: 2408153-09B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081904sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/24 10:29 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	76	70-130
1,1-Dichloroethene	74	70-130
cis-1,2-Dichloroethene	75	70-130
Trichloroethene	83	70-130
Tetrachloroethene	87	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCSD

Lab ID#: 2408153-09BB

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	16081905sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/19/24 11:07 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	74	70-130
1,1-Dichloroethene	70	70-130
cis-1,2-Dichloroethene	73	70-130
Trichloroethene	83	70-130
Tetrachloroethene	85	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	105	70-130

Method : Modified TO-15-LL (Sh)-1,1-DCE, c-1,2-DCE, PCE, TCE, & VC

CAS Number	Compound	Rpt. Limit (ppbv)
75-01-4	Vinyl Chloride	0.10
75-35-4	1,1-Dichloroethene	0.10
156-59-2	cis-1,2-Dichloroethene	0.10
79-01-6	Trichloroethene	0.10
127-18-4	Tetrachloroethene	0.10

	Surrogate	Method Limits
17060-07-0	1,2-Dichloroethane-d4	70-130
2037-26-5	Toluene-d8	70-130
460-00-4	4-Bromofluorobenzene	70-130