

11/19/2024

Mr. Jon Laurance

GeoSyntec Consultants

920 SW Sixth Avenue, Suite 600

Portland OR 97204

Project Name: Cascade SVE

Project #: PNG0564S24

Workorder #: 2411083

Dear Mr. Jon Laurance

The following report includes the data for the above referenced project for sample(s) received on 11/6/2024 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 #: 2411083**

Work Order Summary

<b>CLIENT:</b>	Mr. Jon Laurance GeoSyntec Consultants 920 SW Sixth Avenue, Suite 600 Portland, OR 97204	<b>BILL TO:</b>	Accounts Payable Cascade Corporation 2201 NE 201st Avenue Fairview, OR 97024
<b>PHONE:</b>	503-222-9518	<b>P.O. #</b>	
<b>FAX:</b>	503-242-1416	<b>PROJECT #</b>	PNG0564S24 Cascade SVE
<b>DATE RECEIVED:</b>	11/06/2024	<b>CONTACT:</b>	Monica Tran
<b>DATE COMPLETED:</b>	11/15/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVE-EFF-110524	Modified TO-15	3.9 "Hg	9.8 psi
02A	VW-17d-95.5-110524	Modified TO-15	7.3 "Hg	10.1 psi
03A	VMWE-110524	Modified TO-15	2.8 "Hg	9.5 psi
04A	VMWJ2-110524	Modified TO-15	6.5 "Hg	10 psi
05A	VMWG-110524	Modified TO-15	3.7 "Hg	10 psi
06A	VMWK-110524	Modified TO-15	4.9 "Hg	9.9 psi
07A	Lab Blank	Modified TO-15	NA	NA
08A	CCV	Modified TO-15	NA	NA
09A	LCS	Modified TO-15	NA	NA
09AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 11/19/24  
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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# 2411083**

Six 1 Liter Summa Canister (100% Certified) samples were received on November 06, 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**

There were no receiving discrepancies.

**Analytical Notes**

Dilution was performed on sample VMWK-110524 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-110524**

**Lab ID#: 2411083-01A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.19	9.5	0.76	38
Trichloroethene	0.19	72	1.0	380
Tetrachloroethene	0.19	4.9	1.3	33

**Client Sample ID: VW-17d-95.5-110524**

**Lab ID#: 2411083-02A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.22	6.3	0.88	25
Trichloroethene	0.22	43	1.2	230
Tetrachloroethene	0.22	4.0	1.5	27

**Client Sample ID: VMWE-110524**

**Lab ID#: 2411083-03A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.18	8.4	0.72	33
Trichloroethene	0.18	73	0.98	390
Tetrachloroethene	0.18	5.9	1.2	40

**Client Sample ID: VMWJ2-110524**

**Lab ID#: 2411083-04A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.21	4.7	0.85	19
Trichloroethene	0.21	41	1.2	220
Tetrachloroethene	0.21	3.6	1.4	25

**Client Sample ID: VMWG-110524**

**Lab ID#: 2411083-05A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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**Summary of Detected Compounds  
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: VMWG-110524**

**Lab ID#: 2411083-05A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
cis-1,2-Dichloroethene	0.19	2.7	0.76	10
Trichloroethene	0.19	11	1.0	62
Tetrachloroethene	0.19	2.4	1.3	16

**Client Sample ID: VMWK-110524**

**Lab ID#: 2411083-06A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
cis-1,2-Dichloroethene	0.50	20	2.0	78
Trichloroethene	0.50	150	2.7	800
Tetrachloroethene	0.50	7.4	3.4	50

Client Sample ID: SVE-EFF-110524

Lab ID#: 2411083-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	22111317	Date of Collection:	11/5/24 1:20:00 PM
Dil. Factor:	1.92	Date of Analysis:	11/13/24 09:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.19	Not Detected	0.49	Not Detected
1,1-Dichloroethene	0.19	Not Detected	0.76	Not Detected
cis-1,2-Dichloroethene	0.19	9.5	0.76	38
Trichloroethene	0.19	72	1.0	380
Tetrachloroethene	0.19	4.9	1.3	33

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: VW-17d-95.5-110524

Lab ID#: 2411083-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	22111314	Date of Collection:	11/5/24 1:45:00 PM
Dil. Factor:	2.23	Date of Analysis:	11/13/24 07:14 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.22	Not Detected	0.57	Not Detected
1,1-Dichloroethene	0.22	Not Detected	0.88	Not Detected
cis-1,2-Dichloroethene	0.22	6.3	0.88	25
Trichloroethene	0.22	43	1.2	230
Tetrachloroethene	0.22	4.0	1.5	27

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: VMWE-110524

Lab ID#: 2411083-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	22111318	Date of Collection:	11/5/24 2:00:00 PM
Dil. Factor:	1.82	Date of Analysis:	11/13/24 09:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.18	Not Detected	0.46	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.72	Not Detected
cis-1,2-Dichloroethene	0.18	8.4	0.72	33
Trichloroethene	0.18	73	0.98	390
Tetrachloroethene	0.18	5.9	1.2	40

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: VMWJ2-110524

Lab ID#: 2411083-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	22111315	Date of Collection:	11/5/24 2:40:00 PM
Dil. Factor:	2.14	Date of Analysis:	11/13/24 07:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.21	Not Detected	0.55	Not Detected
1,1-Dichloroethene	0.21	Not Detected	0.85	Not Detected
cis-1,2-Dichloroethene	0.21	4.7	0.85	19
Trichloroethene	0.21	41	1.2	220
Tetrachloroethene	0.21	3.6	1.4	25

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: VMWG-110524

Lab ID#: 2411083-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	22111316	Date of Collection:	11/5/24 2:18:00 PM
Dil. Factor:	1.92	Date of Analysis:	11/13/24 08:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.19	Not Detected	0.49	Not Detected
1,1-Dichloroethene	0.19	Not Detected	0.76	Not Detected
cis-1,2-Dichloroethene	0.19	2.7	0.76	10
Trichloroethene	0.19	11	1.0	62
Tetrachloroethene	0.19	2.4	1.3	16

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: VMWK-110524

Lab ID#: 2411083-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	22111319	Date of Collection:	11/5/24 2:55:00 PM
Dil. Factor:	5.00	Date of Analysis:	11/13/24 10:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	20	2.0	78
Trichloroethene	0.50	150	2.7	800
Tetrachloroethene	0.50	7.4	3.4	50

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: Lab Blank

Lab ID#: 2411083-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	22111306e	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/13/24 11:56 AM

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	101	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: CCV

Lab ID#: 2411083-08A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>22111302</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 11/13/24 09:23 AM</b>

<b>Compound</b>	<b>%Recovery</b>
Vinyl Chloride	85
1,1-Dichloroethene	85
cis-1,2-Dichloroethene	86
Trichloroethene	93
Tetrachloroethene	85

**Container Type: NA - Not Applicable**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCS

Lab ID#: 2411083-09A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>22111303</b>	<b>Date of Collection:</b> NA
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 11/13/24 10:00 AM

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Vinyl Chloride	93	70-130
1,1-Dichloroethene	92	70-130
cis-1,2-Dichloroethene	96	70-130
Trichloroethene	100	70-130
Tetrachloroethene	95	70-130

**Container Type: NA - Not Applicable**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCSD

Lab ID#: 2411083-09AA

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>22111304</b>	<b>Date of Collection:</b> NA
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 11/13/24 10:36 AM

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Vinyl Chloride	93	70-130
1,1-Dichloroethene	92	70-130
cis-1,2-Dichloroethene	95	70-130
Trichloroethene	100	70-130
Tetrachloroethene	97	70-130

**Container Type: NA - Not Applicable**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	106	70-130

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

<b>CAS Number</b>	<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>
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

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