

4/11/2019
Mr. Jim Tomalia
Arcadis U.S., Inc.
28550 Cabot Dr.
Suite 500
Novi MI 48377

Project Name: Ford LTP
Project #: MI001454.0006
Workorder #: 1903633R1

Dear Mr. Jim Tomalia

The following report includes the data for the above referenced project for sample(s) received on 3/26/2019 at Air Toxics Ltd.

The data and associated QC analyzed by 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 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

WORK ORDER #: 1903633R1

Work Order Summary

CLIENT:	Mr. Jim Tomalia Arcadis U.S., Inc. 28550 Cabot Dr. Suite 500 Novi, MI 48377	BILL TO:	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
PHONE:	517-819-0356	P.O. #	MI001454.0004.0001B
FAX:		PROJECT #	MI001454.0006 Ford LTP
DATE RECEIVED:	03/26/2019	CONTACT:	Ausha Scott
DATE COMPLETED:	03/30/2019		
DATE REISSUED:	04/11/2019		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A(cancelled)	SVMP-3S-3.5_032119	TO-15	1.8 "Hg	15.5 psi
02A	SVMP-3D-7_032119	TO-15	4.7 "Hg	15.6 psi
03A	SVMP-02S-4.5_032119	TO-15	3.9 "Hg	15.9 psi
04A	DUP-01	TO-15	4.5 "Hg	16 psi
05A	SVMP-06-4.5_032119	TO-15	4.9 "Hg	15.8 psi
06A	SVMP-12-3.5_032119	TO-15	4.1 "Hg	16 psi
07A	SVMP-24-4_032119	TO-15	4.5 "Hg	15.7 psi
08A	SVMP-25D-6_032119	TO-15	6.7 "Hg	15.1 psi
09A	SVMP-25S-3_032119	TO-15	4.9 "Hg	16 psi
10A	SVMP-26-4_032119	TO-15	5.1 "Hg	16.1 psi
11A	Lab Blank	TO-15	NA	NA
12A	CCV	TO-15	NA	NA
13A	LCS	TO-15	NA	NA
13AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 04/11/19

Certification numbers: AZ Licensure AZ0775, FL NELAP - E8 , LA NELAP - 02089, NH NELAP - 209218, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-18-13, UT NELAP CA009332018-10, VA NELAP - 9505, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005-011, Effective date: 10/18/2018, Expiration date: 10/17/2019.

Eurofins Air Toxics LLC. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
EPA Method TO-15
Arcadis U.S., Inc.
Workorder# 1903633R1

Ten 1 Liter Summa Canister (100% Certified) samples were received on March 26, 2019. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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 SVMP-35-3.5_032119 was cancelled on 03/28/2019 per client's request.

The work order was reissued on 4/11/2019 to correct identification of samples SVMP-3S-3.5_032119 and SVMP-3D-7_032119 due to laboratory transcription error.

Analytical Notes

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified (0.2 ppbv for compounds reported at 0.5 ppbv and 0.8 ppbv for compounds reported at 2.0 ppbv) may be false positives.

Definition of Data Qualifying Flags

Ten 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.

M - Reported value may be biased due to apparent matrix interferences.

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

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	SVMP-3D-7_032119	Date/Time Analyzed:	3/28/19 03:51 PM
Lab ID:	1903633R1-02A	Dilution Factor:	2.44
Date/Time Collected:	3/21/19 11:35 AM	Instrument/Filename:	msd3.i / 3032808
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	3.9	4.8	Not Detected
1,4-Dioxane	123-91-1	1.6	8.8	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.1	3.9	4.8	Not Detected
Tetrachloroethene	127-18-4	1.6	6.6	8.3	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.4	3.9	4.8	Not Detected
Trichloroethene	79-01-6	1.0	5.2	6.6	Not Detected
Vinyl Chloride	75-01-4	1.7	2.5	3.1	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	105
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	SVMP-02S-4.5_032119	Date/Time Analyzed:	3/28/19 04:17 PM
Lab ID:	1903633R1-03A	Dilution Factor:	2.39
Date/Time Collected:	3/21/19 10:53 AM	Instrument/Filename:	msd3.i / 3032809
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	3.8	4.7	Not Detected
1,4-Dioxane	123-91-1	1.6	8.6	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	3.8	4.7	Not Detected
Tetrachloroethene	127-18-4	1.6	6.5	8.1	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.4	3.8	4.7	Not Detected
Trichloroethene	79-01-6	1.0	5.1	6.4	Not Detected
Vinyl Chloride	75-01-4	1.7	2.4	3.0	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	DUP-01	Date/Time Analyzed:	3/28/19 04:43 PM
Lab ID:	1903633R1-04A	Dilution Factor:	2.46
Date/Time Collected:	3/21/19 12:00 AM	Instrument/Filename:	msd3.i / 3032810
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.8	3.9	4.9	Not Detected
1,4-Dioxane	123-91-1	1.6	8.9	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.1	3.9	4.9	Not Detected
Tetrachloroethene	127-18-4	1.7	6.7	8.3	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.5	3.9	4.9	Not Detected
Trichloroethene	79-01-6	1.0	5.3	6.6	Not Detected
Vinyl Chloride	75-01-4	1.8	2.5	3.1	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	106
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	100

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	SVMP-06-4.5_032119	Date/Time Analyzed:	3/28/19 05:10 PM
Lab ID:	1903633R1-05A	Dilution Factor:	2.48
Date/Time Collected:	3/21/19 12:21 PM	Instrument/Filename:	msd3.i / 3032811
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.8	3.9	4.9	Not Detected
1,4-Dioxane	123-91-1	1.6	8.9	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.1	3.9	4.9	Not Detected
Tetrachloroethene	127-18-4	1.7	6.7	8.4	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.5	3.9	4.9	Not Detected
Trichloroethene	79-01-6	1.1	5.3	6.7	Not Detected
Vinyl Chloride	75-01-4	1.8	2.5	3.2	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	SVMP-12-3.5_032119	Date/Time Analyzed:	3/28/19 02:58 PM
Lab ID:	1903633R1-06A	Dilution Factor:	2.42
Date/Time Collected:	3/21/19 01:52 PM	Instrument/Filename:	msd3.i / 3032806
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	3.8	4.8	Not Detected
1,4-Dioxane	123-91-1	1.6	8.7	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	3.8	4.8	Not Detected
Tetrachloroethene	127-18-4	1.6	6.6	8.2	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.4	3.8	4.8	Not Detected
Trichloroethene	79-01-6	1.0	5.2	6.5	Not Detected
Vinyl Chloride	75-01-4	1.7	2.5	3.1	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	106
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	SVMP-24-4_032119	Date/Time Analyzed:	3/28/19 05:36 PM
Lab ID:	1903633R1-07A	Dilution Factor:	2.43
Date/Time Collected:	3/21/19 02:47 PM	Instrument/Filename:	msd3.i / 3032812
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	3.8	4.8	Not Detected
1,4-Dioxane	123-91-1	1.6	8.8	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	3.8	4.8	Not Detected
Tetrachloroethene	127-18-4	1.6	6.6	8.2	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.4	3.8	4.8	Not Detected
Trichloroethene	79-01-6	1.0	5.2	6.5	Not Detected
Vinyl Chloride	75-01-4	1.7	2.5	3.1	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	SVMP-25D-6_032119	Date/Time Analyzed:	3/28/19 06:02 PM
Lab ID:	1903633R1-08A	Dilution Factor:	2.61
Date/Time Collected:	3/21/19 03:36 PM	Instrument/Filename:	msd3.i / 3032813
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.9	4.1	5.2	Not Detected
1,4-Dioxane	123-91-1	1.7	9.4	19	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.1	4.1	5.2	Not Detected
Tetrachloroethene	127-18-4	1.8	7.1	8.8	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.6	4.1	5.2	Not Detected
Trichloroethene	79-01-6	1.1	5.6	7.0	Not Detected
Vinyl Chloride	75-01-4	1.9	2.7	3.3	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	104
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS FULL SCAN
Ford LTP

Client ID:	SVMP-25S-3_032119	Date/Time Analyzed:	3/28/19 09:23 PM
Lab ID:	1903633R1-09A	Dilution Factor:	2.50
Date/Time Collected:	3/21/19 03:36 PM	Instrument/Filename:	msd3.i / 3032816
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.8	4.0	5.0	Not Detected
1,4-Dioxane	123-91-1	1.6	9.0	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.1	4.0	5.0	Not Detected
Tetrachloroethene	127-18-4	1.7	6.8	8.5	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.5	4.0	5.0	Not Detected
Trichloroethene	79-01-6	1.1	5.4	6.7	Not Detected
Vinyl Chloride	75-01-4	1.8	2.6	3.2	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS FULL SCAN
Ford LTP

Client ID:	SVMP-26-4_032119	Date/Time Analyzed:	3/28/19 09:49 PM
Lab ID:	1903633R1-10A	Dilution Factor:	2.52
Date/Time Collected:	3/21/19 04:23 PM	Instrument/Filename:	msd3.i / 3032817
Media:	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.8	4.0	5.0	Not Detected
1,4-Dioxane	123-91-1	1.6	9.1	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.1	4.0	5.0	Not Detected
Tetrachloroethene	127-18-4	1.7	6.8	8.5	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.5	4.0	5.0	Not Detected
Trichloroethene	79-01-6	1.1	5.4	6.8	Not Detected
Vinyl Chloride	75-01-4	1.8	2.6	3.2	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	100

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	Lab Blank	Date/Time Analyzed:	3/28/19 01:31 PM
Lab ID:	1903633R1-11A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd3.i / 3032805c
Media:	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.71	1.6	2.0	Not Detected
1,4-Dioxane	123-91-1	0.65	3.6	7.2	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.44	1.6	2.0	Not Detected
Tetrachloroethene	127-18-4	0.68	2.7	3.4	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.59	1.6	2.0	Not Detected
Trichloroethene	79-01-6	0.43	2.1	2.7	Not Detected
Vinyl Chloride	75-01-4	0.72	1.0	1.3	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	105
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	96

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	CCV	Date/Time Analyzed:	3/28/19 10:32 AM
Lab ID:	1903633R1-12A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd3.i / 3032802
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	108
1,4-Dioxane	123-91-1	91
cis-1,2-Dichloroethene	156-59-2	103
Tetrachloroethene	127-18-4	107
trans-1,2-Dichloroethene	156-60-5	105
Trichloroethene	79-01-6	101
Vinyl Chloride	75-01-4	103

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	105
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	LCS	Date/Time Analyzed:	3/28/19 11:39 AM
Lab ID:	1903633R1-13A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd3.i / 3032803
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	104
1,4-Dioxane	123-91-1	90
cis-1,2-Dichloroethene	156-59-2	111
Tetrachloroethene	127-18-4	107
trans-1,2-Dichloroethene	156-60-5	89
Trichloroethene	79-01-6	102
Vinyl Chloride	75-01-4	99

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	101

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS FULL SCAN
 Ford LTP

Client ID:	LCSD	Date/Time Analyzed:	3/28/19 01:04 PM
Lab ID:	1903633R1-13AA	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd3.i / 3032804
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	105
1,4-Dioxane	123-91-1	91
cis-1,2-Dichloroethene	156-59-2	111
Tetrachloroethene	127-18-4	109
trans-1,2-Dichloroethene	156-60-5	89
Trichloroethene	79-01-6	103
Vinyl Chloride	75-01-4	106

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	98

* % Recovery is calculated using unrounded analytical results.