

6/30/2020

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

Project Name: Ford LTP
Project #: 30042006.0301.02
Workorder #: 2006644

Dear Mr. Jim Tomalia

The following report includes the data for the above referenced project for sample(s) received on 6/23/2020 at Air Toxics Ltd.

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 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 #: 2006644

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. #	30042006
FAX:		PROJECT #	30042006.0301.02 Ford LTP
DATE RECEIVED:	06/23/2020	CONTACT:	Ausha Scott
DATE COMPLETED:	06/30/2020		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	IAF-12400BELDEN-11_061720	Modified TO-15	6.3 "Hg	5.1 psi
02A	IAF-12400BELDEN-12_061720	Modified TO-15	5.1 "Hg	4.8 psi
03A	AA-12400BELDEN-01_061720	Modified TO-15	6.3 "Hg	5 psi
04A	IAF-12400BELDEN-03_061720	Modified TO-15	7.1 "Hg	5.1 psi
05A	IAF-12400BELDEN-05_061720	Modified TO-15	6.7 "Hg	4.9 psi
06A	IAF-12400BELDEN-04_061720	Modified TO-15	5.9 "Hg	5 psi
07A	IAF-12400BELDEN-07_061720	Modified TO-15	6.3 "Hg	5 psi
08A	IAF-12400BELDEN-06_061720	Modified TO-15	6.9 "Hg	5.1 psi
09A	IAF-12400BELDEN-08_061720	Modified TO-15	5.5 "Hg	5 psi
10A	IAF-12400BELDEN-09_061720	Modified TO-15	5.3 "Hg	4.8 psi
11A	IAF-12400BELDEN-01_061720	Modified TO-15	5.5 "Hg	5.1 psi
12A	IAF-12400BELDEN-02_061720	Modified TO-15	6.7 "Hg	4.8 psi
13A	IAF-12400BELDEN-10_061720	Modified TO-15	5.7 "Hg	4.8 psi
14A	Lab Blank	Modified TO-15	NA	NA
14B	Lab Blank	Modified TO-15	NA	NA
15A	CCV	Modified TO-15	NA	NA
15B	CCV	Modified TO-15	NA	NA
16A	LCS	Modified TO-15	NA	NA
16AA	LCSD	Modified TO-15	NA	NA
16B	LCS	Modified TO-15	NA	NA
16BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 06/30/20

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209218, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-18-13, UT NELAP – CA009332019-11, VA NELAP - 460197, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-011, Effective date: 10/18/2019, Expiration date: 10/17/2020.

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
Modified TO-15
Arcadis U.S., Inc.
Workorder# 2006644

Thirteen 6 Liter Summa Canister (100% Cert Ambient) samples were received on June 23, 2020. 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	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	$\leq 30\%$ 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

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 may be false positives.

Samples IAF-12400BELDEN-11_061720, IAF-12400BELDEN-12_061720, IAF-12400BELDEN-03_061720, IAF-12400BELDEN-05_061720, IAF-12400BELDEN-04_061720, IAF-12400BELDEN-07_061720, IAF-12400BELDEN-06_061720, IAF-12400BELDEN-08_061720, IAF-12400BELDEN-09_061720, IAF-12400BELDEN-01_061720, IAF-12400BELDEN-02_061720 and IAF-12400BELDEN-10_061720 were transferred from Low Level analysis to full scan TO-15 due to high levels of target compounds.

Dilution was performed on samples IAF-12400BELDEN-11_061720, IAF-12400BELDEN-12_061720, IAF-12400BELDEN-03_061720, IAF-12400BELDEN-05_061720, IAF-12400BELDEN-04_061720, IAF-12400BELDEN-07_061720, IAF-12400BELDEN-06_061720, IAF-12400BELDEN-08_061720, IAF-12400BELDEN-09_061720, IAF-12400BELDEN-01_061720, IAF-12400BELDEN-02_061720 and IAF-12400BELDEN-10_061720 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

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-11_061720	Date/Time Analyzed:	6/26/20 03:49 PM
Lab ID:	2006644-01A	Dilution Factor:	5.69
Date/Time Collected:	6/17/20 02:59 PM	Instrument/Filename:	msd14.i / 14062615
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	68	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	68	110	Not Detected
Tetrachloroethene	127-18-4	59	120	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	68	110	11000
Trichloroethene	79-01-6	28	92	150	40 J
Vinyl Chloride	75-01-4	26	44	73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-12_061720	Date/Time Analyzed:	6/26/20 02:11 PM
Lab ID:	2006644-02A	Dilution Factor:	4.00
Date/Time Collected:	6/17/20 02:59 PM	Instrument/Filename:	msd14.i / 14062612
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	16	48	79	Not Detected
1,4-Dioxane	123-91-1	87	220	290	Not Detected
cis-1,2-Dichloroethene	156-59-2	12	48	79	14 J
Tetrachloroethene	127-18-4	41	81	140	Not Detected
trans-1,2-Dichloroethene	156-60-5	24	48	79	8700
Trichloroethene	79-01-6	20	64	110	34 J
Vinyl Chloride	75-01-4	18	31	51	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	99

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

Client ID:	AA-12400BELDEN-01_061720	Date/Time Analyzed:	6/25/20 09:50 PM
Lab ID:	2006644-03A	Dilution Factor:	1.70
Date/Time Collected:	6/17/20 02:53 PM	Instrument/File name:	msdv.i / v062519
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.54	0.67	Not Detected
1,4-Dioxane	123-91-1	0.32	0.49	0.61	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.10	0.54	0.67	Not Detected
Tetrachloroethene	127-18-4	0.33	0.92	1.2	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.29	0.54	0.67	0.74
Trichloroethene	79-01-6	0.31	0.73	0.91	Not Detected
Vinyl Chloride	75-01-4	0.11	0.35	0.43	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	98
Toluene-d8	2037-26-5	70-130	96

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-03_061720	Date/Time Analyzed:	6/26/20 09:36 PM
Lab ID:	2006644-04A	Dilution Factor:	7.04
Date/Time Collected:	6/17/20 03:04 PM	Instrument/Filename:	msd14.i / 14062630
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	28	84	140	Not Detected
1,4-Dioxane	123-91-1	150	380	510	Not Detected
cis-1,2-Dichloroethene	156-59-2	22	84	140	25 J
Tetrachloroethene	127-18-4	72	140	240	Not Detected
trans-1,2-Dichloroethene	156-60-5	43	84	140	14000
Trichloroethene	79-01-6	35	110	190	45 J
Vinyl Chloride	75-01-4	32	54	90	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-05_061720	Date/Time Analyzed:	6/26/20 10:01 PM
Lab ID:	2006644-05A	Dilution Factor:	6.88
Date/Time Collected:	6/17/20 03:24 PM	Instrument/Filename:	msd14.i / 14062631
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	27	82	140	Not Detected
1,4-Dioxane	123-91-1	150	370	500	Not Detected
cis-1,2-Dichloroethene	156-59-2	21	82	140	Not Detected
Tetrachloroethene	127-18-4	71	140	230	Not Detected
trans-1,2-Dichloroethene	156-60-5	42	82	140	13000
Trichloroethene	79-01-6	34	110	180	Not Detected
Vinyl Chloride	75-01-4	31	53	88	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-04_061720	Date/Time Analyzed:	6/26/20 10:43 PM
Lab ID:	2006644-06A	Dilution Factor:	5.96
Date/Time Collected:	6/17/20 03:24 PM	Instrument/Filename:	msd14.i / 14062633
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	23	71	120	Not Detected
1,4-Dioxane	123-91-1	130	320	430	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	71	120	Not Detected
Tetrachloroethene	127-18-4	61	120	200	Not Detected
trans-1,2-Dichloroethene	156-60-5	36	71	120	13000
Trichloroethene	79-01-6	30	96	160	46 J
Vinyl Chloride	75-01-4	27	46	76	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-07_061720	Date/Time Analyzed:	6/26/20 11:52 PM
Lab ID:	2006644-07A	Dilution Factor:	5.67
Date/Time Collected:	6/17/20 03:21 PM	Instrument/Filename:	msd14.i / 14062636
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	67	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	67	110	Not Detected
Tetrachloroethene	127-18-4	58	120	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	67	110	11000
Trichloroethene	79-01-6	28	91	150	30 J
Vinyl Chloride	75-01-4	26	43	72	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	96

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-06_061720	Date/Time Analyzed:	6/26/20 04:17 PM
Lab ID:	2006644-08A	Dilution Factor:	5.84
Date/Time Collected:	6/17/20 03:05 PM	Instrument/Filename:	msd14.i / 14062616
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	23	69	120	Not Detected
1,4-Dioxane	123-91-1	130	320	420	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	69	120	Not Detected
Tetrachloroethene	127-18-4	60	120	200	Not Detected
trans-1,2-Dichloroethene	156-60-5	36	69	120	12000
Trichloroethene	79-01-6	29	94	160	42 J
Vinyl Chloride	75-01-4	26	45	75	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-08_061720	Date/Time Analyzed:	6/26/20 02:41 PM
Lab ID:	2006644-09A	Dilution Factor:	4.10
Date/Time Collected:	6/17/20 03:20 PM	Instrument/Filename:	msd14.i / 14062613
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	16	49	81	Not Detected
1,4-Dioxane	123-91-1	89	220	300	Not Detected
cis-1,2-Dichloroethene	156-59-2	13	49	81	Not Detected
Tetrachloroethene	127-18-4	42	83	140	Not Detected
trans-1,2-Dichloroethene	156-60-5	25	49	81	9700
Trichloroethene	79-01-6	20	66	110	Not Detected
Vinyl Chloride	75-01-4	18	31	52	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-09_061720	Date/Time Analyzed:	6/26/20 11:06 PM
Lab ID:	2006644-10A	Dilution Factor:	5.75
Date/Time Collected:	6/17/20 03:01 PM	Instrument/Filename:	msd14.i / 14062634
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	68	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	68	110	20 J
Tetrachloroethene	127-18-4	59	120	200	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	68	110	14000
Trichloroethene	79-01-6	29	93	150	38 J
Vinyl Chloride	75-01-4	26	44	73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-01_061720	Date/Time Analyzed:	6/26/20 11:29 PM
Lab ID:	2006644-11A	Dilution Factor:	5.50
Date/Time Collected:	6/17/20 03:12 PM	Instrument/Filename:	msd14.i / 14062635
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	65	110	Not Detected
1,4-Dioxane	123-91-1	120	300	400	Not Detected
cis-1,2-Dichloroethene	156-59-2	17	65	110	Not Detected
Tetrachloroethene	127-18-4	57	110	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	34	65	110	13000
Trichloroethene	79-01-6	27	89	150	44 J
Vinyl Chloride	75-01-4	25	42	70	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-02_061720	Date/Time Analyzed:	6/26/20 04:50 PM
Lab ID:	2006644-12A	Dilution Factor:	5.70
Date/Time Collected:	6/17/20 03:20 PM	Instrument/Filename:	msd14.i / 14062617
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	68	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	68	110	Not Detected
Tetrachloroethene	127-18-4	59	120	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	68	110	12000
Trichloroethene	79-01-6	28	92	150	33 J
Vinyl Chloride	75-01-4	26	44	73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	100

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-10_061720	Date/Time Analyzed:	6/26/20 03:07 PM
Lab ID:	2006644-13A	Dilution Factor:	4.10
Date/Time Collected:	6/17/20 03:22 PM	Instrument/Filename:	msd14.i / 14062614
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	16	49	81	Not Detected
1,4-Dioxane	123-91-1	89	220	300	Not Detected
cis-1,2-Dichloroethene	156-59-2	13	49	81	Not Detected
Tetrachloroethene	127-18-4	42	83	140	Not Detected
trans-1,2-Dichloroethene	156-60-5	25	49	81	9000
Trichloroethene	79-01-6	20	66	110	28 J
Vinyl Chloride	75-01-4	18	31	52	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	98

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

Client ID:	Lab Blank	Date/Time Analyzed:	6/25/20 01:56 PM
Lab ID:	2006644-14A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msdv.i / v062508c
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	0.23	0.32	0.40	Not Detected
1,4-Dioxane	123-91-1	0.19	0.29	0.36	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.061	0.32	0.40	Not Detected
Tetrachloroethene	127-18-4	0.20	0.54	0.68	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.17	0.32	0.40	Not Detected
Trichloroethene	79-01-6	0.18	0.43	0.54	Not Detected
Vinyl Chloride	75-01-4	0.065	0.20	0.26	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	101

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	Lab Blank	Date/Time Analyzed:	6/26/20 10:40 AM
Lab ID:	2006644-14B	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd14.i / 14062606c
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	3.9	12	20	Not Detected
1,4-Dioxane	123-91-1	22	54	72	Not Detected
cis-1,2-Dichloroethene	156-59-2	3.1	12	20	Not Detected
Tetrachloroethene	127-18-4	10	20	34	Not Detected
trans-1,2-Dichloroethene	156-60-5	6.1	12	20	Not Detected
Trichloroethene	79-01-6	5.0	16	27	Not Detected
Vinyl Chloride	75-01-4	4.5	7.7	13	Not Detected

D: Analyte not within the DoD scope of accreditation.

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

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

Client ID:	CCV	Date/Time Analyzed:	6/25/20 08:30 AM
Lab ID:	2006644-15A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msdv.i / v062502
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	99
1,4-Dioxane	123-91-1	112
cis-1,2-Dichloroethene	156-59-2	104
Tetrachloroethene	127-18-4	103
trans-1,2-Dichloroethene	156-60-5	103
Trichloroethene	79-01-6	100
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	99
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	106

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	CCV	Date/Time Analyzed:	6/26/20 08:58 AM
Lab ID:	2006644-15B	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd14.i / 14062602
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	98
1,4-Dioxane	123-91-1	97
cis-1,2-Dichloroethene	156-59-2	102
Tetrachloroethene	127-18-4	92
trans-1,2-Dichloroethene	156-60-5	100
Trichloroethene	79-01-6	90
Vinyl Chloride	75-01-4	98

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	100

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

Client ID:	LCS	Date/Time Analyzed:	6/25/20 09:08 AM
Lab ID:	2006644-16A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/File name:	msdv.i / v062503
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	102
1,4-Dioxane	123-91-1	115
cis-1,2-Dichloroethene	156-59-2	96
Tetrachloroethene	127-18-4	102
trans-1,2-Dichloroethene	156-60-5	111
Trichloroethene	79-01-6	100
Vinyl Chloride	75-01-4	107

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	103

* % Recovery is calculated using unrounded analytical results.

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

Client ID:	LCSD	Date/Time Analyzed:	6/25/20 09:46 AM
Lab ID:	2006644-16AA	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msdv.i / v062504
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	115
1,4-Dioxane	123-91-1	115
cis-1,2-Dichloroethene	156-59-2	92
Tetrachloroethene	127-18-4	98
trans-1,2-Dichloroethene	156-60-5	110
Trichloroethene	79-01-6	98
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	94
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	LCS	Date/Time Analyzed:	6/26/20 09:21 AM
Lab ID:	2006644-16B	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd14.i / 14062603
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	98
1,4-Dioxane	123-91-1	102
cis-1,2-Dichloroethene	156-59-2	96
Tetrachloroethene	127-18-4	100
trans-1,2-Dichloroethene	156-60-5	114
Trichloroethene	79-01-6	95
Vinyl Chloride	75-01-4	101

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	LCSD	Date/Time Analyzed:	6/26/20 09:45 AM
Lab ID:	2006644-16BB	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd14.i / 14062604
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	98
1,4-Dioxane	123-91-1	100
cis-1,2-Dichloroethene	156-59-2	91
Tetrachloroethene	127-18-4	90
trans-1,2-Dichloroethene	156-60-5	108
Trichloroethene	79-01-6	96
Vinyl Chloride	75-01-4	100

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	100

* % Recovery is calculated using unrounded analytical results.



June 30, 2020

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater
Project number: 30042006.0301.02 RESIDENTIAL
Client project scopereference: Sample COC only was used to define project analytical requirements.
Laboratory: Eurofins Air Toxics -Folsom
Laboratory submittal: 2006644
Sample date: 2020-06-17
Report received by CADENA: 2020-06-30
Initial Data Verification completed: 2020-06-30
13 Air samples were analyzed for TO-15 parameters.

No data qualifications or sample integrity issues were observed.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan

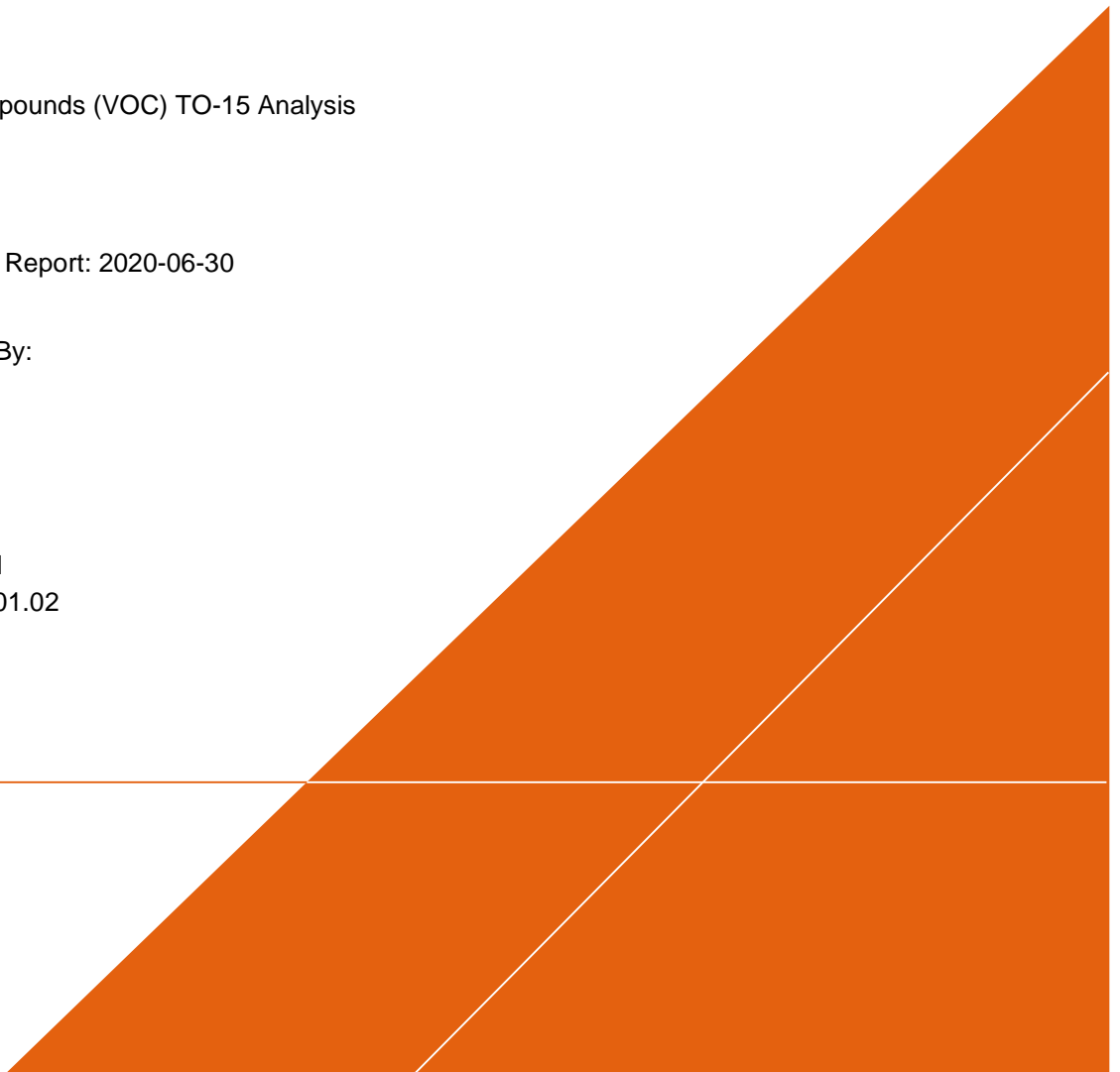
Volatile Organic Compounds (VOC) TO-15 Analysis

SDG #2006644

CADENA Verification Report: 2020-06-30

Analyses Performed By:
Eurofins Air Toxics
Folsom, California

Report #37738R
Review Level: Tier III
Project: 30050315.301.02



DATA REVIEW

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 2006644 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III includes a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
						TO-15 (Full Scan)	TO-15 (SIM)	MISC
2006644	IAF-12400BELDEN-11_061720	2006644-01A	Air	6/17/2020		X		
	IAF-12400BELDEN-12_061720	2006644-02A	Air	6/17/2020		X		
	AA-12400BELDEN-01_061720	2006644-03A	Air	6/17/2020		X		
	IAF-12400BELDEN-03_061720	2006644-04A	Air	6/17/2020		X		
	IAF-12400BELDEN-05_061720	2006644-05A	Air	6/17/2020		X		
	IAF-12400BELDEN-04_061720	2006644-06A	Air	6/17/2020		X		
	IAF-12400BELDEN-07_061720	2006644-07A	Air	6/17/2020		X		
	IAF-12400BELDEN-06_061720	2006644-08A	Air	6/17/2020		X		
	IAF-12400BELDEN-08_061720	2006644-09A	Air	6/17/2020		X		
	IAF-12400BELDEN-09_061720	2006644-10A	Air	6/17/2020		X		
	IAF-12400BELDEN-01_061720	2006644-11A	Air	6/17/2020		X		
	IAF-12400BELDEN-02_061720	2006644-12A	Air	6/17/2020		X		
	IAF-12400BELDEN-10_061720	2006644-13A	Air	6/17/2020		X		

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method TO-15 (Full Scan). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 - J+ The result is an estimated quantity, but the result may be biased high.
 - J- The result is an estimated quantity, but the result may be biased low.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
USEPA TO-15	Air	30 days from collection to analysis (Canister)	Ambient Temperature	< -2" Hg

All samples were analyzed within the specified holding time and canister return pressure / vacuum criteria.

2. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (30%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and RRF value greater than control limit (0.05).

All compounds associated with the continuing calibrations were within the specified control limits.

4. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than 140% or less than 60% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

DATA REVIEW

5. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra. All identified compounds met the specified criteria.

6. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 35% for air matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are not greater than five times the RL, a control limit of three times the RL is applied to the difference between the duplicate sample results.

A field duplicate was not performed on a sample location within this SDG.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: TO-15 (Full Scan)	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					

Tier II Validation

Canister return pressure (<-2"Hg)		X		X	
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Tier III Validation

System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Field Duplicate Sample RPD					X
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

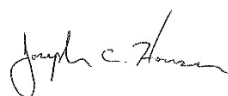
%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE:



DATE: July 27, 2020

PEER REVIEW: Andrew Korycinski

DATE: August 7, 2020



**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



**NO CORRECTIONS/QUALIFIERS ADDED
TO SAMPLE ANALYSIS DATA SHEETS**



EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-11_061720	Date/Time Analyzed:	6/26/20 03:49 PM
Lab ID:	2006644-01A	Dilution Factor:	5.69
Date/Time Collected:	6/17/20 02:59 PM	Instrument/Filename:	msd14.i / 14062615
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	68	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	68	110	Not Detected
Tetrachloroethene	127-18-4	59	120	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	68	110	11000
Trichloroethene	79-01-6	28	92	150	40 J
Vinyl Chloride	75-01-4	26	44	73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-12_061720	Date/Time Analyzed:	6/26/20 02:11 PM
Lab ID:	2006644-02A	Dilution Factor:	4.00
Date/Time Collected:	6/17/20 02:59 PM	Instrument/Filename:	msd14.i / 14062612
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	16	48	79	Not Detected
1,4-Dioxane	123-91-1	87	220	290	Not Detected
cis-1,2-Dichloroethene	156-59-2	12	48	79	14 J
Tetrachloroethene	127-18-4	41	81	140	Not Detected
trans-1,2-Dichloroethene	156-60-5	24	48	79	8700
Trichloroethene	79-01-6	20	64	110	34 J
Vinyl Chloride	75-01-4	18	31	51	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	99

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

Client ID:	AA-12400BELDEN-01_061720	Date/Time Analyzed:	6/25/20 09:50 PM
Lab ID:	2006644-03A	Dilution Factor:	1.70
Date/Time Collected:	6/17/20 02:53 PM	Instrument/Filename:	msdv.i / v062519
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.54	0.67	Not Detected
1,4-Dioxane	123-91-1	0.32	0.49	0.61	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.10	0.54	0.67	Not Detected
Tetrachloroethene	127-18-4	0.33	0.92	1.2	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.29	0.54	0.67	0.74
Trichloroethene	79-01-6	0.31	0.73	0.91	Not Detected
Vinyl Chloride	75-01-4	0.11	0.35	0.43	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	98
Toluene-d8	2037-26-5	70-130	96

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-03_061720	Date/Time Analyzed:	6/26/20 09:36 PM
Lab ID:	2006644-04A	Dilution Factor:	7.04
Date/Time Collected:	6/17/20 03:04 PM	Instrument/Filename:	msd14.i / 14062630
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	28	84	140	Not Detected
1,4-Dioxane	123-91-1	150	380	510	Not Detected
cis-1,2-Dichloroethene	156-59-2	22	84	140	25 J
Tetrachloroethene	127-18-4	72	140	240	Not Detected
trans-1,2-Dichloroethene	156-60-5	43	84	140	14000
Trichloroethene	79-01-6	35	110	190	45 J
Vinyl Chloride	75-01-4	32	54	90	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-05_061720	Date/Time Analyzed:	6/26/20 10:01 PM
Lab ID:	2006644-05A	Dilution Factor:	6.88
Date/Time Collected:	6/17/20 03:24 PM	Instrument/Filename:	msd14.i / 14062631
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	27	82	140	Not Detected
1,4-Dioxane	123-91-1	150	370	500	Not Detected
cis-1,2-Dichloroethene	156-59-2	21	82	140	Not Detected
Tetrachloroethene	127-18-4	71	140	230	Not Detected
trans-1,2-Dichloroethene	156-60-5	42	82	140	13000
Trichloroethene	79-01-6	34	110	180	Not Detected
Vinyl Chloride	75-01-4	31	53	88	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-04_061720	Date/Time Analyzed:	6/26/20 10:43 PM
Lab ID:	2006644-06A	Dilution Factor:	5.96
Date/Time Collected:	6/17/20 03:24 PM	Instrument/Filename:	msd14.i / 14062633
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	23	71	120	Not Detected
1,4-Dioxane	123-91-1	130	320	430	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	71	120	Not Detected
Tetrachloroethene	127-18-4	61	120	200	Not Detected
trans-1,2-Dichloroethene	156-60-5	36	71	120	13000
Trichloroethene	79-01-6	30	96	160	46 J
Vinyl Chloride	75-01-4	27	46	76	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-07_061720	Date/Time Analyzed:	6/26/20 11:52 PM
Lab ID:	2006644-07A	Dilution Factor:	5.67
Date/Time Collected:	6/17/20 03:21 PM	Instrument/Filename:	msd14.i / 14062636
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	67	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	67	110	Not Detected
Tetrachloroethene	127-18-4	58	120	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	67	110	11000
Trichloroethene	79-01-6	28	91	150	30 J
Vinyl Chloride	75-01-4	26	43	72	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	96

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-06_061720	Date/Time Analyzed:	6/26/20 04:17 PM
Lab ID:	2006644-08A	Dilution Factor:	5.84
Date/Time Collected:	6/17/20 03:05 PM	Instrument/Filename:	msd14.i / 14062616
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	23	69	120	Not Detected
1,4-Dioxane	123-91-1	130	320	420	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	69	120	Not Detected
Tetrachloroethene	127-18-4	60	120	200	Not Detected
trans-1,2-Dichloroethene	156-60-5	36	69	120	12000
Trichloroethene	79-01-6	29	94	160	42 J
Vinyl Chloride	75-01-4	26	45	75	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-08_061720	Date/Time Analyzed:	6/26/20 02:41 PM
Lab ID:	2006644-09A	Dilution Factor:	4.10
Date/Time Collected:	6/17/20 03:20 PM	Instrument/Filename:	msd14.i / 14062613
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	16	49	81	Not Detected
1,4-Dioxane	123-91-1	89	220	300	Not Detected
cis-1,2-Dichloroethene	156-59-2	13	49	81	Not Detected
Tetrachloroethene	127-18-4	42	83	140	Not Detected
trans-1,2-Dichloroethene	156-60-5	25	49	81	9700
Trichloroethene	79-01-6	20	66	110	Not Detected
Vinyl Chloride	75-01-4	18	31	52	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-09_061720	Date/Time Analyzed:	6/26/20 11:06 PM
Lab ID:	2006644-10A	Dilution Factor:	5.75
Date/Time Collected:	6/17/20 03:01 PM	Instrument/Filename:	msd14.i / 14062634
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	68	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	68	110	20 J
Tetrachloroethene	127-18-4	59	120	200	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	68	110	14000
Trichloroethene	79-01-6	29	93	150	38 J
Vinyl Chloride	75-01-4	26	44	73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-01_061720	Date/Time Analyzed:	6/26/20 11:29 PM
Lab ID:	2006644-11A	Dilution Factor:	5.50
Date/Time Collected:	6/17/20 03:12 PM	Instrument/Filename:	msd14.i / 14062635
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	65	110	Not Detected
1,4-Dioxane	123-91-1	120	300	400	Not Detected
cis-1,2-Dichloroethene	156-59-2	17	65	110	Not Detected
Tetrachloroethene	127-18-4	57	110	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	34	65	110	13000
Trichloroethene	79-01-6	27	89	150	44 J
Vinyl Chloride	75-01-4	25	42	70	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-02_061720	Date/Time Analyzed:	6/26/20 04:50 PM
Lab ID:	2006644-12A	Dilution Factor:	5.70
Date/Time Collected:	6/17/20 03:20 PM	Instrument/Filename:	msd14.i / 14062617
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	22	68	110	Not Detected
1,4-Dioxane	123-91-1	120	310	410	Not Detected
cis-1,2-Dichloroethene	156-59-2	18	68	110	Not Detected
Tetrachloroethene	127-18-4	59	120	190	Not Detected
trans-1,2-Dichloroethene	156-60-5	35	68	110	12000
Trichloroethene	79-01-6	28	92	150	33 J
Vinyl Chloride	75-01-4	26	44	73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	100

EPA METHOD TO-15 GC/MS
Ford LTP

Client ID:	IAF-12400BELDEN-10_061720	Date/Time Analyzed:	6/26/20 03:07 PM
Lab ID:	2006644-13A	Dilution Factor:	4.10
Date/Time Collected:	6/17/20 03:22 PM	Instrument/Filename:	msd14.i / 14062614
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	16	49	81	Not Detected
1,4-Dioxane	123-91-1	89	220	300	Not Detected
cis-1,2-Dichloroethene	156-59-2	13	49	81	Not Detected
Tetrachloroethene	127-18-4	42	83	140	Not Detected
trans-1,2-Dichloroethene	156-60-5	25	49	81	9000
Trichloroethene	79-01-6	20	66	110	28 J
Vinyl Chloride	75-01-4	18	31	52	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	98

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

PID: _____ Workorder # **2006644**

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

Click links below to view:

[Canister Sampling Guide](#)

[Helium Shroud Video](#)

Client: <u>Ford</u>		PID: <u>NA</u>		Special Instructions/Notes: Report ONLY: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, 1,4-Dioxane, PCE, TCE and VC. Submit results through Cadena at jim.tomalia@cadena.com. Cadena #E203631. Level IV Reporting				Turnaround Time (Rush surcharges may apply)							
Project Name: <u>Ford LTP</u>		P.O.# <u>30042006.0301.02</u>						5 Day Turnaround Time							
Project Manager: <u>Kris Hinskey</u>								Canister Vacuum/Pressure							
Sampler: <u>Xenia Chan</u>								Requested Analyses							
Site Name: <u>12400 BELDEN</u>										Lab Use Only		TO-15 (See Special Instructions/Notes)		Do Not Analyze	
Lab ID	Sample Identification	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Receipt	Final (psig) Gas: N ₂ / He	TO-15 (See Special Instructions/Notes)	Do Not Analyze		
				Date	Time	Date	Time								
01A	IAF-12400BELDEN-11_061720	6L0251	23691	6/17/2020	7:28	6/17/2020	14:59	-30	-6.5			X			
02A	IAF-12400BELDEN-12_061720	6L1140	23600	6/17/2020	7:16	6/17/2020	14:59	-30	-5.5			X			
03A	AA-12400BELDEN-01_061720	6L1999	23714	6/17/2020	7:05	6/17/2020	14:53	-30	-6			X			
04A	IAF-12400BELDEN-03_061720	6L2861	24543	6/17/2020	8:14	6/17/2020	15:04	-30	-7			X			
05A	IAF-12400BELDEN-05_061720	6L1913	23395	6/17/2020	8:11	6/17/2020	15:24	-30	-6.5			X			
06A	IAF-12400BELDEN-04_061720	6L1794	24271	6/17/2020	8:10	6/17/2020	15:24	-29.5	-6			X			
07A	IAF-12400BELDEN-07_061720	6L1195	24558	6/17/2020	7:54	6/17/2020	15:21	-30	-6			X			
08A	IAF-12400BELDEN-06_061720	6L1950	23562	6/17/2020	7:52	6/17/2020	15:05	-30	-7			X			
09A	IAF-12400BELDEN-08_061720	6L0653	24683	6/17/2020	7:34	6/17/2020	15:20	-30	-6			X			
10A	IAF-12400BELDEN-09_061720	6L2249	23117	6/17/2020	7:50	6/17/2020	15:01	-30	-5			X			
11A	IAF-12400BELDEN-01_061720	6L0603	24340	6/17/2020	7:48	6/17/2020	15:12	-30	-5.5			X			
12A	IAF-12400BELDEN-02_061720	6L2498	23812	6/17/2020	7:41	6/17/2020	15:20	-30	-6.5			X			
13A	IAF-12400BELDEN-10_061720	6L0790	23487	6/17/2020	7:39	6/17/2020	15:22	-30	-6			X			
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Relinquished by: (Signature/Affiliation) <u>Patricia Salas / Arcadis</u>		Date <u>06-19-20</u>		Time <u>12:00</u>		Received by: (Signature/Affiliation) <u>ALEX</u>		Date <u>6-23-2020</u>		Time <u>10:20</u>	
Relinquished by: (Signature/Affiliation)		Date		Time		Received by: (Signature/Affiliation)		Date		Time	
Relinquished by: (Signature/Affiliation)		Date		Time		Received by: (Signature/Affiliation)		Date		Time	

Shipper Name: <u>FEDEX</u>		Custody Seals Intact? <u>(Yes)</u> <input checked="" type="checkbox"/> <u>No</u> <input type="checkbox"/> <u>None</u> <input type="checkbox"/>	
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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

9/28/2020

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

Project Name: Ford LTP
Project #: 30050315
Workorder #: 2009561

Dear Mr. Jim Tomalia

The following report includes the data for the above referenced project for sample(s) received on 9/21/2020 at Air Toxics Ltd.

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 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 #: 2009561

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. #	30050315.0301.01
FAX:		PROJECT #	30050315 Ford LTP
DATE RECEIVED:	09/21/2020	CONTACT:	Ausha Scott
DATE COMPLETED:	09/28/2020		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	AA-12400BELDEN-01_091520	Modified TO-15	7.5 "Hg	5 psi
02A	IAF-12400BELDEN-01_091520	Modified TO-15	7.0 "Hg	5 psi
03A	IAF-12400BELDEN-02_091520	Modified TO-15	7.0 "Hg	5 psi
04A	IAF-12400BELDEN-07_091520	Modified TO-15	7.0 "Hg	5 psi
05A	IAF-12400BELDEN-03_091520	Modified TO-15	7.0 "Hg	5 psi
06A	IAF-12400BELDEN-04_091520	Modified TO-15	7.5 "Hg	5 psi
07A	IAF-12400BELDEN-05_091520	Modified TO-15	7.0 "Hg	5 psi
08A	IAF-12400BELDEN-06_091520	Modified TO-15	7.0 "Hg	5 psi
09A	IAF-12400BELDEN-08_091520	Modified TO-15	7.5 "Hg	5 psi
10A	DUP-12400BELDEN-01_091520	Modified TO-15	7.5 "Hg	5 psi
11A	IAF-12400BELDEN-09_091520	Modified TO-15	7.5 "Hg	5 psi
12A	IAF-12400BELDEN-10_091520	Modified TO-15	5.0 "Hg	5 psi
13A	IAF-12400BELDEN-11_091520	Modified TO-15	7.0 "Hg	5 psi
14A	IAF-12400BELDEN-12_091520	Modified TO-15	7.0 "Hg	5 psi
15A	Lab Blank	Modified TO-15	NA	NA
15B	Lab Blank	Modified TO-15	NA	NA
16A	CCV	Modified TO-15	NA	NA
16B	CCV	Modified TO-15	NA	NA
17A	LCS	Modified TO-15	NA	NA
17AA	LCSD	Modified TO-15	NA	NA
17B	LCS	Modified TO-15	NA	NA
17BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 09/28/20

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209219, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-19-14, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-013, Effective date: 10/18/2019, Expiration date: 10/17/2020.

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

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
Modified TO-15
Arcadis U.S., Inc.
Workorder# 2009561

Fourteen 6 Liter Summa Canister (100% Cert Ambient) samples were received on September 21, 2020. 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

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 may be false positives.

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

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

Client ID:	AA-12400BELDEN-01_091520	Date/Time Analyzed:	9/24/20 08:45 PM
Lab ID:	2009561-01A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 03:57 PM	Instrument/Filename:	msd20.i / 20092418
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	Not Detected
Trichloroethene	79-01-6	0.50	0.85	0.96	Not Detected
Vinyl Chloride	75-01-4	0.14	0.40	0.46	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	104
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-01_091520	Date/Time Analyzed:	9/24/20 09:24 PM
Lab ID:	2009561-02A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:29 PM	Instrument/Filename:	msd20.i / 20092419
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.61 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.1
Trichloroethene	79-01-6	0.49	0.83	0.94	2.2
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	107

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

Client ID:	IAF-12400BELDEN-02_091520	Date/Time Analyzed:	9/24/20 10:04 PM
Lab ID:	2009561-03A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:03 PM	Instrument/File name:	msd20.i / 20092420
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.96 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.2
Trichloroethene	79-01-6	0.49	0.83	0.94	2.3
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	102
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-07_091520	Date/Time Analyzed:	9/24/20 10:43 PM
Lab ID:	2009561-04A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:33 PM	Instrument/File Name:	msd20.i / 20092421
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.53 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	1.7
Trichloroethene	79-01-6	0.49	0.83	0.94	1.9
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	103
Toluene-d8	2037-26-5	70-130	104

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

Client ID:	IAF-12400BELDEN-03_091520	Date/Time Analyzed:	9/25/20 07:30 AM
Lab ID:	2009561-05A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:30 PM	Instrument/Filename:	msd20.i / 20092422
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.55 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.1
Trichloroethene	79-01-6	0.49	0.83	0.94	2.2
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	104
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	IAF-12400BELDEN-04_091520	Date/Time Analyzed:	9/25/20 08:09 AM
Lab ID:	2009561-06A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 04:31 PM	Instrument/Filename:	msd20.i / 20092423
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	0.46 J
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.59 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	2.1
Trichloroethene	79-01-6	0.50	0.85	0.96	2.3
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-05_091520	Date/Time Analyzed:	9/25/20 02:59 PM
Lab ID:	2009561-07A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:33 PM	Instrument/File name:	msd20.i / 20092509
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.61 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.1
Trichloroethene	79-01-6	0.49	0.83	0.94	2.2
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-06_091520	Date/Time Analyzed:	9/25/20 03:38 PM
Lab ID:	2009561-08A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:35 PM	Instrument/Filename:	msd20.i / 20092510
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.65 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.0
Trichloroethene	79-01-6	0.49	0.83	0.94	2.3
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	IAF-12400BELDEN-08_091520	Date/Time Analyzed:	9/25/20 04:17 PM
Lab ID:	2009561-09A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 04:31 PM	Instrument/File name:	msd20.i / 20092511
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.59 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	1.8
Trichloroethene	79-01-6	0.50	0.85	0.96	2.0
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	DUP-12400BELDEN-01_091520	Date/Time Analyzed:	9/25/20 04:57 PM
Lab ID:	2009561-10A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 12:00 AM	Instrument/Filename:	msd20.i / 20092512
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.54 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	1.8
Trichloroethene	79-01-6	0.50	0.85	0.96	1.8
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	IAF-12400BELDEN-09_091520	Date/Time Analyzed:	9/25/20 05:36 PM
Lab ID:	2009561-11A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 04:30 PM	Instrument/Filename:	msd20.i / 20092513
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	0.41 J
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.59 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	2.3
Trichloroethene	79-01-6	0.50	0.85	0.96	2.2
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

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	104
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	IAF-12400BELDEN-10_091520	Date/Time Analyzed:	9/25/20 06:15 PM
Lab ID:	2009561-12A	Dilution Factor:	1.61
Date/Time Collected:	9/15/20 04:02 PM	Instrument/Filename:	msd20.i / 20092514
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.36	0.56	0.64	Not Detected
1,4-Dioxane	123-91-1	0.34	0.51	0.58	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.30	0.56	0.64	Not Detected
Tetrachloroethene	127-18-4	0.42	0.96	1.1	0.58 J
trans-1,2-Dichloroethene	156-60-5	0.32	0.56	0.64	2.4
Trichloroethene	79-01-6	0.45	0.76	0.86	2.4
Vinyl Chloride	75-01-4	0.13	0.36	0.41	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	IAF-12400BELDEN-11_091520	Date/Time Analyzed:	9/25/20 06:55 PM
Lab ID:	2009561-13A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:42 PM	Instrument/Filename:	msd20.i / 20092515
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	0.45 J
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.63 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.3
Trichloroethene	79-01-6	0.49	0.83	0.94	2.5
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	IAF-12400BELDEN-12_091520	Date/Time Analyzed:	9/25/20 07:34 PM
Lab ID:	2009561-14A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:00 PM	Instrument/File name:	msd20.i / 20092516
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.68 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.3
Trichloroethene	79-01-6	0.49	0.83	0.94	2.6
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	104
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	Lab Blank	Date/Time Analyzed:	9/24/20 12:21 PM
Lab ID:	2009561-15A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092406a
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	0.22	0.35	0.40	Not Detected
1,4-Dioxane	123-91-1	0.21	0.32	0.36	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.19	0.35	0.40	Not Detected
Tetrachloroethene	127-18-4	0.26	0.60	0.68	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.20	0.35	0.40	Not Detected
Trichloroethene	79-01-6	0.28	0.47	0.54	Not Detected
Vinyl Chloride	75-01-4	0.081	0.22	0.26	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	Lab Blank	Date/Time Analyzed:	9/25/20 12:33 PM
Lab ID:	2009561-15B	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092506a
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	0.22	0.35	0.40	Not Detected
1,4-Dioxane	123-91-1	0.21	0.32	0.36	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.19	0.35	0.40	Not Detected
Tetrachloroethene	127-18-4	0.26	0.60	0.68	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.20	0.35	0.40	Not Detected
Trichloroethene	79-01-6	0.28	0.47	0.54	Not Detected
Vinyl Chloride	75-01-4	0.081	0.22	0.26	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	119
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	104

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

Client ID:	CCV	Date/Time Analyzed:	9/24/20 09:31 AM
Lab ID:	2009561-16A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092402
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	102
1,4-Dioxane	123-91-1	98
cis-1,2-Dichloroethene	156-59-2	91
Tetrachloroethene	127-18-4	101
trans-1,2-Dichloroethene	156-60-5	93
Trichloroethene	79-01-6	103
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	96
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	CCV	Date/Time Analyzed:	9/25/20 09:28 AM
Lab ID:	2009561-16B	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092502
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	101
1,4-Dioxane	123-91-1	100
cis-1,2-Dichloroethene	156-59-2	92
Tetrachloroethene	127-18-4	102
trans-1,2-Dichloroethene	156-60-5	92
Trichloroethene	79-01-6	101
Vinyl Chloride	75-01-4	100

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	98

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

Client ID:	LCS	Date/Time Analyzed:	9/24/20 10:23 AM
Lab ID:	2009561-17A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092403
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	100
1,4-Dioxane	123-91-1	98
cis-1,2-Dichloroethene	156-59-2	90
Tetrachloroethene	127-18-4	104
trans-1,2-Dichloroethene	156-60-5	91
Trichloroethene	79-01-6	104
Vinyl Chloride	75-01-4	97

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	103

* % Recovery is calculated using unrounded analytical results.

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

Client ID:	LCSD	Date/Time Analyzed:	9/24/20 11:02 AM
Lab ID:	2009561-17AA	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092404
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	103
1,4-Dioxane	123-91-1	96
cis-1,2-Dichloroethene	156-59-2	92
Tetrachloroethene	127-18-4	103
trans-1,2-Dichloroethene	156-60-5	91
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	97
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	97

* % Recovery is calculated using unrounded analytical results.

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

Client ID:	LCS	Date/Time Analyzed:	9/25/20 10:21 AM
Lab ID:	2009561-17B	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092503
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	101
1,4-Dioxane	123-91-1	96
cis-1,2-Dichloroethene	156-59-2	91
Tetrachloroethene	127-18-4	102
trans-1,2-Dichloroethene	156-60-5	90
Trichloroethene	79-01-6	101
Vinyl Chloride	75-01-4	98

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	97

* % Recovery is calculated using unrounded analytical results.

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

Client ID:	LCSD	Date/Time Analyzed:	9/25/20 11:11 AM
Lab ID:	2009561-17BB	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd20.i / 20092504
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	103
1,4-Dioxane	123-91-1	94
cis-1,2-Dichloroethene	156-59-2	92
Tetrachloroethene	127-18-4	102
trans-1,2-Dichloroethene	156-60-5	90
Trichloroethene	79-01-6	98
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	97
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	94

* % Recovery is calculated using unrounded analytical results.



September 28, 2020

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - Soil Gas and Groundwater
Project number: 30050315.0301.01
Client project scopereference: Sample COC only was used to define project analytical requirements.
Laboratory: Eurofins Air Toxics -Folsom
Laboratory submittal: 2009561
Sample date: 2020-09-15
Report received by CADENA: 2020-09-28
Initial Data Verification completed: 2020-09-28
14 Air samples were analyzed for TO-15 parameters.

No data qualifications or sample integrity issues were observed.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan

Volatile Organic Compounds (VOC) TO-15 Analysis

SDG #2009561

CADENA Verification Report: 2020-09-28

Analyses Performed By:
Eurofins Air Toxics
Folsom, California

Report #38574R
Review Level: Tier III
Project: 30050315.0301.02



DATA REVIEW

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 2009561 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III includes a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
						TO-15 (Full Scan)	TO-15 (SIM)	MISC
2009561	AA-12400BELDEN-01_091520	2009561-01A	Air	9/15/2020		X		
	IAF-12400BELDEN-01_091520	2009561-02A	Air	9/15/2020		X		
	IAF-12400BELDEN-02_091520	2009561-03A	Air	9/15/2020		X		
	IAF-12400BELDEN-07_091520	2009561-04A	Air	9/15/2020		X		
	IAF-12400BELDEN-03_091520	2009561-05A	Air	9/15/2020		X		
	IAF-12400BELDEN-04_091520	2009561-06A	Air	9/15/2020		X		
	IAF-12400BELDEN-05_091520	2009561-07A	Air	9/15/2020		X		
	IAF-12400BELDEN-06_091520	2009561-08A	Air	9/15/2020		X		
	IAF-12400BELDEN-08_091520	2009561-09A	Air	9/15/2020		X		

DATA REVIEW

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
						TO-15 (Full Scan)	TO-15 (SIM)	MISC
	DUP-12400BELDEN-01_091520	2009561-10A	Air	9/15/2020	IAF-12400BELDEN-08_091520	X		
	IAF-12400BELDEN-09_091520	2009561-11A	Air	9/15/2020		X		
	IAF-12400BELDEN-10_091520	2009561-12A	Air	9/15/2020		X		
	IAF-12400BELDEN-11_091520	2009561-13A	Air	9/15/2020		X		
	IAF-12400BELDEN-12_091520	2009561-14A	Air	9/15/2020		X		

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method TO-15 (Full Scan). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 - J+ The result is an estimated quantity, but the result may be biased high.
 - J- The result is an estimated quantity, but the result may be biased low.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
USEPA TO-15	Air	30 days from collection to analysis (Canister)	Ambient Temperature	< -2" Hg

All samples were analyzed within the specified holding time and canister return pressure / vacuum criteria.

2. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (30%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and RRF value greater than control limit (0.05).

All compounds associated with the continuing calibrations were within the specified control limits.

4. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than 140% or less than 60% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

DATA REVIEW

5. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

6. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 35% for air matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are not greater than five times the RL, a control limit of three times the RL is applied to the difference between the duplicate sample results.

Results (in $\mu\text{g}/\text{m}^3$) for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
IAF-12400BELDEN-08_091520/ DUP-12400BELDEN-01_091520	Tetrachloroethene	0.59 J	0.54 J	AC
	trans-1,2-Dichloroethene	1.8	1.8	AC
	Trichloroethene	2.0	1.8	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: TO-15 (Full Scan)	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					

Tier II Validation

Canister return pressure (<-2"Hg)		X		X	
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Tier III Validation

System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Field Duplicate Sample RPD		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE:



DATE: October 8, 2020

PEER REVIEW: Dennis Capria

DATE: October 9, 2020



**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



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

Client ID:	AA-12400BELDEN-01_091520	Date/Time Analyzed:	9/24/20 08:45 PM
Lab ID:	2009561-01A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 03:57 PM	Instrument/Filename:	msd20.i / 20092418
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	Not Detected
Trichloroethene	79-01-6	0.50	0.85	0.96	Not Detected
Vinyl Chloride	75-01-4	0.14	0.40	0.46	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	104
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-01_091520	Date/Time Analyzed:	9/24/20 09:24 PM
Lab ID:	2009561-02A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:29 PM	Instrument/Filename:	msd20.i / 20092419
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.61 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.1
Trichloroethene	79-01-6	0.49	0.83	0.94	2.2
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	107

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

Client ID:	IAF-12400BELDEN-02_091520	Date/Time Analyzed:	9/24/20 10:04 PM
Lab ID:	2009561-03A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:03 PM	Instrument/File Name:	msd20.i / 20092420
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.96 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.2
Trichloroethene	79-01-6	0.49	0.83	0.94	2.3
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	102
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-07_091520	Date/Time Analyzed:	9/24/20 10:43 PM
Lab ID:	2009561-04A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:33 PM	Instrument/Filename:	msd20.i / 20092421
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.53 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	1.7
Trichloroethene	79-01-6	0.49	0.83	0.94	1.9
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	103
Toluene-d8	2037-26-5	70-130	104

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

Client ID:	IAF-12400BELDEN-03_091520	Date/Time Analyzed:	9/25/20 07:30 AM
Lab ID:	2009561-05A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:30 PM	Instrument/Filename:	msd20.i / 20092422
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.55 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.1
Trichloroethene	79-01-6	0.49	0.83	0.94	2.2
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	104
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	IAF-12400BELDEN-04_091520	Date/Time Analyzed:	9/25/20 08:09 AM
Lab ID:	2009561-06A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 04:31 PM	Instrument/Filename:	msd20.i / 20092423
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	0.46 J
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.59 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	2.1
Trichloroethene	79-01-6	0.50	0.85	0.96	2.3
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-05_091520	Date/Time Analyzed:	9/25/20 02:59 PM
Lab ID:	2009561-07A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:33 PM	Instrument/File name:	msd20.i / 20092509
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.61 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.1
Trichloroethene	79-01-6	0.49	0.83	0.94	2.2
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	IAF-12400BELDEN-06_091520	Date/Time Analyzed:	9/25/20 03:38 PM
Lab ID:	2009561-08A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:35 PM	Instrument/Filename:	msd20.i / 20092510
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.65 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.0
Trichloroethene	79-01-6	0.49	0.83	0.94	2.3
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	IAF-12400BELDEN-08_091520	Date/Time Analyzed:	9/25/20 04:17 PM
Lab ID:	2009561-09A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 04:31 PM	Instrument/File name:	msd20.i / 20092511
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.59 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	1.8
Trichloroethene	79-01-6	0.50	0.85	0.96	2.0
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	DUP-12400BELDEN-01_091520	Date/Time Analyzed:	9/25/20 04:57 PM
Lab ID:	2009561-10A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 12:00 AM	Instrument/Filename:	msd20.i / 20092512
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.54 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	1.8
Trichloroethene	79-01-6	0.50	0.85	0.96	1.8
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	IAF-12400BELDEN-09_091520	Date/Time Analyzed:	9/25/20 05:36 PM
Lab ID:	2009561-11A	Dilution Factor:	1.79
Date/Time Collected:	9/15/20 04:30 PM	Instrument/Filename:	msd20.i / 20092513
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.40	0.62	0.71	Not Detected
1,4-Dioxane	123-91-1	0.37	0.57	0.64	0.41 J
cis-1,2-Dichloroethene	156-59-2	0.33	0.62	0.71	Not Detected
Tetrachloroethene	127-18-4	0.47	1.1	1.2	0.59 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.62	0.71	2.3
Trichloroethene	79-01-6	0.50	0.85	0.96	2.2
Vinyl Chloride	75-01-4	0.14	0.40	0.46	Not Detected

J = Estimated value.

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	104
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	IAF-12400BELDEN-10_091520	Date/Time Analyzed:	9/25/20 06:15 PM
Lab ID:	2009561-12A	Dilution Factor:	1.61
Date/Time Collected:	9/15/20 04:02 PM	Instrument/Filename:	msd20.i / 20092514
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.36	0.56	0.64	Not Detected
1,4-Dioxane	123-91-1	0.34	0.51	0.58	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.30	0.56	0.64	Not Detected
Tetrachloroethene	127-18-4	0.42	0.96	1.1	0.58 J
trans-1,2-Dichloroethene	156-60-5	0.32	0.56	0.64	2.4
Trichloroethene	79-01-6	0.45	0.76	0.86	2.4
Vinyl Chloride	75-01-4	0.13	0.36	0.41	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	IAF-12400BELDEN-11_091520	Date/Time Analyzed:	9/25/20 06:55 PM
Lab ID:	2009561-13A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:42 PM	Instrument/Filename:	msd20.i / 20092515
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	0.45 J
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.63 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.3
Trichloroethene	79-01-6	0.49	0.83	0.94	2.5
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	IAF-12400BELDEN-12_091520	Date/Time Analyzed:	9/25/20 07:34 PM
Lab ID:	2009561-14A	Dilution Factor:	1.75
Date/Time Collected:	9/15/20 04:00 PM	Instrument/File name:	msd20.i / 20092516
Media:	6 Liter Summa Canister (100% Cert Ambier)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.39	0.61	0.69	Not Detected
1,4-Dioxane	123-91-1	0.37	0.55	0.63	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.33	0.61	0.69	Not Detected
Tetrachloroethene	127-18-4	0.46	1.0	1.2	0.68 J
trans-1,2-Dichloroethene	156-60-5	0.35	0.61	0.69	2.3
Trichloroethene	79-01-6	0.49	0.83	0.94	2.6
Vinyl Chloride	75-01-4	0.14	0.39	0.45	Not Detected

J = Estimated value.

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	104
Toluene-d8	2037-26-5	70-130	102

Analysis Request /Canister Chain of Custody

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

PID: _____ For Laboratory Use Only
Workorder # **2009561**

Click links below to view:
[Canister Sampling Guide](#)
[Helium Shroud Video](#)

Client: Ford PID: NA
Project Name: Ford LTP
Project Manager: Kris Hinskey P.O.# 30050315.0301.01
Sampler: Xenia Chan, Patrick Labadie
Site Name: 12400 BELDEN

Special Instructions/Notes: Report ONLY: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, 1,4-Dioxane, PCE, TCE and VC. Submit results through Cadena at jim.tomalia@cadena.com. Cadena #E203631. Level IV Reporting

Turnaround Time (Rush surcharges may apply)
5 Day Turnaround Time

Canister Vacuum/Pressure Requested Analysis

Lab ID	Sample Identification	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Lab Use Only		TO-15 (See Special Instructions/Notes)	Do Not Analyze		
				Date	Time	Date	Time			Receipt	Final (psig) Gas: N ₂ / He				
01A	AA-12400BELDEN-01_091520	6L0207	24671	9/15/2020	8:56	9/15/2020	15:57	-29.5	-6.5			X			
02A	IAF-12400BELDEN-01_091520	6L1195	23419	9/15/2020	9:10	9/15/2020	16:29	-29.5	-6			X			
03A	IAF-12400BELDEN-02_091520	6L2782	23570	9/15/2020	9:08	9/15/2020	16:03	-29.5	-6.5			X			
04A	IAF-12400BELDEN-07_091520	6L2503	24287	9/15/2020	9:16	9/15/2020	16:33	-29.5	-6.5			X			
05A	IAF-12400BELDEN-03_091520	6L1840	24695	9/15/2020	9:14	9/15/2020	16:30	-29.5	-6.5			X			
06A	IAF-12400BELDEN-04_091520	6L2275	25235	9/15/2020	9:22	9/15/2020	16:31	-29	-6.5			X			
07A	IAF-12400BELDEN-05_091520	6L2689	25256	9/15/2020	9:19	9/15/2020	16:33	-29.5	-6.5			X			
08A	IAF-12400BELDEN-06_091520	6L1322	23174	9/15/2020	9:15	9/15/2020	16:35	-29.5	-6.5			X			
09A	IAF-12400BELDEN-08_091520	6L0768	25234	9/15/2020	9:26	9/15/2020	16:31	-29	-7			X			
10A	DUP-12400BELDEN-01_091520	6L0246	24500	9/15/2020	--	9/15/2020	--	-29	-7			X			
11A	IAF-12400BELDEN-09_091520	6L1804	24876	9/15/2020	9:22	9/15/2020	16:30	-29	-7			X			
12A	IAF-12400BELDEN-10_091520	6L0565	23670	9/15/2020	9:11	9/15/2020	16:02	-29.5	-5			X			
13A	IAF-12400BELDEN-11_091520	6L0763	25257	9/15/2020	9:08	9/15/2020	16:42	-29.5	-6			X			
14A	IAF-12400BELDEN-12_091520	6L1415	23443	9/15/2020	9:05	9/15/2020	16:00	-29.5	-6			X			

Relinquished by: (Signature/Affiliation) Xenia Chan / Arcadis

Date 9/17/2020 Time 1600

Received by: (Signature/Affiliation) [Signature]

Date 9/21/20 Time 0956

Relinquished by: (Signature/Affiliation)

Date _____ Time _____

Received by: (Signature/Affiliation)

Date _____ Time _____

Relinquished by: (Signature/Affiliation)

Date _____ Time _____

Received by: (Signature/Affiliation)

Date _____ Time _____

Shipper Name: Fel Bx

Custody Seals Intact?

☒ Yes ☐ No ☐ None

Good

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

9/28/2020

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

Project Name: Ford LTP
Project #:
Workorder #: 2009565

Dear Mr. Jim Tomalia

The following report includes the data for the above referenced project for sample(s) received on 9/21/2020 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 #: 2009565

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. #	30050315.0301.01
FAX:		PROJECT #	Ford LTP
DATE RECEIVED:	09/21/2020	CONTACT:	Ausha Scott
DATE COMPLETED:	09/28/2020		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SSMP-12400BELDEN-12_091520	TO-15	5.1 "Hg	14.8 psi
02A	SSMP-12400BELDEN-10_091520	TO-15	5.3 "Hg	15 psi
03A	SSMP-12400BELDEN-01_091520	TO-15	6.1 "Hg	14.6 psi
04A	SSMP-12400BELDEN-02_091520	TO-15	6.1 "Hg	14.8 psi
05A	SSMP-12400BELDEN-03_091520	TO-15	5.7 "Hg	15 psi
06A	SSMP-12400BELDEN-04_091520	TO-15	5.3 "Hg	14.9 psi
07A	SSMP-12400BELDEN-05_091520	TO-15	5.7 "Hg	14.8 psi
08A	SSMP-12400BELDEN-11_091520	TO-15	6.3 "Hg	15.1 psi
09A	SSMP-12400BELDEN-09_091520	TO-15	5.1 "Hg	15.2 psi
10A	SSMP-12400BELDEN-08_091520	TO-15	6.1 "Hg	14.9 psi
11A	SSMP-12400BELDEN-07_091520	TO-15	5.9 "Hg	15.1 psi
12A	SSMP-12400BELDEN-06_091520	TO-15	6.7 "Hg	15 psi
13A	Lab Blank	TO-15	NA	NA
14A	CCV	TO-15	NA	NA
15A	LCS	TO-15	NA	NA
15AA	LCSD	TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 09/28/20

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209219, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-19-14, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-013, Effective date: 10/18/2019, Expiration date: 10/17/2020.

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

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
EPA Method TO-15
Arcadis U.S., Inc.
Workorder# 2009565

Twelve 1 Liter Summa Canister (100% Certified) samples were received on September 21, 2020. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

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 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:	SSMP-12400BELDEN-12_091520	Date/Time Analyzed:	9/25/20 02:20 PM
Lab ID:	2009565-01A	Dilution Factor:	2.42
Date/Time Collected:	9/15/20 09:56 AM	Instrument/Filename:	msdj.i / j092509
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.1	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.2	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	2.3	4.9	8.2	13
trans-1,2-Dichloroethene	156-60-5	0.96	2.9	4.8	200
Trichloroethene	79-01-6	1.6	3.9	6.5	460
Vinyl Chloride	75-01-4	0.56	1.8	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	104
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	101

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

Client ID:	SSMP-12400BELDEN-10_091520	Date/Time Analyzed:	9/25/20 02:46 PM
Lab ID:	2009565-02A	Dilution Factor:	2.45
Date/Time Collected:	9/15/20 10:35 AM	Instrument/Filename:	msdj.i / j092510
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	2.3	5.0	8.3	25
trans-1,2-Dichloroethene	156-60-5	0.97	2.9	4.8	430
Trichloroethene	79-01-6	1.6	3.9	6.6	900
Vinyl Chloride	75-01-4	0.56	1.9	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	104
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-01_091520	Date/Time Analyzed:	9/25/20 03:13 PM
Lab ID:	2009565-03A	Dilution Factor:	2.50
Date/Time Collected:	9/15/20 11:03 AM	Instrument/Filename:	msdj.i / j092511
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.4	6.3	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.5	21
trans-1,2-Dichloroethene	156-60-5	0.99	3.0	5.0	36
Trichloroethene	79-01-6	1.6	4.0	6.7	390
Vinyl Chloride	75-01-4	0.58	1.9	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	102
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-02_091520	Date/Time Analyzed:	9/25/20 03:39 PM
Lab ID:	2009565-04A	Dilution Factor:	2.52
Date/Time Collected:	9/15/20 11:38 AM	Instrument/File name:	msdj.i / j092512
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.4	6.4	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.5	13
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.0	2.0 J
Trichloroethene	79-01-6	1.6	4.1	6.8	81
Vinyl Chloride	75-01-4	0.58	1.9	3.2	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	SSMP-12400BELDEN-03_091520	Date/Time Analyzed:	9/25/20 04:05 PM
Lab ID:	2009565-05A	Dilution Factor:	2.49
Date/Time Collected:	9/15/20 12:06 PM	Instrument/Filename:	msdj.i / j092513
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	3.0	4.9	Not Detected
1,4-Dioxane	123-91-1	4.4	6.3	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	4.9	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.4	13
trans-1,2-Dichloroethene	156-60-5	0.99	3.0	4.9	41
Trichloroethene	79-01-6	1.6	4.0	6.7	340
Vinyl Chloride	75-01-4	0.57	1.9	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	103
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	SSMP-12400BELDEN-04_091520	Date/Time Analyzed:	9/25/20 04:31 PM
Lab ID:	2009565-06A	Dilution Factor:	2.44
Date/Time Collected:	9/15/20 12:31 PM	Instrument/Filename:	msdj.i / j092514
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.2	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	2.3	5.0	8.3	3.7 J
trans-1,2-Dichloroethene	156-60-5	0.97	2.9	4.8	4.1 J
Trichloroethene	79-01-6	1.6	3.9	6.6	32
Vinyl Chloride	75-01-4	0.56	1.9	3.1	Not Detected

J = Estimated value.

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	97
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-05_091520	Date/Time Analyzed:	9/25/20 04:58 PM
Lab ID:	2009565-07A	Dilution Factor:	2.48
Date/Time Collected:	9/15/20 12:58 PM	Instrument/Filename:	msdj.i / j092515
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	3.0	4.9	2.0 J
1,4-Dioxane	123-91-1	4.4	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	2.9	4.9	Not Detected
Tetrachloroethene	127-18-4	2.4	5.0	8.4	3.6 J
trans-1,2-Dichloroethene	156-60-5	0.98	2.9	4.9	6.0
Trichloroethene	79-01-6	1.6	4.0	6.7	21
Vinyl Chloride	75-01-4	0.57	1.9	3.2	Not Detected

J = Estimated value.

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	93
Toluene-d8	2037-26-5	70-130	101

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

Client ID:	SSMP-12400BELDEN-11_091520	Date/Time Analyzed:	9/25/20 05:24 PM
Lab ID:	2009565-08A	Dilution Factor:	2.57
Date/Time Collected:	9/15/20 10:25 AM	Instrument/Filename:	msdj.i / j092516
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	3.0	5.1	Not Detected
1,4-Dioxane	123-91-1	4.5	6.5	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.1	1.4 J
Tetrachloroethene	127-18-4	2.4	5.2	8.7	19
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.1	820
Trichloroethene	79-01-6	1.6	4.1	6.9	690
Vinyl Chloride	75-01-4	0.59	2.0	3.3	Not Detected

J = Estimated value.

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	92
Toluene-d8	2037-26-5	70-130	104

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

Client ID:	SSMP-12400BELDEN-09_091520	Date/Time Analyzed:	9/25/20 08:05 PM
Lab ID:	2009565-09A	Dilution Factor:	2.45
Date/Time Collected:	9/15/20 10:32 AM	Instrument/Filename:	msdj.i / j092517
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	2.9	4.8	1.3 J
Tetrachloroethene	127-18-4	2.3	5.0	8.3	27
trans-1,2-Dichloroethene	156-60-5	0.97	2.9	4.8	320
Trichloroethene	79-01-6	1.6	3.9	6.6	620
Vinyl Chloride	75-01-4	0.56	1.9	3.1	Not Detected

J = Estimated value.

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	92
Toluene-d8	2037-26-5	70-130	101

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

Client ID:	SSMP-12400BELDEN-08_091520	Date/Time Analyzed:	9/25/20 08:32 PM
Lab ID:	2009565-10A	Dilution Factor:	2.53
Date/Time Collected:	9/15/20 11:26 AM	Instrument/Filename:	msdj.i / j092518
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.5	6.4	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.6	18
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.0	95
Trichloroethene	79-01-6	1.6	4.1	6.8	470
Vinyl Chloride	75-01-4	0.58	1.9	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	101
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-07_091520	Date/Time Analyzed:	9/25/20 08:58 PM
Lab ID:	2009565-11A	Dilution Factor:	2.52
Date/Time Collected:	9/15/20 12:43 PM	Instrument/Filename:	msdj.i / j092519
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.4	6.4	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.5	9.9
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.0	14
Trichloroethene	79-01-6	1.6	4.1	6.8	110
Vinyl Chloride	75-01-4	0.58	1.9	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	104
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	SSMP-12400BELDEN-06_091520	Date/Time Analyzed:	9/25/20 09:24 PM
Lab ID:	2009565-12A	Dilution Factor:	2.60
Date/Time Collected:	9/15/20 12:36 PM	Instrument/Filename:	msdj.i / j092520
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	3.1	5.2	Not Detected
1,4-Dioxane	123-91-1	4.6	6.6	19	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.1	5.2	Not Detected
Tetrachloroethene	127-18-4	2.5	5.3	8.8	29
trans-1,2-Dichloroethene	156-60-5	1.0	3.1	5.2	5.8
Trichloroethene	79-01-6	1.7	4.2	7.0	240
Vinyl Chloride	75-01-4	0.60	2.0	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	105
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	106

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

Client ID:	Lab Blank	Date/Time Analyzed:	9/25/20 12:36 PM
Lab ID:	2009565-13A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msdj.i / j092506a
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	0.67	1.2	2.0	Not Detected
1,4-Dioxane	123-91-1	1.8	2.5	7.2	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.52	1.2	2.0	Not Detected
Tetrachloroethene	127-18-4	0.95	2.0	3.4	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.40	1.2	2.0	Not Detected
Trichloroethene	79-01-6	0.64	1.6	2.7	Not Detected
Vinyl Chloride	75-01-4	0.23	0.77	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	102
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	99

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

Client ID:	CCV	Date/Time Analyzed:	9/25/20 11:20 AM
Lab ID:	2009565-14A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msdj.i / j092503
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	91
1,4-Dioxane	123-91-1	108
cis-1,2-Dichloroethene	156-59-2	106
Tetrachloroethene	127-18-4	102
trans-1,2-Dichloroethene	156-60-5	92
Trichloroethene	79-01-6	91
Vinyl Chloride	75-01-4	93

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	116
Toluene-d8	2037-26-5	70-130	101

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

Client ID:	LCS	Date/Time Analyzed:	9/25/20 11:45 AM
Lab ID:	2009565-15A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/File name:	msdj.i / j092504
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	90
1,4-Dioxane	123-91-1	106
cis-1,2-Dichloroethene	156-59-2	106
Tetrachloroethene	127-18-4	98
trans-1,2-Dichloroethene	156-60-5	89
Trichloroethene	79-01-6	92
Vinyl Chloride	75-01-4	94

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98
4-Bromofluorobenzene	460-00-4	70-130	111
Toluene-d8	2037-26-5	70-130	99

* % Recovery is calculated using unrounded analytical results.

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

Client ID:	LCSD	Date/Time Analyzed:	9/25/20 12:10 PM
Lab ID:	2009565-15AA	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msdj.i / j092505
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	93
1,4-Dioxane	123-91-1	105
cis-1,2-Dichloroethene	156-59-2	108
Tetrachloroethene	127-18-4	98
trans-1,2-Dichloroethene	156-60-5	89
Trichloroethene	79-01-6	89
Vinyl Chloride	75-01-4	93

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	99
4-Bromofluorobenzene	460-00-4	70-130	109
Toluene-d8	2037-26-5	70-130	97

* % Recovery is calculated using unrounded analytical results.



September 28, 2020

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CADENA project ID: E203631
Project: Ford Livonia Transmission Project - Soil Gas and Groundwater
Project number: 30050315.0301.01
Client project scopereference: Sample COC only was used to define project analytical requirements.
Laboratory: Eurofins Air Toxics -Folsom
Laboratory submittal: 2009565
Sample date: 2020-09-15
Report received by CADENA: 2020-09-28
Initial Data Verification completed: 2020-09-28
12 Air samples were analyzed for TO-15 parameters.

No data qualifications or sample integrity issues were observed.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan


Volatile Organic Compounds (VOC) TO-15 Analysis

SDG #2009565

CADENA Verification Report: 2020-09-28

Analyses Performed By:
Eurofins Air Toxics
Folsom, California

Report #38575R
Review Level: Tier III
Project: 30050315.301.02

A large, solid orange geometric shape, resembling a stylized triangle or a section of a larger triangle, is positioned in the bottom right corner of the page. It is composed of two overlapping triangles, creating a diagonal line across its surface. A thin white horizontal line runs across the page, intersecting the orange shape.

DATA REVIEW

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 2009565 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III includes a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
						TO-15 (Full Scan)	TO-15 (SIM)	MISC
2009565	SSMP-12400BELDEN-12_091520	2009565-01A	Air	9/15/2020		X		
	SSMP-12400BELDEN-10_091520	2009565-02A	Air	9/15/2020		X		
	SSMP-12400BELDEN-01_091520	2009565-03A	Air	9/15/2020		X		
	SSMP-12400BELDEN-02_091520	2009565-04A	Air	9/15/2020		X		
	SSMP-12400BELDEN-03_091520	2009565-05A	Air	9/15/2020		X		
	SSMP-12400BELDEN-04_091520	2009565-06A	Air	9/15/2020		X		
	SSMP-12400BELDEN-05_091520	2009565-07A	Air	9/15/2020		X		
	SSMP-12400BELDEN-11_091520	2009565-08A	Air	9/15/2020		X		
	SSMP-12400BELDEN-09_091520	2009565-09A	Air	9/15/2020		X		

DATA REVIEW

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
						TO-15 (Full Scan)	TO-15 (SIM)	MISC
	SSMP-12400BELDEN-08_091520	2009565-10A	Air	9/15/2020		X		
	SSMP-12400BELDEN-07_091520	2009565-11A	Air	9/15/2020		X		
	SSMP-12400BELDEN-06_091520	2009565-12A	Air	9/15/2020		X		

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method TO-15 (Full Scan). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 - J+ The result is an estimated quantity, but the result may be biased high.
 - J- The result is an estimated quantity, but the result may be biased low.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
USEPA TO-15	Air	30 days from collection to analysis (Canister)	Ambient Temperature	< -2" Hg

All samples were analyzed within the specified holding time and canister return pressure / vacuum criteria.

2. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (30%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and RRF value greater than control limit (0.05).

All compounds associated with the continuing calibrations were within the specified control limits.

4. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than 140% or less than 60% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

DATA REVIEW

5. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra. All identified compounds met the specified criteria.

6. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 35% for air matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are not greater than five times the RL, a control limit of three times the RL is applied to the difference between the duplicate sample results.

A field duplicate was not performed on a sample location within this SDG.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: TO-15 (Full Scan)	Reported		Performance Acceptable		Not Required	
	No	Yes	No	Yes		
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)						
Tier II Validation						
Canister return pressure (<-2"Hg)		X		X		
Tier III Validation						
System performance and column resolution		X		X		
Initial calibration %RSDs		X		X		
Continuing calibration RRFs		X		X		
Continuing calibration %Ds		X		X		
Instrument tune and performance check		X		X		
Ion abundance criteria for each instrument used		X		X		
Internal standard		X		X		
Field Duplicate Sample RPD					X	
Compound identification and quantitation						
A. Reconstructed ion chromatograms		X		X		
B. Quantitation Reports		X		X		
C. RT of sample compounds within the established RT windows		X		X		
D. Transcription/calculation errors present		X		X		
E. Reporting limits adjusted to reflect sample dilutions		X		X		

Notes:

%RSD Relative standard deviation

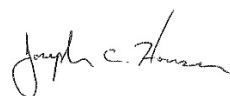
%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Joseph C. Houser

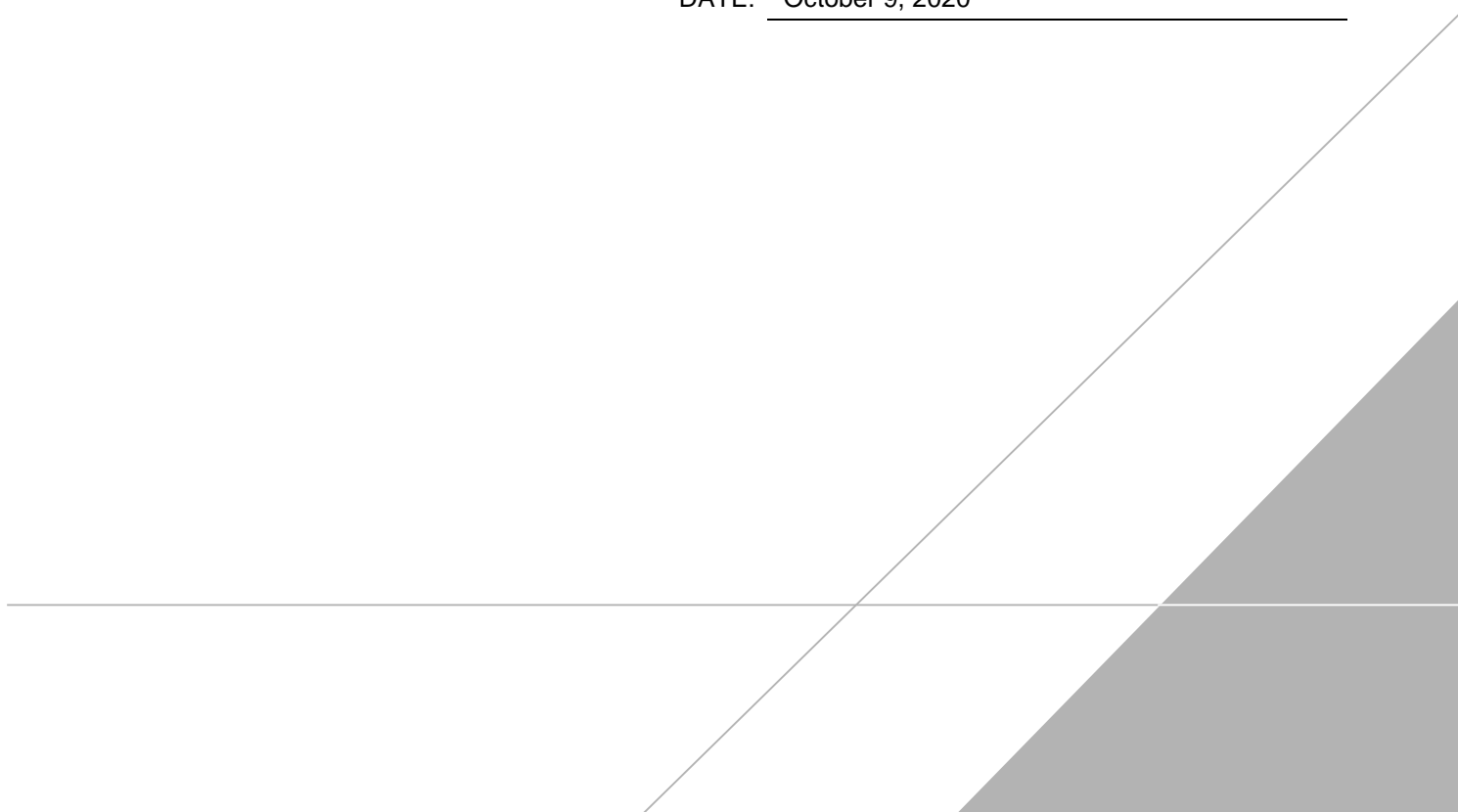
SIGNATURE:



DATE: October 8, 2020

PEER REVIEW: Dennis Capria

DATE: October 9, 2020



**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



**NO CORRECTIONS/QUALIFIERS ADDED
TO SAMPLE ANALYSIS DATA SHEETS**



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

Client ID:	SSMP-12400BELDEN-12_091520	Date/Time Analyzed:	9/25/20 02:20 PM
Lab ID:	2009565-01A	Dilution Factor:	2.42
Date/Time Collected:	9/15/20 09:56 AM	Instrument/Filename:	msdj.i / j092509
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.1	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.2	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	2.3	4.9	8.2	13
trans-1,2-Dichloroethene	156-60-5	0.96	2.9	4.8	200
Trichloroethene	79-01-6	1.6	3.9	6.5	460
Vinyl Chloride	75-01-4	0.56	1.8	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	104
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	101

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

Client ID:	SSMP-12400BELDEN-10_091520	Date/Time Analyzed:	9/25/20 02:46 PM
Lab ID:	2009565-02A	Dilution Factor:	2.45
Date/Time Collected:	9/15/20 10:35 AM	Instrument/Filename:	msdj.i / j092510
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	2.3	5.0	8.3	25
trans-1,2-Dichloroethene	156-60-5	0.97	2.9	4.8	430
Trichloroethene	79-01-6	1.6	3.9	6.6	900
Vinyl Chloride	75-01-4	0.56	1.9	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	104
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-01_091520	Date/Time Analyzed:	9/25/20 03:13 PM
Lab ID:	2009565-03A	Dilution Factor:	2.50
Date/Time Collected:	9/15/20 11:03 AM	Instrument/Filename:	msdj.i / j092511
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.4	6.3	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.5	21
trans-1,2-Dichloroethene	156-60-5	0.99	3.0	5.0	36
Trichloroethene	79-01-6	1.6	4.0	6.7	390
Vinyl Chloride	75-01-4	0.58	1.9	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	102
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-02_091520	Date/Time Analyzed:	9/25/20 03:39 PM
Lab ID:	2009565-04A	Dilution Factor:	2.52
Date/Time Collected:	9/15/20 11:38 AM	Instrument/Filename:	msdj.i / j092512
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.4	6.4	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.5	13
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.0	2.0 J
Trichloroethene	79-01-6	1.6	4.1	6.8	81
Vinyl Chloride	75-01-4	0.58	1.9	3.2	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	SSMP-12400BELDEN-03_091520	Date/Time Analyzed:	9/25/20 04:05 PM
Lab ID:	2009565-05A	Dilution Factor:	2.49
Date/Time Collected:	9/15/20 12:06 PM	Instrument/Filename:	msdj.i / j092513
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	3.0	4.9	Not Detected
1,4-Dioxane	123-91-1	4.4	6.3	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	4.9	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.4	13
trans-1,2-Dichloroethene	156-60-5	0.99	3.0	4.9	41
Trichloroethene	79-01-6	1.6	4.0	6.7	340
Vinyl Chloride	75-01-4	0.57	1.9	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	103
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	105

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

Client ID:	SSMP-12400BELDEN-04_091520	Date/Time Analyzed:	9/25/20 04:31 PM
Lab ID:	2009565-06A	Dilution Factor:	2.44
Date/Time Collected:	9/15/20 12:31 PM	Instrument/Filename:	msdj.i / j092514
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.2	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	2.3	5.0	8.3	3.7 J
trans-1,2-Dichloroethene	156-60-5	0.97	2.9	4.8	4.1 J
Trichloroethene	79-01-6	1.6	3.9	6.6	32
Vinyl Chloride	75-01-4	0.56	1.9	3.1	Not Detected

J = Estimated value.

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	97
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-05_091520	Date/Time Analyzed:	9/25/20 04:58 PM
Lab ID:	2009565-07A	Dilution Factor:	2.48
Date/Time Collected:	9/15/20 12:58 PM	Instrument/Filename:	msdj.i / j092515
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	3.0	4.9	2.0 J
1,4-Dioxane	123-91-1	4.4	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	2.9	4.9	Not Detected
Tetrachloroethene	127-18-4	2.4	5.0	8.4	3.6 J
trans-1,2-Dichloroethene	156-60-5	0.98	2.9	4.9	6.0
Trichloroethene	79-01-6	1.6	4.0	6.7	21
Vinyl Chloride	75-01-4	0.57	1.9	3.2	Not Detected

J = Estimated value.

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	93
Toluene-d8	2037-26-5	70-130	101

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

Client ID:	SSMP-12400BELDEN-11_091520	Date/Time Analyzed:	9/25/20 05:24 PM
Lab ID:	2009565-08A	Dilution Factor:	2.57
Date/Time Collected:	9/15/20 10:25 AM	Instrument/File name:	msdj.i / j092516
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	3.0	5.1	Not Detected
1,4-Dioxane	123-91-1	4.5	6.5	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.1	1.4 J
Tetrachloroethene	127-18-4	2.4	5.2	8.7	19
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.1	820
Trichloroethene	79-01-6	1.6	4.1	6.9	690
Vinyl Chloride	75-01-4	0.59	2.0	3.3	Not Detected

J = Estimated value.

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	92
Toluene-d8	2037-26-5	70-130	104

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

Client ID:	SSMP-12400BELDEN-09_091520	Date/Time Analyzed:	9/25/20 08:05 PM
Lab ID:	2009565-09A	Dilution Factor:	2.45
Date/Time Collected:	9/15/20 10:32 AM	Instrument/Filename:	msdj.i / j092517
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	1.6	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	4.3	6.2	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	2.9	4.8	1.3 J
Tetrachloroethene	127-18-4	2.3	5.0	8.3	27
trans-1,2-Dichloroethene	156-60-5	0.97	2.9	4.8	320
Trichloroethene	79-01-6	1.6	3.9	6.6	620
Vinyl Chloride	75-01-4	0.56	1.9	3.1	Not Detected

J = Estimated value.

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	92
Toluene-d8	2037-26-5	70-130	101

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

Client ID:	SSMP-12400BELDEN-08_091520	Date/Time Analyzed:	9/25/20 08:32 PM
Lab ID:	2009565-10A	Dilution Factor:	2.53
Date/Time Collected:	9/15/20 11:26 AM	Instrument/Filename:	msdj.i / j092518
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.5	6.4	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.6	18
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.0	95
Trichloroethene	79-01-6	1.6	4.1	6.8	470
Vinyl Chloride	75-01-4	0.58	1.9	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	101
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	102

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

Client ID:	SSMP-12400BELDEN-07_091520	Date/Time Analyzed:	9/25/20 08:58 PM
Lab ID:	2009565-11A	Dilution Factor:	2.52
Date/Time Collected:	9/15/20 12:43 PM	Instrument/Filename:	msdj.i / j092519
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	3.0	5.0	Not Detected
1,4-Dioxane	123-91-1	4.4	6.4	18	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.0	5.0	Not Detected
Tetrachloroethene	127-18-4	2.4	5.1	8.5	9.9
trans-1,2-Dichloroethene	156-60-5	1.0	3.0	5.0	14
Trichloroethene	79-01-6	1.6	4.1	6.8	110
Vinyl Chloride	75-01-4	0.58	1.9	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	104
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	103

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

Client ID:	SSMP-12400BELDEN-06_091520	Date/Time Analyzed:	9/25/20 09:24 PM
Lab ID:	2009565-12A	Dilution Factor:	2.60
Date/Time Collected:	9/15/20 12:36 PM	Instrument/Filename:	msdj.i / j092520
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	3.1	5.2	Not Detected
1,4-Dioxane	123-91-1	4.6	6.6	19	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	3.1	5.2	Not Detected
Tetrachloroethene	127-18-4	2.5	5.3	8.8	29
trans-1,2-Dichloroethene	156-60-5	1.0	3.1	5.2	5.8
Trichloroethene	79-01-6	1.7	4.2	7.0	240
Vinyl Chloride	75-01-4	0.60	2.0	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	105
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	106

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

PID: _____ Workorder #: **2009565**

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

Click links below to view:

[Canister Sampling Guide](#)

[Helium Shroud Video](#)

Client: Ford PID: NA Special Instructions/Notes: Report ONLY: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, 1,4-Dioxane, PCE, TCE and VC. Submit results through Cadena at jim.tomalia@cadena.com. Cadena #E203631. Level IV Reporting

Project Name: Ford LTP

Project Manager: Kris Hinskey P.O.# 30050315.0301.01

Sampler: Patrick Labadie, Xenia Chan

Site Name: 12400 BELDEN

Turnaround Time (Rush surcharges may apply)

5 Day Turnaround Time

Canister Vacuum/Pressure Requested Analyses

Lab ID	Sample Identification	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Lab Use Only		TO-15 (See Special Instructions/Notes)	Do Not Analyze		
				Date	Time	Date	Time			Receipt	Final (psig) Gas: N ₂ / He				
01A	SSMP-12400BELDEN-12_091520	1L1522	25263	9/15/2020	9:45	9/15/2020	9:56	-29	-6			X			
02A	SSMP-12400BELDEN-10_091520	1L1756	24148	9/15/2020	10:23	9/15/2020	10:35	-29	-5.5			X			
03A	SSMP-12400BELDEN-01_091520	1L1940	23655	9/15/2020	10:51	9/15/2020	11:03	-29	-6.5			X			
04A	SSMP-12400BELDEN-02_091520	1L1890	23609	9/15/2020	11:26	9/15/2020	11:38	-29	-6.5			X			
05A	SSMP-12400BELDEN-03_091520	1L3355	23450	9/15/2020	11:54	9/15/2020	12:06	-29.5	-6			X			
06A	SSMP-12400BELDEN-04_091520	1L1570	23577	9/15/2020	12:19	9/15/2020	12:31	-29	-5.5			X			
07A	SSMP-12400BELDEN-05_091520	1L3850	24680	9/15/2020	12:46	9/15/2020	12:58	-29	-6			X			
08A	SSMP-12400BELDEN-11_091520	1L2709	23499	9/15/2020	10:15	9/15/2020	10:25	-29	-7			X			
09A	SSMP-12400BELDEN-09_091520	1L3817	23506	9/15/2020	10:21	9/15/2020	10:32	-29	-6			X			
10A	SSMP-12400BELDEN-08_091520	1L1744	24874	9/15/2020	11:14	9/15/2020	11:26	-29.5	-6.5			X			
11A	SSMP-12400BELDEN-07_091520	1L3945	25190	9/15/2020	12:32	9/15/2020	12:43	-29.5	-6.5			X			
12A	SSMP-12400BELDEN-06_091520	1L1854	25237	9/15/2020	12:24	9/15/2020	12:36	-29.5	-7			X			
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Relinquished by: (Signature/Affiliation) <i>Christopher Wilson</i> / ARCADIS	Date 9/17/20	Time 1600	Received by: (Signature/Affiliation) <i>Jim Tomalia</i> EAST	Date 9/21/20	Time 0956
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Lab Use Only

Shipper Name: Fed Ex Custody Seals Intact? ☒ Yes ☐ No ☐ None GOOD

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