February 16, 2022

Mike Jagemann
Jagemann Plating
1324 S 26th Street
Manitowoc, WI 54220

Subject: **Vapor Intrusion Monitoring Results**
BRTTS #: 02-36-555544

Dear Mr. Jagemann:

In accordance with Wisconsin Department of Natural Resources (WDNR) regulation NR 716.14, EnviroForensics, LLC (EnviroForensics) is providing the results of recent indoor air and sub-slab vapor samples collected from your property located at 1324 S 26th Street in Manitowoc, Wisconsin.

Indoor air and sub-slab sampling were performed as outlined in the Interim Action Documentation Report & Operation, Maintenance, & Monitoring Plan, dated November 5, 2021. The sampling plan originally scheduled for December was postponed until January 2022. The sampling event followed included the following.

Office:				
Sample IDs	Summa 8-hr IA	Passive 8-hr IA	Passive 5-day IA	Summa - Grab
IA-4	1	1	1	--
IA-5	1	1	1	--
IA-6	1	1	1	--
IA-9	1	1	1	--
SSDS Effluent	--	--	--	1

Plant:				
Sample IDs	Summa 8-Hour IA	Paired Summa SSV	Passive 8-hour IA	Passive 5-day IA
IA-1	1	1	1	1
IA-2	1	1	1	1
IA-3	1	1	1	1
IA-7	1	1	1	1
IA-8	1	1	1	1
IA-10	1	1	1	1
IA-11	1	1	1	1
IA-12	1	--	1	1

The plan was devised to evaluate both short term and long-term exposure potentials and show duplicability between the passive and summa canister sampling.

Twelve (12) 8-hour indoor air samples were collected in Summa canisters and paired with passive Beacon Chlorosorber™ sampling media (passive) on January 10, 2022. Twelve (12) 5-day indoor passive air samples were collected from January 10-14, 2022 and seven (7) sub slab vapor samples were collected on January 14, 2022. An effluent sample from the sub slab depressurization system was collected January 26, 2022. The sample SSV-10 was damaged in transit to the laboratory and is not listed no result is reported. **Figure 1** presents the sample locations. The vapor samples were analyzed for select VOCs for the chlorinated volatile organic compounds (CVOCs) listed in **Table 1** with summa canister samples being analyzed by US EPA Method TO-15 and passive samples analyzed by US EPA Method TO-17.

Sampling Results and Conclusions

Table 1 summarizes the sampling event results with past sample results compared to Large Commercial Vapor Action Levels (LCVALs). Three (3) of the four (4) office indoor air samples contained detections of trichloroethene (TCE) but at concentrations *below* the LCVALs. Seven (7) of the eight (8) plant indoor air samples contained detections of tetrachloroethene (PCE) but at concentrations *below* the LCVALs. Of those seven (7) samples, two (2) samples contained TCE but at concentrations *below* the LCVALs

Five (5) of the seven (7) sub-slab samples contained TCE above the Large Commercial Vapor Risk Screening Levels (LCVRSLs). Several samples contained additional breakdown products of TCE and PCE but below the LCVRSLs. The effluent sample contained all tested CVOCs, but screening levels are not applicable to such a sample. The laboratory analytical reports are also attached.

The indoor air and paired sub-slab vapor samples show the Site is adequately mitigated by the existing sub-slab depressurization system (SSDS) and plant mechanical systems

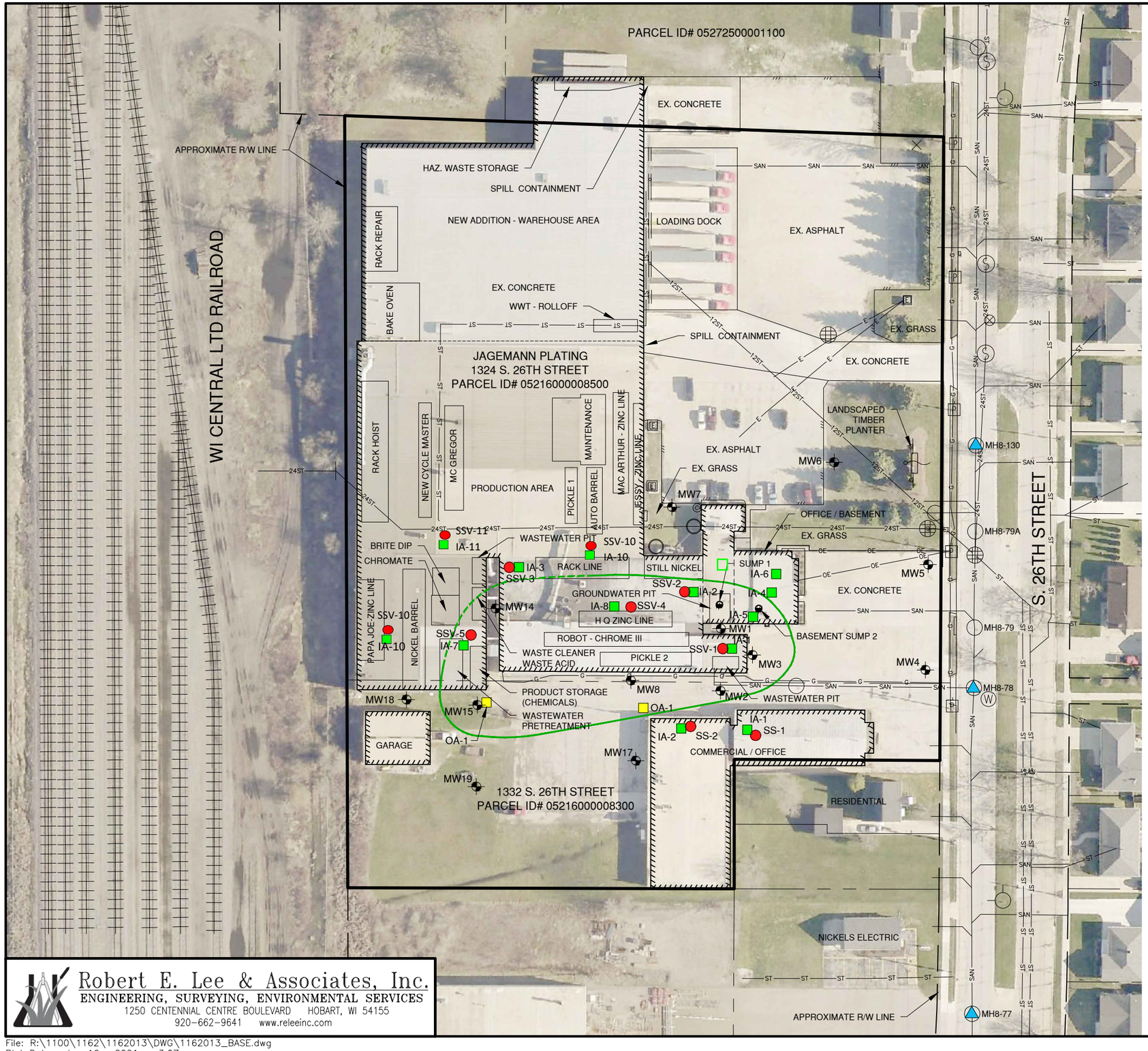
If you have any questions or concerns, please contact me at 262-290-4001 or by email at rhoverman@enviroforensics.com.

Sincerely,
EnviroForensics, LLC

Rob Hoverman, PG
Project Manager

Attachments: Figure 1: Vapor Sample Locations
Table 1: Sample Results Summary
Laboratory Analytical Reports

Copy: Tauren Beggs, Wisconsin Department of Natural Resources



0' 80' 160'

SCALE IN FEET

NORTH

LEGEND

- PROPOSED INDOOR AIR LOCATION4
- PROPOSED SUB-SLAB VAPOR LOCATION
- MW1 — MONITORING WELL LOCATION
- PZ1 — PIEZOMETER LOCATION
- IA-1 — INDOOR AIR SAMPLE LOCATION OUTDOOR
- OA-1 — AIR SAMPLE LOCATION
- SSV-1 — SUB-SLAB VAPOR SAMPLE LOCATION
- MH8-78 — IN-PIPE SANITARY SEWER VAPOR SAMPLE
- SUMP
- EX. SANITARY MANHOLE
- EX. STORM SEWER MANHOLE
- EX. STORM SEWER CATCH BASIN
- EX. FIRE HYDRANT
- EX. WATER VALVE
- EX. WATER MANHOLE
- EX. ELECTRIC PEDESTAL
- EX. POWER POLE
- EX. STORM SEWER
- EX. SANITARY SEWER
- EX. WATERMAIN
- EX. GAS LINE
- EX. ELECTRIC LINE
- EX. TELEPHONE LINE
- EX. FIBER OPTICS LINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- SITE BOUNDARY LINE
- ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION IN EXCESS OF ENFORCEMENT STANDARD (DASHED WHERE INFERRED)

JAGEMANN PLATING COMPANY
1324 S. 26TH STREET
MANITOWOC, WI

SITE PLAN

FIGURE 1

Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
920-662-9641 www.releeinc.com

File: R:\1100\1162\1162013\DWG\1162013_BASE.dwg
Plot Date: Jun 16, 2021 - 3:07pm

Table 1
Vapor Inrusion Analytical Results
Jagemann Plating
Manitowoc, Wisconsin
EnviroForensics Project No. 200032

Sample Idetification	Sample Location	Sample Type	Mitigation?	Date Sampled	Tetrachloroethene	Trichlorethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethlyene	Vinyl Chloride
INDOOR/ OUTDOOR AIR										
Large Commercial Vapor Action Level					**180**	**8.8**	**NL**	**180**	**880**	**28**
IA-1	Former Waste Water Treatment Plant Room	SUMMA	No	2/9/2014	NA	**0.89**	ND	ND	ND	**0.39**
			Yes	1/10/2022	<0.44	<0.30	<0.30	<0.26	<0.21	<0.13
		Passive 8 Hour		1/10/2022	<9.59	<8.12	<7.54	<7.54	<11.7	<9.42
		Passive 5 Day		1/14/2022	<0.803	<0.680	<0.631	<0.631	<0.982	<0.789
IA-2	East Side Chromium Dip Line Area	SUMMA	No	2/9/2014	NA	**1.7**	ND	ND	ND	ND
			Yes	1/10/2022	<0.45	<0.30	<0.30	<0.26	<0.21	<0.13
		Passive 8 Hour		1/10/2022	<9.42	<7.97	<7.40	<7.40	<11.5	<9.25
		Passive 5 Day		1/14/2022	**1.53 J**	<0.679	<0.630	<0.630	<0.981	<0.788
IA-3	West Side Chromium Dip Line and Pickling Line Area	SUMMA	No	2/9/2014	NA	ND	ND	ND	ND	ND
			Yes	1/10/2022	<0.46	<0.31	<0.31	<0.27	<0.22	<0.14
		Passive 8 Hour		1/10/2022	<9.59	<8.12	<7.54	<7.54	<11.7	<9.42
		Passive 5 Day		1/14/2022	**2.94**	<0.680	<0.632	<0.632	<0.983	<0.790
IA-4	First Floor Office Area	SUMMA	No	2/9/2014	NA	**9.2**	**5.2**	ND	ND	ND
			Yes	3/27/2021	NA	0.56 J	<0.22	<0.26	<0.20	<0.13
				1/10/2022	<0.43	**1.2**	<0.28	<0.25	<0.20	<0.13
		Passive 8 Hour		1/10/2022	<9.46	<8.00	<7.43	<7.43	<11.6	<9.29
		Passive 5 Day		1/14/2022	<0.799	**0.714**	<0.628	<0.628	<0.977	<0.785
IA-5	Basement Storage Area Adjacent to Mecanical Room	SUMMA	No	2/9/2014	NA	**14.4**	**9.0**	ND	ND	ND
			Yes	3/27/2021	NA	<0.32	<0.21	<0.25	<0.19	<0.13
				1/10/2022	<0.42	**0.74 J**	<0.28	<0.24	<0.20	<0.12
		Passive 8 Hour		1/10/2022	<9.55	<8.08	<7.51	<7.51	<11.7	<9.38
		Passive 5 Day		1/14/2022	<0.800	<0.677	<0.628	<0.628	<0.977	<0.785
IA-6	Basement Office Area	SUMMA	No	2/9/2014	NA	**13.9**	**8.3**	ND	ND	ND
			Yes	3/27/2021	NA	<0.32	<0.21	<0.25	<0.19	<0.13
				1/10/2022	<0.43	**0.79 J**	<0.28	<0.25	<0.20	<0.13
		Passive 8 Hour		1/10/2022	<9.48	<8.02	<7.45	<7.45	<11.6	<9.31
		Passive 5 Day		1/14/2022	<0.800	<0.677	<0.628	<0.628	<0.978	<0.786
IA-6/8	Central Portion of South Manufacturing Area	SUMMA	Yes	5/19/2021	NA	**3.5**	**0.56 J**	<0.26	<0.21	<0.13
IA-7	West Portion of South Manufacturing Area	SUMMA	Yes	5/19/2021	NA	**0.46 J**	**0.35 J**	<0.27	<0.22	**0.43**
				1/10/2022	<0.46	<0.31	<0.31	<0.27	<0.22	<0.14
		Passive 8 Hour		1/10/2022	<10.2	<8.60	<7.99	<7.99	<12.4	<9.98
		Passive 5 Day		1/14/2022	**0.810 J**	<0.680	<0.631	<0.631	<0.982	<0.789
IA-8	North of the H Q Zinc Line	SUMMA	Yes	1/10/2022	<0.43	**2.4**	**0.39 J**	<0.25	<0.20	<0.13
		Passive 8 Hour		1/10/2022	<10.0	<8.49	<7.88	<7.88	<12.3	<9.85
		Passive 5 Day		1/14/2022	**1.71**	**1.39**	<0.631	<0.631	<0.981	<0.789
IA-9	Break Room	SUMMA	Yes	1/10/2022	<0.41	<0.27	<0.27	<0.23	<0.19	<0.12
		Passive 8 Hour		1/10/2022	<9.48	<8.02	<7.45	<7.45	<11.6	<9.31
		Passive 5 Day		1/14/2022	<0.797	<0.674	<0.626	<0.626	<0.974	<0.783
IA-10	South of Auto Barrel	SUMMA	Yes	1/10/2022	<0.44	<0.30	<0.30	<0.26	<0.21	<0.13
		Passive 8 Hour		1/10/2022	<9.80	<8.29	<7.70	<7.70	<12.0	<9.62
		Passive 5 Day		1/14/2022	**4.31**	<0.680	<0.631	<0.631	<0.982	<0.789
IA-11	North of Brite Dip	SUMMA	Yes	1/10/2022	<0.45	<0.30	<0.30	<0.26	<0.21	<0.13
		Passive 8 Hour		1/10/2022	<9.84	<8.33	<7.73	<7.73	<12.0	<9.66
		Passive 5 Day		1/14/2022	**2.32**	<0.681	<0.633	<0.633	<0.984	<0.791
IA-12	Between Papa Joe Zinc Line and Nickel Barrel	SUMMA	Yes	1/10/2022	<0.44	<0.30	<0.30	<0.26	<0.21	**4.5**
		Passive 8 Hour		1/10/2022	<9.72	<8.22	<7.63	<7.63	<11.9	<9.54
		Passive 5 Day		1/14/2022	**0.841**	<0.682	<0.633	<0.633	<0.985	**<0.791**
OA-1	Southwest of Chromuin Dip Line Building (upwind)	SUMMA	No	2/9/2014	NA	ND	ND	ND	ND	ND

Table 1
Vapor Inrusion Analytical Results
Jagemann Plating
Manitowoc, Wisconsin
EnviroForensics Project No. 200032

Sample Idetification	Sample Location	Sample Type	Mitigation?	Date Sampled	Tetrachloroethene	Trichlorethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethlyene	Vinyl Chloride
SUB SLAB VAPOR										
Large Commercial Vapor Risk Screening Level					**18,000**	**880**	**NL**	**18,000**	**88,000**	**2,800**
SSV-1	Former Waste Water Treatment Plant Room	SUMMA	No	2/9/2014	NA	**1,530**	**540**	**57.5**	**26.9**	**86.7**
			Yes	3/27/2021	NA	**461**	**1,100**	**68.3**	**9.9 J**	**7.2 J**
				1/14/2022	**4.6**	**212**	**111**	**29.2**	**8.3**	**118**
SSV-2	East Side Chromium Dip Line Area	SUMMA	No	2/9/2014	NA	**2,920**	**965**	**39.3**	**14.9 J**	**4.6 J**
			Yes	3/27/2021	NA	**6,080**	**1,050**	**67.8**	ND	**17.8**
				1/14/2022	**4.5**	**635**	**95,000**	**25.9**	**11.9**	**2.0**
SSV-3	West Side Chromium Dip Line and Pickling Line Area	SUMMA	No	2/9/2014	NA	**57.7**	**25.3**	ND	ND	**21.1**
			Yes	3/27/2021	NA	**8.4**	**8.6**	<0.24	<0.19	<0.12
				1/14/2022	<2100	**1,520,000**	**95,000**	**1,290 J**	<991	<623
SSV-4	Central Portion of South Manufacturing Area	SUMMA	Yes	3/27/2021	NA	**15,300,000**	**3,210,000**	**65,400**	**23,900**	**8,880**
				5/19/2021	NA	**31,700,000**	**6,330,000**	**162,000**	**94,100**	**117,000**
				1/14/2022	<2100	**5,150,000**	**1,370,000**			
SSV-5	West Portion of South Manufacturing Area	SUMMA	Yes	3/27/2021	NA	**9,870**	**1,290**	**344**	**478**	**1,070**
				5/19/2021	NA	**5,850**	**1,060**	**294**	**522**	**1,450**
				1/14/2022	<1050	**509,000**	**29,900**	**<603**	**586 J**	**2,380**
SSV-11	North of Brite Dip	SUMMA	Yes	1/14/2022	**30.7 J**	**65,100**	**1,960**	**27.2 J**	**60.3**	**44.9**
SSV-12	Between Papa Joe Zinc Line and Nickel Barrel	SUMMA	Yes	1/14/2022	**74.6**	**91,200**	**5,160**	**47.5**	**21.7J J**	**9.6 J**
SSDS Effluent										
EP-1	SSDS Effluent	SUMMA	Yes	1/26/2022	**4.9**	**36.9**	**19.3**	**1.1 J**	**0.27 J**	NA

Notes:

Results reported in micrograms per cubic meter ($\mu g/m^3$)
Summa samples analyzed according to EPA Method TO-15
Passive samples analyzed according to EPA Method TO-17
The Vapor Risk Screeing/Action Levels are calculated in accordance with WDNR Publication RR-800 and subsequent guidance documents.
IA = Indoor Air
OA = Outdoor Air
SSV= Sub-slab vapor
Bolded values are above detection limits
Bolded and Orange shaded concentration exceed the Large Commercial Vapor Action Level
ND = Not detected over laboratory detection limits
NA = Not Analyzed
NL = No Screening Level Established
J = Analyte concentration detected between the laboratory Reporting Limit and the laboratory Method Detection Limit

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

January 31, 2022

Rob Hoverman
EnviroForensics
N16 W23390 Stone Ridge Drive
Suite G
Waukesha, WI 53188

RE: Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Dear Rob Hoverman:

Enclosed are the analytical results for sample(s) received by the laboratory on January 13, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

This report was revised on January 31, 2022, to modify the analyte list.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout
carolynne.trout@pacelabs.com
1(612)607-6351
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
A2LA Certification #: 2926.01*
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10594312001	**IA-1 (SUMMA)**	Air	01/10/22 17:35	01/13/22 09:58
10594312002	**IA-2 (SUMMA)**	Air	01/10/22 17:24	01/13/22 09:58
10594312003	**IA-3 (SUMMA)**	Air	01/10/22 17:40	01/13/22 09:58
10594312004	**IA-4 (SUMMA)**	Air	01/10/22 16:52	01/13/22 09:58
10594312005	**IA-5 (SUMMA)**	Air	01/10/22 16:49	01/13/22 09:58
10594312006	**IA-6 (SUMMA)**	Air	01/10/22 16:46	01/13/22 09:58
10594312007	**IA-7 (SUMMA)**	Air	01/10/22 17:21	01/13/22 09:58
10594312008	**IA-8 (SUMMA)**	Air	01/10/22 17:15	01/13/22 09:58
10594312009	**IA-9 (SUMMA)**	Air	01/10/22 17:05	01/13/22 09:58
10594312010	**IA-10 (SUMMA)**	Air	01/10/22 17:44	01/13/22 09:58
10594312011	**IA-11 (SUMMA)**	Air	01/10/22 17:48	01/13/22 09:58
10594312012	**IA-12 (SUMMA)**	Air	01/10/22 18:02	01/13/22 09:58

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10594312001	**IA-1 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312002	**IA-2 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312003	**IA-3 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312004	**IA-4 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312005	**IA-5 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312006	**IA-6 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312007	**IA-7 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312008	**IA-8 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312009	**IA-9 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312010	**IA-10 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312011	**IA-11 (SUMMA)**	TO-15	AFV	6	PASI-M
10594312012	**IA-12 (SUMMA)**	TO-15	AFV	6	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Sample: IA-1 (SUMMA) **Lab ID: 10594312001** Collected: 01/10/22 17:35 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.21**	ug/m3	1.2	0.21	1.52		01/27/22 15:58	75-35-4	
cis-1,2-Dichloroethene	**<0.30**	ug/m3	1.2	0.30	1.52		01/27/22 15:58	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/m3	1.2	0.26	1.52		01/27/22 15:58	156-60-5	
Tetrachloroethene	**<0.44**	ug/m3	1.0	0.44	1.52		01/27/22 15:58	127-18-4	
Trichloroethene	**<0.30**	ug/m3	0.83	0.30	1.52		01/27/22 15:58	79-01-6	
Vinyl chloride	**<0.13**	ug/m3	0.40	0.13	1.52		01/27/22 15:58	75-01-4	

Sample: IA-2 (SUMMA) **Lab ID: 10594312002** Collected: 01/10/22 17:24 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.21**	ug/m3	1.2	0.21	1.55		01/27/22 16:57	75-35-4	
cis-1,2-Dichloroethene	**<0.30**	ug/m3	1.2	0.30	1.55		01/27/22 16:57	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/m3	1.2	0.26	1.55		01/27/22 16:57	156-60-5	
Tetrachloroethene	**<0.45**	ug/m3	1.1	0.45	1.55		01/27/22 16:57	127-18-4	
Trichloroethene	**<0.30**	ug/m3	0.85	0.30	1.55		01/27/22 16:57	79-01-6	
Vinyl chloride	**<0.13**	ug/m3	0.40	0.13	1.55		01/27/22 16:57	75-01-4	

Sample: IA-3 (SUMMA) **Lab ID: 10594312003** Collected: 01/10/22 17:40 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.22**	ug/m3	1.3	0.22	1.58		01/27/22 17:56	75-35-4	
cis-1,2-Dichloroethene	**<0.31**	ug/m3	1.3	0.31	1.58		01/27/22 17:56	156-59-2	
trans-1,2-Dichloroethene	**<0.27**	ug/m3	1.3	0.27	1.58		01/27/22 17:56	156-60-5	
Tetrachloroethene	**<0.46**	ug/m3	1.1	0.46	1.58		01/27/22 17:56	127-18-4	
Trichloroethene	**<0.31**	ug/m3	0.86	0.31	1.58		01/27/22 17:56	79-01-6	
Vinyl chloride	**<0.14**	ug/m3	0.41	0.14	1.58		01/27/22 17:56	75-01-4	

Sample: IA-4 (SUMMA) **Lab ID: 10594312004** Collected: 01/10/22 16:52 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.20**	ug/m3	1.2	0.20	1.46		01/27/22 18:25	75-35-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Sample: IA-4 (SUMMA) **Lab ID: 10594312004** Collected: 01/10/22 16:52 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
cis-1,2-Dichloroethene	**<0.28**	ug/m3	1.2	0.28	1.46		01/27/22 18:25	156-59-2	
trans-1,2-Dichloroethene	**<0.25**	ug/m3	1.2	0.25	1.46		01/27/22 18:25	156-60-5	
Tetrachloroethene	**<0.43**	ug/m3	1.0	0.43	1.46		01/27/22 18:25	127-18-4	
Trichloroethene	**1.2**	ug/m3	0.80	0.29	1.46		01/27/22 18:25	79-01-6	
Vinyl chloride	**<0.13**	ug/m3	0.38	0.13	1.46		01/27/22 18:25	75-01-4	

Sample: IA-5 (SUMMA) **Lab ID: 10594312005** Collected: 01/10/22 16:49 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.20**	ug/m3	1.2	0.20	1.44		01/27/22 18:55	75-35-4	
cis-1,2-Dichloroethene	**<0.28**	ug/m3	1.2	0.28	1.44		01/27/22 18:55	156-59-2	
trans-1,2-Dichloroethene	**<0.24**	ug/m3	1.2	0.24	1.44		01/27/22 18:55	156-60-5	
Tetrachloroethene	**<0.42**	ug/m3	0.99	0.42	1.44		01/27/22 18:55	127-18-4	
Trichloroethene	**0.74J**	ug/m3	0.79	0.28	1.44		01/27/22 18:55	79-01-6	
Vinyl chloride	**<0.12**	ug/m3	0.37	0.12	1.44		01/27/22 18:55	75-01-4	

Sample: IA-6 (SUMMA) **Lab ID: 10594312006** Collected: 01/10/22 16:46 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.20**	ug/m3	1.2	0.20	1.46		01/27/22 19:24	75-35-4	
cis-1,2-Dichloroethene	**<0.28**	ug/m3	1.2	0.28	1.46		01/27/22 19:24	156-59-2	
trans-1,2-Dichloroethene	**<0.25**	ug/m3	1.2	0.25	1.46		01/27/22 19:24	156-60-5	
Tetrachloroethene	**<0.43**	ug/m3	1.0	0.43	1.46		01/27/22 19:24	127-18-4	
Trichloroethene	**0.79J**	ug/m3	0.80	0.29	1.46		01/27/22 19:24	79-01-6	
Vinyl chloride	**<0.13**	ug/m3	0.38	0.13	1.46		01/27/22 19:24	75-01-4	

Sample: IA-7 (SUMMA) **Lab ID: 10594312007** Collected: 01/10/22 17:21 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.22**	ug/m3	1.3	0.22	1.58		01/27/22 19:53	75-35-4	
cis-1,2-Dichloroethene	**<0.31**	ug/m3	1.3	0.31	1.58		01/27/22 19:53	156-59-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Sample: IA-7 (SUMMA) **Lab ID: 10594312007** Collected: 01/10/22 17:21 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
trans-1,2-Dichloroethene	**<0.27**	ug/m3	1.3	0.27	1.58		01/27/22 19:53	156-60-5	
Tetrachloroethene	**<0.46**	ug/m3	1.1	0.46	1.58		01/27/22 19:53	127-18-4	
Trichloroethene	**<0.31**	ug/m3	0.86	0.31	1.58		01/27/22 19:53	79-01-6	
Vinyl chloride	**<0.14**	ug/m3	0.41	0.14	1.58		01/27/22 19:53	75-01-4	

Sample: IA-8 (SUMMA) **Lab ID: 10594312008** Collected: 01/10/22 17:15 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.20**	ug/m3	1.2	0.20	1.46		01/27/22 20:22	75-35-4	
cis-1,2-Dichloroethene	**0.39J**	ug/m3	1.2	0.28	1.46		01/27/22 20:22	156-59-2	
trans-1,2-Dichloroethene	**<0.25**	ug/m3	1.2	0.25	1.46		01/27/22 20:22	156-60-5	
Tetrachloroethene	**<0.43**	ug/m3	1.0	0.43	1.46		01/27/22 20:22	127-18-4	
Trichloroethene	**2.4**	ug/m3	0.80	0.29	1.46		01/27/22 20:22	79-01-6	
Vinyl chloride	**<0.13**	ug/m3	0.38	0.13	1.46		01/27/22 20:22	75-01-4	

Sample: IA-9 (SUMMA) **Lab ID: 10594312009** Collected: 01/10/22 17:05 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.19**	ug/m3	1.1	0.19	1.39		01/27/22 20:52	75-35-4	
cis-1,2-Dichloroethene	**<0.27**	ug/m3	1.1	0.27	1.39		01/27/22 20:52	156-59-2	
trans-1,2-Dichloroethene	**<0.23**	ug/m3	1.1	0.23	1.39		01/27/22 20:52	156-60-5	
Tetrachloroethene	**<0.41**	ug/m3	0.96	0.41	1.39		01/27/22 20:52	127-18-4	
Trichloroethene	**<0.27**	ug/m3	0.76	0.27	1.39		01/27/22 20:52	79-01-6	
Vinyl chloride	**<0.12**	ug/m3	0.36	0.12	1.39		01/27/22 20:52	75-01-4	

Sample: IA-10 (SUMMA) **Lab ID: 10594312010** Collected: 01/10/22 17:44 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.21**	ug/m3	1.2	0.21	1.52		01/27/22 21:21	75-35-4	
cis-1,2-Dichloroethene	**<0.30**	ug/m3	1.2	0.30	1.52		01/27/22 21:21	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/m3	1.2	0.26	1.52		01/27/22 21:21	156-60-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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ANALYTICAL RESULTS

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Sample: IA-10 (SUMMA) **Lab ID: 10594312010** Collected: 01/10/22 17:44 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
Tetrachloroethene	**<0.44**	ug/m3	1.0	0.44	1.52		01/27/22 21:21	127-18-4	
Trichloroethene	**<0.30**	ug/m3	0.83	0.30	1.52		01/27/22 21:21	79-01-6	
Vinyl chloride	**<0.13**	ug/m3	0.40	0.13	1.52		01/27/22 21:21	75-01-4	

Sample: IA-11 (SUMMA) **Lab ID: 10594312011** Collected: 01/10/22 17:48 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.21**	ug/m3	1.2	0.21	1.55		01/27/22 21:50	75-35-4	
cis-1,2-Dichloroethene	**<0.30**	ug/m3	1.2	0.30	1.55		01/27/22 21:50	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/m3	1.2	0.26	1.55		01/27/22 21:50	156-60-5	
Tetrachloroethene	**<0.45**	ug/m3	1.1	0.45	1.55		01/27/22 21:50	127-18-4	
Trichloroethene	**<0.30**	ug/m3	0.85	0.30	1.55		01/27/22 21:50	79-01-6	
Vinyl chloride	**<0.13**	ug/m3	0.40	0.13	1.55		01/27/22 21:50	75-01-4	

Sample: IA-12 (SUMMA) **Lab ID: 10594312012** Collected: 01/10/22 18:02 Received: 01/13/22 09:58 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<0.21**	ug/m3	1.2	0.21	1.52		01/27/22 22:19	75-35-4	
cis-1,2-Dichloroethene	**<0.30**	ug/m3	1.2	0.30	1.52		01/27/22 22:19	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/m3	1.2	0.26	1.52		01/27/22 22:19	156-60-5	
Tetrachloroethene	**<0.44**	ug/m3	1.0	0.44	1.52		01/27/22 22:19	127-18-4	
Trichloroethene	**<0.30**	ug/m3	0.83	0.30	1.52		01/27/22 22:19	79-01-6	
Vinyl chloride	**4.5**	ug/m3	0.40	0.13	1.52		01/27/22 22:19	75-01-4	

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QUALITY CONTROL DATA

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

QC Batch: 795839
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10594312001, 10594312002, 10594312003, 10594312004, 10594312005, 10594312006, 10594312007, 10594312008, 10594312009, 10594312010, 10594312011, 10594312012

METHOD BLANK: 4231522 Matrix: Air
Associated Lab Samples: 10594312001, 10594312002, 10594312003, 10594312004, 10594312005, 10594312006, 10594312007, 10594312008, 10594312009, 10594312010, 10594312011, 10594312012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/m3	<0.069	0.40	01/27/22 09:38	
cis-1,2-Dichloroethene	ug/m3	<0.098	0.40	01/27/22 09:38	
Tetrachloroethene	ug/m3	<0.15	0.34	01/27/22 09:38	
trans-1,2-Dichloroethene	ug/m3	<0.084	0.40	01/27/22 09:38	
Trichloroethene	ug/m3	<0.098	0.27	01/27/22 09:38	
Vinyl chloride	ug/m3	<0.043	0.13	01/27/22 09:38	

LABORATORY CONTROL SAMPLE: 4231523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/m3	43.5	36.8	84	70-130	
cis-1,2-Dichloroethene	ug/m3	43.4	40.5	93	70-136	
Tetrachloroethene	ug/m3	73.4	69.5	95	70-134	
trans-1,2-Dichloroethene	ug/m3	43.6	41.1	94	70-134	
Trichloroethene	ug/m3	58.4	51.7	88	70-134	
Vinyl chloride	ug/m3	28	24.1	86	70-132	

SAMPLE DUPLICATE: 4232372

Parameter	Units	10594312001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethene	ug/m3	<0.21	<0.21		25	
cis-1,2-Dichloroethene	ug/m3	<0.30	<0.30		25	
Tetrachloroethene	ug/m3	<0.44	<0.44		25	
trans-1,2-Dichloroethene	ug/m3	<0.26	<0.26		25	
Trichloroethene	ug/m3	<0.30	<0.30		25	
Vinyl chloride	ug/m3	<0.13	<0.13		25	

SAMPLE DUPLICATE: 4232373

Parameter	Units	10594312002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethene	ug/m3	<0.21	<0.21		25	
cis-1,2-Dichloroethene	ug/m3	<0.30	<0.30		25	
Tetrachloroethene	ug/m3	<0.45	<0.45		25	
trans-1,2-Dichloroethene	ug/m3	<0.26	<0.26		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

SAMPLE DUPLICATE: 4232373

Parameter	Units	10594312002 Result	Dup Result	RPD	Max RPD	Qualifiers
Trichloroethene	ug/m3	<0.30	<0.30		25	
Vinyl chloride	ug/m3	<0.13	<0.13		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
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QUALIFIERS

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 200032 Jagemann-Revised Report
Pace Project No.: 10594312

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10594312001	**IA-1 (SUMMA)**	TO-15	795839		
10594312002	**IA-2 (SUMMA)**	TO-15	795839		
10594312003	**IA-3 (SUMMA)**	TO-15	795839		
10594312004	**IA-4 (SUMMA)**	TO-15	795839		
10594312005	**IA-5 (SUMMA)**	TO-15	795839		
10594312006	**IA-6 (SUMMA)**	TO-15	795839		
10594312007	**IA-7 (SUMMA)**	TO-15	795839		
10594312008	**IA-8 (SUMMA)**	TO-15	795839		
10594312009	**IA-9 (SUMMA)**	TO-15	795839		
10594312010	**IA-10 (SUMMA)**	TO-15	795839		
10594312011	**IA-11 (SUMMA)**	TO-15	795839		
10594312012	**IA-12 (SUMMA)**	TO-15	795839		

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AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Page: 1 of 1

Section A Required Client Information:

Company: Enviroforensics
Address: N16W23390 Stone Ridge Dr Suite E
Waukesha, WI 53188
Email To: rhoverman@enviroforensics.com
Phone: 2612904001 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: rhoverman@enviroforensics.com
Copy To:
Purchase Order No.: 2021-0730
Project Name: Jagemann
Project Number: 200032

Section C Invoice Information:

Attention: accountspayable@enviroforensics.com
Company Name:
Address:
Pace Quote Reference: 00102925
Pace Project Manager/Sales Rep.
Pace Profile #: 44023

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other

Location of Sampling by State: WI

Reporting Units: ug/m³ X mg/m³ PPBV PPMV Other

Report Level: II. X III. IV. Other

Section D Required Client Information

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE - END/GRAB DATE	COLLECTED COMPOSITE - END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	IA-1 (SUMMA)	Air		1-10-22	933	1-10-22	1735	-30	-4	2103	0384									X	001
2	IA-2 (SUMMA)				924		1724	-28	-4	1122	1407										002
3	IA-3 (SUMMA)				941		1740	-30	-5	3606	0052										003
4	IA-4 (SUMMA)				850		1652	-30	-2	2312	1276										004
5	IA-5 (SUMMA)				837		1649	-30	-2	2664	1781										005
6	IA-6 (SUMMA)				841		1646	-30	-4	0978	0891										006
7	IA-7 (SUMMA)				958		1721	-30	-6	0537	1279										007
8	IA-8 (SUMMA)				938		1715	-30	-4	2116	0372										008
9	IA-9 (SUMMA)				855		1705	-30	-2	0012	0764										009
10	IA-10 (SUMMA)				958		1704	-30	-3	0795	0089										010
11	IA-11 (SUMMA)				1009		1748	-30	-6	1257	0514										011
12	IA-12 (SUMMA)				1008		1804	-30	-5	0090	1381										012

Comments: Short List: 1,1 DCE, Cis 1,2 DCE, Trans 1,2 DCE, TCE, VC

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
TCT	1-12-22	1630	FedEx	1-12-22	1630
			Matt Kg / Pace	1-13-22	9:58

SAMPLE CONDITIONS

	Temp in °C	Received on Ice Y/N	Custody Sealed Cooler Y/N	Samples Intact Y/N
-		Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rebecca Brown

SIGNATURE of SAMPLER: TCT

DATE Signed (MM / DD / YY): 1/11/22

WO#: 10594312

10594312

Technical Phone: 612.607.6386

Pace Analytical®	Document Name: Sample Condition Upon Receipt (SCUR) - Air	Document Revised: 13Oct2021 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0113 Rev.01	Pace Analytical Services - Minneapolis

Air Sample Condition Upon Receipt **Client Name:** EnviroForensics **Project #** **WO#: 10594312**

PM: CT1 **Due Date: 01/20/22**

CLIENT: EnviroForen

Courier: ☒ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 975384482910, 2921, 2932 ☐ See Exception

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No

Seals Intact? ☐ Yes ☐ No

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: _____

Date & Initials of Person Examining Contents: 1-13-22 mI

Comments:

Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used? **(Tedlar bags not acceptable container for TO-15 or APH)** -Pace Containers Used?	☒ Yes ☒ Yes	☐ No ☐ No		9.
Containers Intact? **(visual inspection/no leaks when pressurized)**	☒ Yes	☐ No		10.
Media: (Air Can) / Airbag				11. Individually Certified Cans? Y / N (list which samples)
Is sufficient information available to reconcile samples to the COC?	☒ Yes	☐ No		12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☒ Yes	☐ No		13.

Gauge #: ☐ 10AIR26 ☐ 10AIR34 ☒ 10AIR35 ☐ 10AIR17 ☐ 10AIR47 ☐ 10AIR48

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
IA-1	2103	384	-3.5	+5					
" -2	1122	1407	-4						
" -3	3606	52	-4.5						
" -4	2312	1276	-2.5						
" -5	2664	1781	-2						
" -6	978	891	-2.5						
" -7	537	1279	-4.5						
" -8	2116	372	-2.5						
" -9	12	764	-1						
" -10	795	89	-3.5						
" -11	1257	514	-4						
" -12	90	1381	-3.5						

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Carolynne Thast **Date:** 1/14/22

Note: *Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

February 03, 2022

Rob Hoverman
EnviroForensics
N16 W23390 Stone Ridge Drive
Suite G
Waukesha, WI 53188

RE: Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Dear Rob Hoverman:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout
carolynne.trout@pacelabs.com
1(612)607-6351
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
A2LA Certification #: 2926.01*
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10594913001	**SSV-1**	Air	01/14/22 10:29	01/19/22 12:10
10594913002	**SSV-2**	Air	01/14/22 10:12	01/19/22 12:10
10594913003	**SSV-3**	Air	01/14/22 11:14	01/19/22 12:10
10594913004	**SSV-4**	Air	01/14/22 10:57	01/19/22 12:10
10594913005	**SSV-5**	Air	01/14/22 11:24	01/19/22 12:10
10594913006	**SSV-12**	Air	01/14/22 13:10	01/19/22 12:10
10594913007	**SSV-11**	Air	01/14/22 13:37	01/19/22 12:10
10594913008	**SSV-10**	Air	01/14/22 13:46	01/19/22 12:10
10594913009	**Unused Canister #3767**	Air		01/19/22 12:10

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Minneapolis, MN 55414
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SAMPLE ANALYTE COUNT

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10594913001	**SSV-1**	TO-15	AFV	6	PASI-M
10594913002	**SSV-2**	TO-15	AFV	6	PASI-M
10594913003	**SSV-3**	TO-15	AFV	6	PASI-M
10594913004	**SSV-4**	TO-15	AFV	6	PASI-M
10594913005	**SSV-5**	TO-15	AFV	6	PASI-M
10594913006	**SSV-12**	TO-15	AFV	6	PASI-M
10594913007	**SSV-11**	TO-15	AFV	6	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Sample: SSV-1 **Lab ID: 10594913001** Collected: 01/14/22 10:29 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**8.3**	ug/m3	1.3	0.22	1.63		02/02/22 01:51	75-35-4	
cis-1,2-Dichloroethene	**111**	ug/m3	39.4	9.5	48.9		02/02/22 13:00	156-59-2	
trans-1,2-Dichloroethene	**29.2**	ug/m3	1.3	0.27	1.63		02/02/22 01:51	156-60-5	
Tetrachloroethene	**4.6**	ug/m3	1.1	0.48	1.63		02/02/22 01:51	127-18-4	
Trichloroethene	**212**	ug/m3	26.7	9.6	48.9		02/02/22 13:00	79-01-6	
Vinyl chloride	**118**	ug/m3	0.42	0.14	1.63		02/02/22 01:51	75-01-4	

Sample: SSV-2 **Lab ID: 10594913002** Collected: 01/14/22 10:12 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**11.9**	ug/m3	1.5	0.26	1.87		02/02/22 02:27	75-35-4	
cis-1,2-Dichloroethene	**217**	ug/m3	48.8	11.8	60.6		02/02/22 13:32	156-59-2	
trans-1,2-Dichloroethene	**25.9**	ug/m3	1.5	0.31	1.87		02/02/22 02:27	156-60-5	
Tetrachloroethene	**4.5**	ug/m3	1.3	0.55	1.87		02/02/22 02:27	127-18-4	
Trichloroethene	**635**	ug/m3	33.1	11.9	60.6		02/02/22 13:32	79-01-6	
Vinyl chloride	**2.0**	ug/m3	0.49	0.16	1.87		02/02/22 02:27	75-01-4	

Sample: SSV-3 **Lab ID: 10594913003** Collected: 01/14/22 11:14 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**<991**	ug/m3	5790	991	7181		02/02/22 04:37	75-35-4	
cis-1,2-Dichloroethene	**95000**	ug/m3	5790	1400	7181		02/02/22 04:37	156-59-2	
trans-1,2-Dichloroethene	**1290J**	ug/m3	5790	1210	7181		02/02/22 04:37	156-60-5	
Tetrachloroethene	**<2100**	ug/m3	4950	2100	7181		02/02/22 04:37	127-18-4	
Trichloroethene	**1520000**	ug/m3	3920	1410	7181		02/02/22 04:37	79-01-6	E
Vinyl chloride	**<623**	ug/m3	1870	623	7181		02/02/22 04:37	75-01-4	

Sample: SSV-4 **Lab ID: 10594913004** Collected: 01/14/22 10:57 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**18300**	ug/m3	5790	991	7181		02/02/22 05:10	75-35-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Sample: SSV-4 **Lab ID: 10594913004** Collected: 01/14/22 10:57 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
cis-1,2-Dichloroethene	**1370000**	ug/m3	5790	1400	7181		02/02/22 05:10	156-59-2	E
trans-1,2-Dichloroethene	**23500**	ug/m3	5790	1210	7181		02/02/22 05:10	156-60-5	
Tetrachloroethene	**<2100**	ug/m3	4950	2100	7181		02/02/22 05:10	127-18-4	
Trichloroethene	**5150000**	ug/m3	3920	1410	7181		02/02/22 05:10	79-01-6	E
Vinyl chloride	**8760**	ug/m3	1870	623	7181		02/02/22 05:10	75-01-4	

Sample: SSV-5 **Lab ID: 10594913005** Collected: 01/14/22 11:24 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**586J**	ug/m3	2890	495	3590		02/02/22 04:05	75-35-4	
cis-1,2-Dichloroethene	**29900**	ug/m3	2890	700	3590		02/02/22 04:05	156-59-2	
trans-1,2-Dichloroethene	**<603**	ug/m3	2890	603	3590		02/02/22 04:05	156-60-5	
Tetrachloroethene	**<1050**	ug/m3	2470	1050	3590		02/02/22 04:05	127-18-4	
Trichloroethene	**509000**	ug/m3	1960	704	3590		02/02/22 04:05	79-01-6	
Vinyl chloride	**2380**	ug/m3	934	312	3590		02/02/22 04:05	75-01-4	

Sample: SSV-12 **Lab ID: 10594913006** Collected: 01/14/22 13:10 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**21.7J**	ug/m3	45.2	7.7	56.1		02/02/22 03:32	75-35-4	
cis-1,2-Dichloroethene	**5160**	ug/m3	45.2	10.9	56.1		02/02/22 03:32	156-59-2	
trans-1,2-Dichloroethene	**47.5**	ug/m3	45.2	9.4	56.1		02/02/22 03:32	156-60-5	
Tetrachloroethene	**74.6**	ug/m3	38.7	16.4	56.1		02/02/22 03:32	127-18-4	
Trichloroethene	**91200**	ug/m3	1960	704	3590		02/02/22 15:59	79-01-6	
Vinyl chloride	**9.6J**	ug/m3	14.6	4.9	56.1		02/02/22 03:32	75-01-4	

Sample: SSV-11 **Lab ID: 10594913007** Collected: 01/14/22 13:37 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**60.3**	ug/m3	45.2	7.7	56.1		02/02/22 03:00	75-35-4	
cis-1,2-Dichloroethene	**1960**	ug/m3	45.2	10.9	56.1		02/02/22 03:00	156-59-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Sample: SSV-11 **Lab ID: 10594913007** Collected: 01/14/22 13:37 Received: 01/19/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
trans-1,2-Dichloroethene	**27.2J**	ug/m3	45.2	9.4	56.1		02/02/22 03:00	156-60-5	
Tetrachloroethene	**30.7J**	ug/m3	38.7	16.4	56.1		02/02/22 03:00	127-18-4	
Trichloroethene	**65100**	ug/m3	980	352	1795		02/02/22 14:04	79-01-6	
Vinyl chloride	**44.9**	ug/m3	14.6	4.9	56.1		02/02/22 03:00	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

QC Batch: 796566
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10594913001, 10594913002, 10594913003, 10594913004, 10594913005, 10594913006, 10594913007

METHOD BLANK: 4234374 Matrix: Air
Associated Lab Samples: 10594913001, 10594913002, 10594913003, 10594913004, 10594913005, 10594913006, 10594913007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/m3	<0.069	0.40	02/01/22 15:21	
cis-1,2-Dichloroethene	ug/m3	<0.098	0.40	02/01/22 15:21	
Tetrachloroethene	ug/m3	0.18J	0.34	02/01/22 15:21	
trans-1,2-Dichloroethene	ug/m3	<0.084	0.40	02/01/22 15:21	
Trichloroethene	ug/m3	<0.098	0.27	02/01/22 15:21	
Vinyl chloride	ug/m3	<0.043	0.13	02/01/22 15:21	

LABORATORY CONTROL SAMPLE: 4234375

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/m3	41.5	38.1	92	70-130	
cis-1,2-Dichloroethene	ug/m3	41	41.7	102	70-136	
Tetrachloroethene	ug/m3	69.9	68.0	97	70-134	
trans-1,2-Dichloroethene	ug/m3	40.8	39.3	96	70-134	
Trichloroethene	ug/m3	55.7	56.5	101	70-134	
Vinyl chloride	ug/m3	26.6	23.6	89	70-132	

SAMPLE DUPLICATE: 4235160

Parameter	Units	10594901005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethene	ug/m3	<1.2	<0.20		25	
cis-1,2-Dichloroethene	ug/m3	<1.2	<0.28		25	
Tetrachloroethene	ug/m3	<0.99	<0.42		25	
trans-1,2-Dichloroethene	ug/m3	<1.2	<0.24		25	
Trichloroethene	ug/m3	<0.79	<0.28		25	
Vinyl chloride	ug/m3	<0.37	<0.12		25	

SAMPLE DUPLICATE: 4235161

Parameter	Units	10594903005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethene	ug/m3	<1.1	<0.19		25	
cis-1,2-Dichloroethene	ug/m3	<1.1	<0.27		25	
Tetrachloroethene	ug/m3	<0.96	<0.41		25	
trans-1,2-Dichloroethene	ug/m3	<1.1	<0.23		25	
Trichloroethene	ug/m3	<0.76	<0.27		25	
Vinyl chloride	ug/m3	<0.36	<0.12		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 200032 Jagemann Plating
Pace Project No.: 10594913

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10594913001	**SSV-1**	TO-15	796566		
10594913002	**SSV-2**	TO-15	796566		
10594913003	**SSV-3**	TO-15	796566		
10594913004	**SSV-4**	TO-15	796566		
10594913005	**SSV-5**	TO-15	796566		
10594913006	**SSV-12**	TO-15	796566		
10594913007	**SSV-11**	TO-15	796566		

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

55639

Page: 1 of 1

Section A Required Client Information:

Company: EnviroForensics
Address: N16W23390 Stone Ridge Waukesha WI 53188
Email To: chowerman@enviroforensics
Phone: 262 290 4001 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To:
Copy To:
Purchase Order No.: 2021-0730
Project Name: Jagemann Plating
Project Number: 200032

Section C Invoice Information:

Attention: accountspayable@enviroforensics.com
Company Name:
Address:
Pace Quote Reference: 00102925
Pace Project Manager/Sales Rep.
Pace Profile #: 44023

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other

Location of Sampling by State: WI

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV ___ PPMV ___ Other ___

Report Level: II. X III. ___ IV. ___ Other ___

'Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE - END/GRAB DATE	COLLECTED COMPOSITE - END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	SSV-1	1LC		1.14.22	1023	1.14.22	1029	-28	0	3932	2866							X			001
2	SSV-2				1006		1012	-27	-2	0811	2736										002
3	SSV-3				1108		1114	-28.5	-5	3546	1901										003
4	SSV-4				1050		1057	-30	-5	3799	2894										004
5	SSV-5				1116		1124	-30	-3	2535	1611										005
6	SSV-12				1305		1310	-29	-3	2622	1819										006
7	SSV-11				1331		1337	-30	-4	3528	3002										007
8	SSV-10				1341		1346	-25	-3	3776	2685										008
9																					
10																					
11																					
12																					

Comments :

WO# : 10594913

10594913

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
RK	1-17-22	0700	FEDEX		
			PACE	1.19.22	1210

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY)

2

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

Pace Analytical®	Document Name: Sample Condition Upon Receipt (SCUR) - Air	Document Revised: 13Oct2021
	Document No.: ENV-FRM-MIN4-0113 Rev.01	Page 1 of 1

Air Sample Condition Upon Receipt

Client Name: ENVIRO FORENSICS

Project **WO#: 10594913**

PM: CT1 **Due Date:** 01/26/22

CLIENT: EnviroForen

Courier: ☒ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 9753 8448 2943, 4980 ☐ See Exception

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other:

Date & Initials of Person Examining Contents: 1.19.22 CMY

				Comments:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used? **(Tedlar bags not acceptable container for TO-15 or APH)** -Pace Containers Used?	☒ Yes ☒ Yes	☐ No ☐ No		9.
Containers Intact? **(visual inspection/no leaks when pressurized)**	☒ Yes	☐ No		10. SSV-10 CAME BACK BROKEN ON IT'S NECK.
Media: (Air Can) | Airbag				11. Individually Certified Cans? Y | (N) (list which samples)
Is sufficient information available to reconcile samples to the COC?	☒ Yes	☐ No		12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☒ Yes	☐ No		13.

Gauge #: ☐ 10AIR26 ☐ 10AIR34 ☒ 10AIR35 ☐ 10AIR17 ☐ 10AIR47 ☐ 10AIR48

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
SSV-1	3932	2866	-10.5	-10					
SSV-2	0811	2730	-5	"					
SSV-3	3546	1901	-3	"					
SSV-4	3799	2894	-3	"					
SSV-5	2535	1611	-3	"					
SSV-12	2622	1819	-3	"					
SSV-11	3528	3002	-3	"					
SSV-10	3776	2685	0	—					
UNUSED	3767	0973	0	—					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Carolynne Thart **Date:** 1/20/22

Note: *Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

February 07, 2022

Rob Hoverman
EnviroForensics
N16 W23390 Stone Ridge Drive
Suite G
Waukesha, WI 53188

RE: Project: 200032 Jagemann Plating
Pace Project No.: 10595916

Dear Rob Hoverman:

Enclosed are the analytical results for sample(s) received by the laboratory on January 28, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout
carolynne.trout@pacelabs.com
1(612)607-6351
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 200032 Jagemann Plating
Pace Project No.: 10595916

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
A2LA Certification #: 2926.01*
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 200032 Jagemann Plating
Pace Project No.: 10595916

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10595916001	**EP-1**	Air	01/26/22 10:58	01/28/22 12:10

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 200032 Jagemann Plating
Pace Project No.: 10595916

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10595916001	**EP-1**	TO-15	AFV	5	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 200032 Jagemann Plating
Pace Project No.: 10595916

Sample: EP-1 **Lab ID: 10595916001** Collected: 01/26/22 10:58 Received: 01/28/22 12:10 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
1,1-Dichloroethene	**0.27J**	ug/m3	1.6	0.27	1.94		02/04/22 05:24	75-35-4	
cis-1,2-Dichloroethene	**19.3**	ug/m3	1.6	0.38	1.94		02/04/22 05:24	156-59-2	
trans-1,2-Dichloroethene	**1.1J**	ug/m3	1.6	0.33	1.94		02/04/22 05:24	156-60-5	
Tetrachloroethene	**4.9**	ug/m3	1.3	0.57	1.94		02/04/22 05:24	127-18-4	
Trichloroethene	**36.9**	ug/m3	1.1	0.38	1.94		02/04/22 05:24	79-01-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 200032 Jagemann Plating
Pace Project No.: 10595916

QC Batch: 797100
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10595916001

METHOD BLANK: 4236356 Matrix: Air
Associated Lab Samples: 10595916001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/m3	<0.14	0.81	02/03/22 16:31	
cis-1,2-Dichloroethene	ug/m3	<0.20	0.81	02/03/22 16:31	
Tetrachloroethene	ug/m3	<0.29	0.69	02/03/22 16:31	
trans-1,2-Dichloroethene	ug/m3	<0.17	0.81	02/03/22 16:31	
Trichloroethene	ug/m3	<0.20	0.55	02/03/22 16:31	

LABORATORY CONTROL SAMPLE: 4236357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/m3	41.5	38.2	92	70-130	
cis-1,2-Dichloroethene	ug/m3	41	43.2	105	70-136	
Tetrachloroethene	ug/m3	69.9	68.9	99	70-134	
trans-1,2-Dichloroethene	ug/m3	40.8	40.3	99	70-134	
Trichloroethene	ug/m3	55.7	57.7	104	70-134	

SAMPLE DUPLICATE: 4237127

Parameter	Units	10594898001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethene	ug/m3	ND	<0.19		25	
cis-1,2-Dichloroethene	ug/m3	ND	<0.27		25	
Tetrachloroethene	ug/m3	ND	<0.41		25	
trans-1,2-Dichloroethene	ug/m3	ND	<0.23		25	
Trichloroethene	ug/m3	ND	<0.27		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 200032 Jagemann Plating
Pace Project No.: 10595916

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 200032 Jagemann Plating
Pace Project No.: 10595916

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10595916001	**EP-1**	TO-15	797100		

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY /

The Chain-of-Custody is a LEGAL DOCUMENT. All relevar

WO# : 10595916

10595916

55640

Page: 1 of 1

Section A
Required Client Information:

Company: EnviroForensics
Address: N16W23390 Stone Ridge Dr
Waukesha, WI 53188
Email To: rhoermann@enviroforensics.com
Phone: Fax:
Requested Due Date/TAT:

Section B
Required Project Information:

Report To: rhoermann@enviroforensics.com
Copy To:
Purchase Order No.:
Project Name: JagemannPlating
Project Number: 200372

Section C
Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #: 44023

Program
☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act
☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other

Location of Sampling by State: WI

Reporting Units
ug/m³ X mg/m³ ___
PPBV ___ PPMV ___
Other ___

Report Level II.___ III.___ IV.___ Other___

'Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE - END/GRAB DATE	COMPOSITE - END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	EP-1	1LC		1-26-22	1053	1-26-22	1058	-28	-3	30652	32 12							X			001
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :
Short List:
1,1-DCE, Cis-1,2 DCE,
Trans-1.2 DCE, TCE, VC

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
RLR	1-27-22	1200	FedEx	1-27-22	1700
			Pace	1/28/22	12:10

SAMPLE CONDITIONS

	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact	

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Rebecca Brown
SIGNATURE of SAMPLER: RLR
DATE Signed (MM / DD / YY): 1-27-22

ORIGINAL

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

Pace Analytical®	Document Name: Sample Condition Upon Receipt (SCUR) - Air	Document Revised: 13Oct2021 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0113 Rev.01	Pace Analytical Services - Minneapolis

Air Sample Condition Upon Receipt

Client Name: EnviroForensics

Project #: WO#: 10595916

PM: CT1 Due Date: 02/04/22

CLIENT: EnviroForen

Courier: [X] FedEx [ ] UPS [ ] USPS [ ] Client [ ] Pace [ ] SpeeDee [ ] Commercial

Tracking Number: 9753 8448 7647 [ ] See Exception

Custody Seal on Cooler/Box Present? [ ] Yes [X] No

Seals Intact? [ ] Yes [X] No

Packing Material: [ ] Bubble Wrap [ ] Bubble Bags [X] Foam [ ] None [ ] Tin Can [ ] Other:

Date & Initials of Person Examining Contents: RL 1/28/22

Comments:

Chain of Custody Present?	[X] Yes	[ ] No		1.
Chain of Custody Filled Out?	[X] Yes	[ ] No		2.
Chain of Custody Relinquished?	[X] Yes	[ ] No		3.
Sampler Name and/or Signature on COC?	[X] Yes	[ ] No	[ ] N/A	4.
Samples Arrived within Hold Time?	[X] Yes	[ ] No		5.
Short Hold Time Analysis (<72 hr)?	[ ] Yes	[X] No		6.
Rush Turn Around Time Requested?	[ ] Yes	[X] No		7.
Sufficient Volume?	[X] Yes	[ ] No		8.
Correct Containers Used? **(Tedlar bags not acceptable container for TO-15 or APH)** -Pace Containers Used?	[X] Yes [X] Yes	[ ] No [ ] No		9.
Containers Intact? **(visual inspection/no leaks when pressurized)**	[X] Yes	[ ] No		10.
Media: (Air Can) Airbag				11. Individually Certified Cans? Y (N) (list which samples)
Is sufficient information available to reconcile samples to the COC?	[X] Yes	[ ] No		12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	[X] Yes	[ ] No		13.

Gauge #: [ ] 10AIR26 [ ] 10AIR34 [ ] 10AIR35 [X] 10AIR17 [ ] 10AIR47 [ ] 10AIR48

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
EP-1	3065	3212	-4	410					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** [ ] Yes [ ] No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Carolynne Trout **Date:** 2/1/22

Note: *Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Beacon Environmental
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 211108R01

Laboratory Work Order: 0006132R

Project Description:
Jageman Plating Co.
Manitowoc, WI

Client PO No.: 2021-0729

Prepared for:
Rob Hoverman
EnviroForensics
N16W23390 Stone Ridge Dr, Suite G
Waukesha, WI 53188

Ryan W. Schneider
Senior Project Manager

February 10, 2022
Report amended to add sample(s).

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Quality Manager

Table of Contents

Table of Contents (continued)

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Sample Summary

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0006132-01 Sampler Type:	IA-1 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-02 Sampler Type:	IA-2 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-03 Sampler Type:	IA-3 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-04 Sampler Type:	IA-4 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-05 Sampler Type:	IA-5 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-06 Sampler Type:	IA-6 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-07 Sampler Type:	IA-7 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-08 Sampler Type:	IA-8 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-09 Sampler Type:	IA-9 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-10 Sampler Type:	IA-10 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-11 Sampler Type:	IA-11 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-12 Sampler Type:	IA-12 (Passive 8hr) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-13 Sampler Type:	IA-1 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-14 Sampler Type:	IA-2 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-15 Sampler Type:	IA-3 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-16 Sampler Type:	IA-4 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-17 Sampler Type:	IA-5 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-18 Sampler Type:	IA-6 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-19 Sampler Type:	IA-7 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air
0006132-20 Sampler Type:	IA-8 (Passive 5 day) Sorbent Tube	01/19/2022	TO-17 (Passive)	Indoor Air

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0006132-21	IA-9 (Passive 5 day)	01/19/2022	TO-17 (Passive)	Indoor Air
Sampler Type:	Sorbent Tube			
0006132-22	IA-10 (Passive 5 day)	01/19/2022	TO-17 (Passive)	Indoor Air
Sampler Type:	Sorbent Tube			
0006132-23	IA-11 (Passive 5 day)	01/19/2022	TO-17 (Passive)	Indoor Air
Sampler Type:	Sorbent Tube			
0006132-24	IA-12 (Passive 5 day)	01/19/2022	TO-17 (Passive)	Indoor Air
Sampler Type:	Sorbent Tube			

Project Completeness

Samples Received: 24
Samples Analyzed: 24

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Case Narrative

Beacon Environmental provided thermally conditioned ChloroSorbers for sampling, with analyses following U.S. EPA Method TO-17, with analytical results reported in µg/m3. Beacon calculated concentration results using the exposure period, target analyte mass, and the following procedures detailed in ISO 16017-2, *Indoor, ambient and workplace air-Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography-Part 2: Diffusive sampling.*

Beacon reports results and reporting limits to three significant digits.

Reporting Limits (RLs) for EPA Method TO-17

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Beacon performed dilution analysis when results exceeded the upper calibration limit, bringing all reported results within the calibration range. The project method quantitation limit (MQL) is the limit of detection (LOD) as noted in the data tables.

Calibration Verification

All continuing calibration verification (CCV) values are within ±30% of the true values as defined by the initial calibration and met the requirements specified in BEACON's Quality Manual.

Internal Standards and Surrogates

Internal standards and surrogates are spiked on all blanks (ICB, BLK), field samples and laboratory control samples (ICV/CALV, BS, ICV and CCV). Acceptance criteria for internal standards are 60 to 140 percent and surrogate recoveries are 70 to 130 percent; all internal standards and surrogates are within the acceptance criteria unless noted in the **Case Narrative**.

Blank Contamination

No targeted compounds above the limit of detection (LOD) for each compound were observed in the Laboratory Method Blanks unless noted in the **Case Narrative**.

Laboratory Control Samples

Acceptance criteria for surrogate and analytes recoveries are 70 to 130 percent; all recoveries are within the acceptance criteria unless noted in the **Case Narrative**.

Discussion

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

End of Case Narrative

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Analytical Results

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Summary of Compound Detections- Concentration

Lab Sample ID: 0006132-14 — **IA-2 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Tetrachloroethene	127-18-4	**1.53**	J	8.195	1.60	0.802	A22012018.D

Lab Sample ID: 0006132-15 — **IA-3 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Tetrachloroethene	127-18-4	**2.94**		8.195	1.61	0.804	A22012019.D

Lab Sample ID: 0006132-16 — **IA-4 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Trichloroethene	79-01-6	**0.714**	J	5.973	1.35	0.676	Ab22012005.D

Lab Sample ID: 0006132-19 — **IA-7 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Tetrachloroethene	127-18-4	**0.810**	J	8.195	1.61	0.803	Ab22012008.D

Lab Sample ID: 0006132-20 — **IA-8 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Trichloroethene	79-01-6	**1.39**		5.970	1.36	0.679	Ab22012009.D
Tetrachloroethene	127-18-4	**1.71**		8.198	1.61	0.803	Ab22012009.D

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Summary of Compound Detections- Concentration

Lab Sample ID: 0006132-22 — **IA-10 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Tetrachloroethene	127-18-4	**4.31**		8.195	1.61	0.804	Ab22012011.D

Lab Sample ID: 0006132-23 — **IA-11 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Tetrachloroethene	127-18-4	**2.32**		8.195	1.61	0.805	Ab22012012.D

Lab Sample ID: 0006132-24 — **IA-12 (Passive 5 day)** — Indoor Air — Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Tetrachloroethene	127-18-4	**0.841**	J	8.195	1.61	0.806	Ab22012013.D

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Data Summary Table- Concentration

Compound	Frequency	LOD (µg/m³)	Max Value (µg/m³)
Trichloroethene	2	0.676	1.39
Tetrachloroethene	7	0.802	4.31

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Detailed Analytical Results

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-01

IA-1 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.42	U	9.42	18.8	01/20/2022 12:00	A22012005.D
1,1-Dichloroethene	75-35-4	<11.7	U	11.7	23.5	01/20/2022 12:00	A22012005.D
trans-1,2-Dichloroethene	156-60-5	<7.54	U	7.54	15.1	01/20/2022 12:00	A22012005.D
cis-1,2-Dichloroethene	156-59-2	<7.54	U	7.54	15.1	01/20/2022 12:00	A22012005.D
Trichloroethene	79-01-6	<8.12	U	8.12	16.2	01/20/2022 12:00	A22012005.D
Tetrachloroethene	127-18-4	<9.59	U	9.59	19.2	01/20/2022 12:00	A22012005.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*104%*	*70-130*		*01/20/2022 12:00*	*A22012005.D*
Surrogate: Toluene-d8	2037-26-5	*94.2%*	*70-130*		*01/20/2022 12:00*	*A22012005.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-02

IA-2 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.25	U	9.25	18.5	01/20/2022 12:28	A22012006.D
1,1-Dichloroethene	75-35-4	<11.5	U	11.5	23.0	01/20/2022 12:28	A22012006.D
trans-1,2-Dichloroethene	156-60-5	<7.40	U	7.40	14.8	01/20/2022 12:28	A22012006.D
cis-1,2-Dichloroethene	156-59-2	<7.40	U	7.40	14.8	01/20/2022 12:28	A22012006.D
Trichloroethene	79-01-6	<7.97	U	7.97	15.9	01/20/2022 12:28	A22012006.D
Tetrachloroethene	127-18-4	<9.42	U	9.42	18.8	01/20/2022 12:28	A22012006.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*103%*	*70-130*		*01/20/2022 12:28*	*A22012006.D*
Surrogate: Toluene-d8	2037-26-5	*94.2%*	*70-130*		*01/20/2022 12:28*	*A22012006.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-03

IA-3 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.42	U	9.42	18.8	01/20/2022 12:55	A22012007.D
1,1-Dichloroethene	75-35-4	<11.7	U	11.7	23.5	01/20/2022 12:55	A22012007.D
trans-1,2-Dichloroethene	156-60-5	<7.54	U	7.54	15.1	01/20/2022 12:55	A22012007.D
cis-1,2-Dichloroethene	156-59-2	<7.54	U	7.54	15.1	01/20/2022 12:55	A22012007.D
Trichloroethene	79-01-6	<8.12	U	8.12	16.2	01/20/2022 12:55	A22012007.D
Tetrachloroethene	127-18-4	<9.59	U	9.59	19.2	01/20/2022 12:55	A22012007.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*100%*	*70-130*		*01/20/2022 12:55*	*A22012007.D*
Surrogate: Toluene-d8	2037-26-5	*94.3%*	*70-130*		*01/20/2022 12:55*	*A22012007.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-04

IA-4 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.29	U	9.29	18.6	01/20/2022 13:23	A22012008.D
1,1-Dichloroethene	75-35-4	<11.6	U	11.6	23.1	01/20/2022 13:23	A22012008.D
trans-1,2-Dichloroethene	156-60-5	<7.43	U	7.43	14.9	01/20/2022 13:23	A22012008.D
cis-1,2-Dichloroethene	156-59-2	<7.43	U	7.43	14.9	01/20/2022 13:23	A22012008.D
Trichloroethene	79-01-6	<8.00	U	8.00	16.0	01/20/2022 13:23	A22012008.D
Tetrachloroethene	127-18-4	<9.46	U	9.46	18.9	01/20/2022 13:23	A22012008.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*99.3%*	*70-130*		*01/20/2022 13:23*	*A22012008.D*
Surrogate: Toluene-d8	2037-26-5	*96.2%*	*70-130*		*01/20/2022 13:23*	*A22012008.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-05

IA-5 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.38	U	9.38	18.8	01/20/2022 13:50	A22012009.D
1,1-Dichloroethene	75-35-4	<11.7	U	11.7	23.4	01/20/2022 13:50	A22012009.D
trans-1,2-Dichloroethene	156-60-5	<7.51	U	7.51	15.0	01/20/2022 13:50	A22012009.D
cis-1,2-Dichloroethene	156-59-2	<7.51	U	7.51	15.0	01/20/2022 13:50	A22012009.D
Trichloroethene	79-01-6	<8.08	U	8.08	16.2	01/20/2022 13:50	A22012009.D
Tetrachloroethene	127-18-4	<9.55	U	9.55	19.1	01/20/2022 13:50	A22012009.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*98.6%*	*70-130*		*01/20/2022 13:50*	*A22012009.D*
Surrogate: Toluene-d8	2037-26-5	*96.4%*	*70-130*		*01/20/2022 13:50*	*A22012009.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-06

IA-6 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.31	U	9.31	18.6	01/20/2022 14:18	A22012010.D
1,1-Dichloroethene	75-35-4	<11.6	U	11.6	23.2	01/20/2022 14:18	A22012010.D
trans-1,2-Dichloroethene	156-60-5	<7.45	U	7.45	14.9	01/20/2022 14:18	A22012010.D
cis-1,2-Dichloroethene	156-59-2	<7.45	U	7.45	14.9	01/20/2022 14:18	A22012010.D
Trichloroethene	79-01-6	<8.02	U	8.02	16.0	01/20/2022 14:18	A22012010.D
Tetrachloroethene	127-18-4	<9.48	U	9.48	19.0	01/20/2022 14:18	A22012010.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*98.7%*	*70-130*		*01/20/2022 14:18*	*A22012010.D*
Surrogate: Toluene-d8	2037-26-5	*95.7%*	*70-130*		*01/20/2022 14:18*	*A22012010.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-07

IA-7 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.98	U	9.98	20.0	01/20/2022 14:46	A22012011.D
1,1-Dichloroethene	75-35-4	<12.4	U	12.4	24.8	01/20/2022 14:46	A22012011.D
trans-1,2-Dichloroethene	156-60-5	<7.99	U	7.99	16.0	01/20/2022 14:46	A22012011.D
cis-1,2-Dichloroethene	156-59-2	<7.99	U	7.99	16.0	01/20/2022 14:46	A22012011.D
Trichloroethene	79-01-6	<8.60	U	8.60	17.2	01/20/2022 14:46	A22012011.D
Tetrachloroethene	127-18-4	<10.2	U	10.2	20.3	01/20/2022 14:46	A22012011.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*104%*	*70-130*		*01/20/2022 14:46*	*A22012011.D*
Surrogate: Toluene-d8	2037-26-5	*92.5%*	*70-130*		*01/20/2022 14:46*	*A22012011.D*

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CERTIFICATE OF ANALYSIS

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N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-08

IA-8 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.85	U	9.85	19.7	01/20/2022 15:13	A22012012.D
1,1-Dichloroethene	75-35-4	<12.3	U	12.3	24.5	01/20/2022 15:13	A22012012.D
trans-1,2-Dichloroethene	156-60-5	<7.88	U	7.88	15.8	01/20/2022 15:13	A22012012.D
cis-1,2-Dichloroethene	156-59-2	<7.88	U	7.88	15.8	01/20/2022 15:13	A22012012.D
Trichloroethene	79-01-6	<8.49	U	8.49	17.0	01/20/2022 15:13	A22012012.D
Tetrachloroethene	127-18-4	<10.0	U	10.0	20.1	01/20/2022 15:13	A22012012.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*99.7%*	*70-130*		*01/20/2022 15:13*	*A22012012.D*
Surrogate: Toluene-d8	2037-26-5	*95.1%*	*70-130*		*01/20/2022 15:13*	*A22012012.D*

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CERTIFICATE OF ANALYSIS

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N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-09

IA-9 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.31	U	9.31	18.6	01/20/2022 15:41	A22012013.D
1,1-Dichloroethene	75-35-4	<11.6	U	11.6	23.2	01/20/2022 15:41	A22012013.D
trans-1,2-Dichloroethene	156-60-5	<7.45	U	7.45	14.9	01/20/2022 15:41	A22012013.D
cis-1,2-Dichloroethene	156-59-2	<7.45	U	7.45	14.9	01/20/2022 15:41	A22012013.D
Trichloroethene	79-01-6	<8.02	U	8.02	16.0	01/20/2022 15:41	A22012013.D
Tetrachloroethene	127-18-4	<9.48	U	9.48	19.0	01/20/2022 15:41	A22012013.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*101%*	*70-130*		*01/20/2022 15:41*	*A22012013.D*
Surrogate: Toluene-d8	2037-26-5	*96.9%*	*70-130*		*01/20/2022 15:41*	*A22012013.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-10

IA-10 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.62	U	9.62	19.2	01/20/2022 16:08	A22012014.D
1,1-Dichloroethene	75-35-4	<12.0	U	12.0	24.0	01/20/2022 16:08	A22012014.D
trans-1,2-Dichloroethene	156-60-5	<7.70	U	7.70	15.4	01/20/2022 16:08	A22012014.D
cis-1,2-Dichloroethene	156-59-2	<7.70	U	7.70	15.4	01/20/2022 16:08	A22012014.D
Trichloroethene	79-01-6	<8.29	U	8.29	16.6	01/20/2022 16:08	A22012014.D
Tetrachloroethene	127-18-4	<9.80	U	9.80	19.6	01/20/2022 16:08	A22012014.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*101%*	*70-130*		*01/20/2022 16:08*	*A22012014.D*
Surrogate: Toluene-d8	2037-26-5	*94.9%*	*70-130*		*01/20/2022 16:08*	*A22012014.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-11

IA-11 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.66	U	9.66	19.3	01/20/2022 16:37	A22012015.D
1,1-Dichloroethene	75-35-4	<12.0	U	12.0	24.1	01/20/2022 16:37	A22012015.D
trans-1,2-Dichloroethene	156-60-5	<7.73	U	7.73	15.5	01/20/2022 16:37	A22012015.D
cis-1,2-Dichloroethene	156-59-2	<7.73	U	7.73	15.5	01/20/2022 16:37	A22012015.D
Trichloroethene	79-01-6	<8.33	U	8.33	16.7	01/20/2022 16:37	A22012015.D
Tetrachloroethene	127-18-4	<9.84	U	9.84	19.7	01/20/2022 16:37	A22012015.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*104%*	*70-130*		*01/20/2022 16:37*	*A22012015.D*
Surrogate: Toluene-d8	2037-26-5	*96.4%*	*70-130*		*01/20/2022 16:37*	*A22012015.D*

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-12

IA-12 (Passive 8hr)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<9.54	U	9.54	19.1	01/20/2022 17:05	A22012016.D
1,1-Dichloroethene	75-35-4	<11.9	U	11.9	23.7	01/20/2022 17:05	A22012016.D
trans-1,2-Dichloroethene	156-60-5	<7.63	U	7.63	15.3	01/20/2022 17:05	A22012016.D
cis-1,2-Dichloroethene	156-59-2	<7.63	U	7.63	15.3	01/20/2022 17:05	A22012016.D
Trichloroethene	79-01-6	<8.22	U	8.22	16.4	01/20/2022 17:05	A22012016.D
Tetrachloroethene	127-18-4	<9.72	U	9.72	19.4	01/20/2022 17:05	A22012016.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*102%*	*70-130*		*01/20/2022 17:05*	*A22012016.D*
Surrogate: Toluene-d8	2037-26-5	*95.4%*	*70-130*		*01/20/2022 17:05*	*A22012016.D*

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-13

IA-1 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.789	U	0.789	1.58	01/20/2022 17:32	A22012017.D
1,1-Dichloroethene	75-35-4	<0.982	U	0.982	1.96	01/20/2022 17:32	A22012017.D
trans-1,2-Dichloroethene	156-60-5	<0.631	U	0.631	1.26	01/20/2022 17:32	A22012017.D
cis-1,2-Dichloroethene	156-59-2	<0.631	U	0.631	1.26	01/20/2022 17:32	A22012017.D
Trichloroethene	79-01-6	<0.680	U	0.680	1.36	01/20/2022 17:32	A22012017.D
Tetrachloroethene	127-18-4	<0.803	U	0.803	1.61	01/20/2022 17:32	A22012017.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*102%*	*70-130*		*01/20/2022 17:32*	*A22012017.D*
Surrogate: Toluene-d8	2037-26-5	*90.0%*	*70-130*		*01/20/2022 17:32*	*A22012017.D*

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-14

IA-2 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.788	U	0.788	1.58	01/20/2022 18:00	A22012018.D
1,1-Dichloroethene	75-35-4	<0.981	U	0.981	1.96	01/20/2022 18:00	A22012018.D
trans-1,2-Dichloroethene	156-60-5	<0.630	U	0.630	1.26	01/20/2022 18:00	A22012018.D
cis-1,2-Dichloroethene	156-59-2	<0.630	U	0.630	1.26	01/20/2022 18:00	A22012018.D
Trichloroethene	79-01-6	<0.679	U	0.679	1.36	01/20/2022 18:00	A22012018.D
Tetrachloroethene	127-18-4	**1.53**	J	0.802	1.60	01/20/2022 18:00	A22012018.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*103%*	*70-130*		*01/20/2022 18:00*	*A22012018.D*
Surrogate: Toluene-d8	2037-26-5	*92.4%*	*70-130*		*01/20/2022 18:00*	*A22012018.D*

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N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-15

IA-3 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.790	U	0.790	1.58	01/20/2022 18:28	A22012019.D
1,1-Dichloroethene	75-35-4	<0.983	U	0.983	1.97	01/20/2022 18:28	A22012019.D
trans-1,2-Dichloroethene	156-60-5	<0.632	U	0.632	1.26	01/20/2022 18:28	A22012019.D
cis-1,2-Dichloroethene	156-59-2	<0.632	U	0.632	1.26	01/20/2022 18:28	A22012019.D
Trichloroethene	79-01-6	<0.680	U	0.680	1.36	01/20/2022 18:28	A22012019.D
Tetrachloroethene	127-18-4	**2.94**		0.804	1.61	01/20/2022 18:28	A22012019.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*101%*	*70-130*		*01/20/2022 18:28*	*A22012019.D*
Surrogate: Toluene-d8	2037-26-5	*89.6%*	*70-130*		*01/20/2022 18:28*	*A22012019.D*

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-16

IA-4 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.785	U	0.785	1.57	01/20/2022 20:57	Ab22012005.D
1,1-Dichloroethene	75-35-4	<0.977	U	0.977	1.95	01/20/2022 20:57	Ab22012005.D
trans-1,2-Dichloroethene	156-60-5	<0.628	U	0.628	1.26	01/20/2022 20:57	Ab22012005.D
cis-1,2-Dichloroethene	156-59-2	<0.628	U	0.628	1.26	01/20/2022 20:57	Ab22012005.D
Trichloroethene	79-01-6	**0.714**	J	0.676	1.35	01/20/2022 20:57	Ab22012005.D
Tetrachloroethene	127-18-4	<0.799	U	0.799	1.60	01/20/2022 20:57	Ab22012005.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*101%*	*70-130*		*01/20/2022 20:57*	*Ab22012005.D*
Surrogate: Toluene-d8	2037-26-5	*96.5%*	*70-130*		*01/20/2022 20:57*	*Ab22012005.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-17

IA-5 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.785	U	0.785	1.57	01/20/2022 21:25	Ab22012006.D
1,1-Dichloroethene	75-35-4	<0.977	U	0.977	1.95	01/20/2022 21:25	Ab22012006.D
trans-1,2-Dichloroethene	156-60-5	<0.628	U	0.628	1.26	01/20/2022 21:25	Ab22012006.D
cis-1,2-Dichloroethene	156-59-2	<0.628	U	0.628	1.26	01/20/2022 21:25	Ab22012006.D
Trichloroethene	79-01-6	<0.677	U	0.677	1.35	01/20/2022 21:25	Ab22012006.D
Tetrachloroethene	127-18-4	<0.800	U	0.800	1.60	01/20/2022 21:25	Ab22012006.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*105%*	*70-130*		*01/20/2022 21:25*	*Ab22012006.D*
Surrogate: Toluene-d8	2037-26-5	*97.8%*	*70-130*		*01/20/2022 21:25*	*Ab22012006.D*

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-18

IA-6 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.786	U	0.786	1.57	01/20/2022 21:52	Ab22012007.D
1,1-Dichloroethene	75-35-4	<0.978	U	0.978	1.96	01/20/2022 21:52	Ab22012007.D
trans-1,2-Dichloroethene	156-60-5	<0.628	U	0.628	1.26	01/20/2022 21:52	Ab22012007.D
cis-1,2-Dichloroethene	156-59-2	<0.628	U	0.628	1.26	01/20/2022 21:52	Ab22012007.D
Trichloroethene	79-01-6	<0.677	U	0.677	1.35	01/20/2022 21:52	Ab22012007.D
Tetrachloroethene	127-18-4	<0.800	U	0.800	1.60	01/20/2022 21:52	Ab22012007.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*102%*	*70-130*		*01/20/2022 21:52*	*Ab22012007.D*
Surrogate: Toluene-d8	2037-26-5	*96.4%*	*70-130*		*01/20/2022 21:52*	*Ab22012007.D*

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N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-19

IA-7 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.789	U	0.789	1.58	01/20/2022 22:20	Ab22012008.D
1,1-Dichloroethene	75-35-4	<0.982	U	0.982	1.96	01/20/2022 22:20	Ab22012008.D
trans-1,2-Dichloroethene	156-60-5	<0.631	U	0.631	1.26	01/20/2022 22:20	Ab22012008.D
cis-1,2-Dichloroethene	156-59-2	<0.631	U	0.631	1.26	01/20/2022 22:20	Ab22012008.D
Trichloroethene	79-01-6	<0.680	U	0.680	1.36	01/20/2022 22:20	Ab22012008.D
Tetrachloroethene	127-18-4	**0.810**	J	0.803	1.61	01/20/2022 22:20	Ab22012008.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*104%*	*70-130*		*01/20/2022 22:20*	*Ab22012008.D*
Surrogate: Toluene-d8	2037-26-5	*91.2%*	*70-130*		*01/20/2022 22:20*	*Ab22012008.D*

BEACON ENVIRONMENTAL

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N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-20

IA-8 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.789	U	0.789	1.58	01/20/2022 22:47	Ab22012009.D
1,1-Dichloroethene	75-35-4	<0.981	U	0.981	1.96	01/20/2022 22:47	Ab22012009.D
trans-1,2-Dichloroethene	156-60-5	<0.631	U	0.631	1.26	01/20/2022 22:47	Ab22012009.D
cis-1,2-Dichloroethene	156-59-2	<0.631	U	0.631	1.26	01/20/2022 22:47	Ab22012009.D
Trichloroethene	79-01-6	**1.39**		0.679	1.36	01/20/2022 22:47	Ab22012009.D
Tetrachloroethene	127-18-4	**1.71**		0.803	1.61	01/20/2022 22:47	Ab22012009.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*98.9%*	*70-130*		*01/20/2022 22:47*	*Ab22012009.D*
Surrogate: Toluene-d8	2037-26-5	*92.8%*	*70-130*		*01/20/2022 22:47*	*Ab22012009.D*

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N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-21

IA-9 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.783	U	0.783	1.57	01/20/2022 23:15	Ab22012010.D
1,1-Dichloroethene	75-35-4	<0.974	U	0.974	1.95	01/20/2022 23:15	Ab22012010.D
trans-1,2-Dichloroethene	156-60-5	<0.626	U	0.626	1.25	01/20/2022 23:15	Ab22012010.D
cis-1,2-Dichloroethene	156-59-2	<0.626	U	0.626	1.25	01/20/2022 23:15	Ab22012010.D
Trichloroethene	79-01-6	<0.674	U	0.674	1.35	01/20/2022 23:15	Ab22012010.D
Tetrachloroethene	127-18-4	<0.797	U	0.797	1.59	01/20/2022 23:15	Ab22012010.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*103%*	*70-130*		*01/20/2022 23:15*	*Ab22012010.D*
Surrogate: Toluene-d8	2037-26-5	*97.0%*	*70-130*		*01/20/2022 23:15*	*Ab22012010.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-22

IA-10 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.789	U	0.789	1.58	01/20/2022 23:43	Ab22012011.D
1,1-Dichloroethene	75-35-4	<0.982	U	0.982	1.96	01/20/2022 23:43	Ab22012011.D
trans-1,2-Dichloroethene	156-60-5	<0.631	U	0.631	1.26	01/20/2022 23:43	Ab22012011.D
cis-1,2-Dichloroethene	156-59-2	<0.631	U	0.631	1.26	01/20/2022 23:43	Ab22012011.D
Trichloroethene	79-01-6	<0.680	U	0.680	1.36	01/20/2022 23:43	Ab22012011.D
Tetrachloroethene	127-18-4	**4.31**		0.804	1.61	01/20/2022 23:43	Ab22012011.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*106%*	*70-130*		*01/20/2022 23:43*	*Ab22012011.D*
Surrogate: Toluene-d8	2037-26-5	*87.4%*	*70-130*		*01/20/2022 23:43*	*Ab22012011.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-23

IA-11 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.791	U	0.791	1.58	01/21/2022 00:11	Ab22012012.D
1,1-Dichloroethene	75-35-4	<0.984	U	0.984	1.97	01/21/2022 00:11	Ab22012012.D
trans-1,2-Dichloroethene	156-60-5	<0.633	U	0.633	1.27	01/21/2022 00:11	Ab22012012.D
cis-1,2-Dichloroethene	156-59-2	<0.633	U	0.633	1.27	01/21/2022 00:11	Ab22012012.D
Trichloroethene	79-01-6	<0.681	U	0.681	1.36	01/21/2022 00:11	Ab22012012.D
Tetrachloroethene	127-18-4	**2.32**		0.805	1.61	01/21/2022 00:11	Ab22012012.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*100%*	*70-130*		*01/21/2022 00:11*	*Ab22012012.D*
Surrogate: Toluene-d8	2037-26-5	*94.7%*	*70-130*		*01/21/2022 00:11*	*Ab22012012.D*

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Lab Sample ID: 0006132-24

IA-12 (Passive 5 day)

Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	LOD (µg/m³)	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.791	U	0.791	1.58	01/21/2022 00:39	Ab22012013.D
1,1-Dichloroethene	75-35-4	<0.985	U	0.985	1.97	01/21/2022 00:39	Ab22012013.D
trans-1,2-Dichloroethene	156-60-5	<0.633	U	0.633	1.27	01/21/2022 00:39	Ab22012013.D
cis-1,2-Dichloroethene	156-59-2	<0.633	U	0.633	1.27	01/21/2022 00:39	Ab22012013.D
Trichloroethene	79-01-6	<0.682	U	0.682	1.36	01/21/2022 00:39	Ab22012013.D
Tetrachloroethene	127-18-4	**0.841**	J	0.806	1.61	01/21/2022 00:39	Ab22012013.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*104%*	*70-130*		*01/21/2022 00:39*	*Ab22012013.D*
Surrogate: Toluene-d8	2037-26-5	*92.0%*	*70-130*		*01/21/2022 00:39*	*Ab22012013.D*

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

QC Information/Summary

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B21J038 - Instrument: A System - File ID: A21101516.D

B21J038-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	43.7	5	2.5	ng	50.0		87.4	70-130			
1,1-Dichloroethene	46.4	5	2.5	ng	50.0		92.8	70-130			
trans-1,2-Dichloroethene	48.2	5	2.5	ng	50.0		96.3	70-130			
cis-1,2-Dichloroethene	50.9	5	2.5	ng	50.0		102	70-130			
Trichloroethene	47.7	5	2.5	ng	50.0		95.4	70-130			
Tetrachloroethene	49.4	5	2.5	ng	50.0		98.8	70-130			
Surrogate: 1,2-DCA-d4	*52.6*			*ng*	50.0		*105*	*70-130*			
Surrogate: Toluene-d8	*50.9*			*ng*	50.0		*102*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B21J038 - Instrument: A System - File ID: A21101519.D

B21J038-ICB1 (Lab Blank/Initial Calibration Blank)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<2.5	5	2.5	ng							U
1,1-Dichloroethene	<2.5	5	2.5	ng							U
trans-1,2-Dichloroethene	<2.5	5	2.5	ng							U
cis-1,2-Dichloroethene	<2.5	5	2.5	ng							U
Trichloroethene	<2.5	5	2.5	ng							U
Tetrachloroethene	<2.5	5	2.5	ng							U
Surrogate: 1,2-DCA-d4	*93.5*			*ng*	100		*93.5*	*70-130*			
Surrogate: Toluene-d8	*98.5*			*ng*	100		*98.5*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A056 - Batch: 22A0053 - Instrument: A System - File ID: A22012002.D

22A0053-BS1 (LCS, Calibration Source Verification)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	45.2	5	2.5	ng	50.0		90.3	70-130			
1,1-Dichloroethene	44.7	5	2.5	ng	50.0		89.3	70-130			
trans-1,2-Dichloroethene	48.2	5	2.5	ng	50.0		96.4	70-130			
cis-1,2-Dichloroethene	49.0	5	2.5	ng	50.0		98.0	70-130			
Trichloroethene	48.2	5	2.5	ng	50.0		96.4	70-130			
Tetrachloroethene	54.2	5	2.5	ng	50.0		108	70-130			
Surrogate: 1,2-DCA-d4	*55.5*			*ng*	50.0		*111*	*70-130*			
Surrogate: Toluene-d8	*47.9*			*ng*	50.0		*95.8*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A056 - Batch: 22A0053 - Instrument: A System - File ID: A22012003.D

22A0053-BLK1 (Lab Blank)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<0.783	1.57	0.783	µg/m³							U
1,1-Dichloroethene	<0.974	1.95	0.974	µg/m³							U
trans-1,2-Dichloroethene	<0.626	1.25	0.626	µg/m³							U
cis-1,2-Dichloroethene	<0.626	1.25	0.626	µg/m³							U
Trichloroethene	<0.674	1.35	0.674	µg/m³							U
Tetrachloroethene	<0.797	1.59	0.797	µg/m³							U
Surrogate: 1,2-DCA-d4	*107*			*ng*	100		*107*	*70-130*			
Surrogate: Toluene-d8	*94.4*			*ng*	100		*94.4*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A056 - Instrument: A System - File ID: A22012004.D

B22A056-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	44.5	5	2.5	ng	50.0		89.1	70-130			
1,1-Dichloroethene	49.2	5	2.5	ng	50.0		98.3	70-130			
trans-1,2-Dichloroethene	48.5	5	2.5	ng	50.0		96.9	70-130			
cis-1,2-Dichloroethene	48.5	5	2.5	ng	50.0		96.9	70-130			
Trichloroethene	54.0	5	2.5	ng	50.0		108	70-130			
Tetrachloroethene	55.2	5	2.5	ng	50.0		110	70-130			
Surrogate: 1,2-DCA-d4	*55.6*			*ng*	50.0		*111*	*70-130*			
Surrogate: Toluene-d8	*48.8*			*ng*	50.0		*97.6*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A056 - Instrument: A System - File ID: A22012020.D

B22A056-CCV1 (LCS, Closing Calibration Verification)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	44.2	5	2.5	ng	50.0		88.4	70-130			
1,1-Dichloroethene	50.9	5	2.5	ng	50.0		102	70-130			
trans-1,2-Dichloroethene	49.3	5	2.5	ng	50.0		98.5	70-130			
cis-1,2-Dichloroethene	49.0	5	2.5	ng	50.0		98.1	70-130			
Trichloroethene	47.4	5	2.5	ng	50.0		94.7	70-130			
Tetrachloroethene	55.3	5	2.5	ng	50.0		111	70-130			
Surrogate: 1,2-DCA-d4	*53.4*			*ng*	50.0		*107*	*70-130*			
Surrogate: Toluene-d8	*49.6*			*ng*	50.0		*99.2*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A058 - Batch: 22A0055 - Instrument: A System - File ID: Ab22012002.D

22A0055-BS1 (LCS, Calibration Source Verification)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	42.3	5	2.5	ng	50.0		84.6	70-130			
1,1-Dichloroethene	43.9	5	2.5	ng	50.0		87.8	70-130			
trans-1,2-Dichloroethene	48.7	5	2.5	ng	50.0		97.4	70-130			
cis-1,2-Dichloroethene	48.1	5	2.5	ng	50.0		96.2	70-130			
Trichloroethene	47.3	5	2.5	ng	50.0		94.5	70-130			
Tetrachloroethene	55.7	5	2.5	ng	50.0		111	70-130			
Surrogate: 1,2-DCA-d4	*55.7*			*ng*	50.0		*111*	*70-130*			
Surrogate: Toluene-d8	*49.3*			*ng*	50.0		*98.6*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A058 - Batch: 22A0055 - Instrument: A System - File ID: Ab22012003.D

22A0055-BLK1 (Lab Blank)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<0.783	1.57	0.783	µg/m³							U
1,1-Dichloroethene	<0.974	1.95	0.974	µg/m³							U
trans-1,2-Dichloroethene	<0.626	1.25	0.626	µg/m³							U
cis-1,2-Dichloroethene	<0.626	1.25	0.626	µg/m³							U
Trichloroethene	<0.674	1.35	0.674	µg/m³							U
Tetrachloroethene	<0.797	1.59	0.797	µg/m³							U
Surrogate: 1,2-DCA-d4	*104*			*ng*	100		*104*	*70-130*			
Surrogate: Toluene-d8	*96.5*			*ng*	100		*96.5*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A058 - Instrument: A System - File ID: Ab22012004.D

B22A058-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	42.8	5	2.5	ng	50.0		85.5	70-130			
1,1-Dichloroethene	45.5	5	2.5	ng	50.0		91.0	70-130			
trans-1,2-Dichloroethene	48.2	5	2.5	ng	50.0		96.5	70-130			
cis-1,2-Dichloroethene	49.3	5	2.5	ng	50.0		98.5	70-130			
Trichloroethene	51.5	5	2.5	ng	50.0		103	70-130			
Tetrachloroethene	55.9	5	2.5	ng	50.0		112	70-130			
Surrogate: 1,2-DCA-d4	*55.1*			*ng*	50.0		*110*	*70-130*			
Surrogate: Toluene-d8	*49.9*			*ng*	50.0		*99.8*	*70-130*			

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Organics in Air by EPA TO-17 Using ChloroSorber Packed Tube - Quality Control Summary

Sequence: B22A058 - Instrument: A System - File ID: Ab22012014.D

B22A058-CCV1 (LCS, Closing Calibration Verification)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	42.1	5	2.5	ng	50.0		84.2	70-130			
1,1-Dichloroethene	43.3	5	2.5	ng	50.0		86.6	70-130			
trans-1,2-Dichloroethene	48.6	5	2.5	ng	50.0		97.2	70-130			
cis-1,2-Dichloroethene	49.3	5	2.5	ng	50.0		98.6	70-130			
Trichloroethene	49.3	5	2.5	ng	50.0		98.6	70-130			
Tetrachloroethene	55.5	5	2.5	ng	50.0		111	70-130			
Surrogate: 1,2-DCA-d4	*55.7*			*ng*	50.0		*111*	*70-130*			
Surrogate: Toluene-d8	*49.3*			*ng*	50.0		*98.6*	*70-130*			

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

TO-17 (Passive) - LCS/LCSD Quality Control Summary

LCS: 22A0053-BS1 File ID: A22012002.D Analyzed: 1/20/22 10:59
LCSD: B22A056-ICV1 File ID: A22012004.D Analyzed: 1/20/22 10:01

Analyte	CAS#	LCS Result (ng)	%REC	Q	Spike Level (ng)	LCSD Result (ng)	%REC	%REC Limits	RPD	RPD Limit	Q
Vinyl Chloride	75-01-4	45.16	90.32		50	44.53	89.10	70-130	1.40	30	
1,1-Dichloroethene	75-35-4	44.65	89.3		50	49.17	98.30	70-130	9.64	30	
trans-1,2-Dichloroethene	156-60-5	48.18	96.36		50	48.45	96.90	70-130	0.56	30	
cis-1,2-Dichloroethene	156-59-2	49.01	98.02		50	48.45	96.90	70-130	1.15	30	
Trichloroethene	79-01-6	48.18	96.36		50	53.98	108.00	70-130	11.35	30	
Tetrachloroethene	127-18-4	54.21	108.42		50	55.22	110.00	70-130	1.85	30	

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CERTIFICATE OF ANALYSIS

EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

TO-17 (Passive) - LCS/LCSD Quality Control Summary

LCS: 22A0055-BS1 File ID: Ab22012002.D Analyzed: 1/20/22 20:30

LCSD: B22A058-ICV1 File ID: Ab22012004.D Analyzed: 1/20/22 19:41

Analyte	CAS#	LCS Result (ng)	%REC	Q	Spike Level (ng)	LCSD Result (ng)	%REC	%REC Limits	RPD	RPD Limit	Q
Vinyl Chloride	75-01-4	42.32	84.64		50	42.77	85.50	70-130	1.06	30	
1,1-Dichloroethene	75-35-4	43.89	87.78		50	45.49	91.00	70-130	3.58	30	
trans-1,2-Dichloroethene	156-60-5	48.69	97.38		50	48.24	96.50	70-130	0.93	30	
cis-1,2-Dichloroethene	156-59-2	48.09	96.18		50	49.26	98.50	70-130	2.40	30	
Trichloroethene	79-01-6	47.27	94.54		50	51.51	103.00	70-130	8.58	30	
Tetrachloroethene	127-18-4	55.68	111.36		50	55.92	112.00	70-130	0.43	30	

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Additional QC Information

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Sample Result Calculation Summary (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Lab ID: 0006132-01 **Sample Name:** IA-1 (Passive 8hr)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	481	1.00	0.568	U	U	A22012005.D
1,1-Dichloroethene	481	1.00	0.457	U	U	A22012005.D
trans-1,2-Dichloroethene	481	1.00	0.710	U	U	A22012005.D
cis-1,2-Dichloroethene	481	1.00	0.710	U	U	A22012005.D
Trichloroethene	481	1.00	0.659	U	U	A22012005.D
Tetrachloroethene	481	1.00	0.558	U	U	A22012005.D
Lab ID: 0006132-02 **Sample Name:** IA-2 (Passive 8hr)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	490	1.00	0.568	U	U	A22012006.D
1,1-Dichloroethene	490	1.00	0.457	U	U	A22012006.D
trans-1,2-Dichloroethene	490	1.00	0.710	U	U	A22012006.D
cis-1,2-Dichloroethene	490	1.00	0.710	U	U	A22012006.D
Trichloroethene	490	1.00	0.659	U	U	A22012006.D
Tetrachloroethene	490	1.00	0.558	U	U	A22012006.D
Lab ID: 0006132-03 **Sample Name:** IA-3 (Passive 8hr)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	481	1.00	0.568	U	U	A22012007.D
1,1-Dichloroethene	481	1.00	0.457	U	U	A22012007.D
trans-1,2-Dichloroethene	481	1.00	0.710	U	U	A22012007.D
cis-1,2-Dichloroethene	481	1.00	0.710	U	U	A22012007.D
Trichloroethene	481	1.00	0.659	U	U	A22012007.D
Tetrachloroethene	481	1.00	0.558	U	U	A22012007.D
Lab ID: 0006132-04 **Sample Name:** IA-4 (Passive 8hr)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	488	1.00	0.568	U	U	A22012008.D
1,1-Dichloroethene	488	1.00	0.457	U	U	A22012008.D
trans-1,2-Dichloroethene	488	1.00	0.710	U	U	A22012008.D
cis-1,2-Dichloroethene	488	1.00	0.710	U	U	A22012008.D
Trichloroethene	488	1.00	0.659	U	U	A22012008.D
Tetrachloroethene	488	1.00	0.558	U	U	A22012008.D
Lab ID: 0006132-05 **Sample Name:** IA-5 (Passive 8hr)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	483	1.00	0.568	U	U	A22012009.D
1,1-Dichloroethene	483	1.00	0.457	U	U	A22012009.D
trans-1,2-Dichloroethene	483	1.00	0.710	U	U	A22012009.D
cis-1,2-Dichloroethene	483	1.00	0.710	U	U	A22012009.D
Trichloroethene	483	1.00	0.659	U	U	A22012009.D
Tetrachloroethene	483	1.00	0.558	U	U	A22012009.D

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Sample Result Calculation Summary (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Lab ID: 0006132-06 **Sample Name:** IA-6 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	487	1.00	0.568	U	U	A22012010.D
1,1-Dichloroethene	487	1.00	0.457	U	U	A22012010.D
trans-1,2-Dichloroethene	487	1.00	0.710	U	U	A22012010.D
cis-1,2-Dichloroethene	487	1.00	0.710	U	U	A22012010.D
Trichloroethene	487	1.00	0.659	U	U	A22012010.D
Tetrachloroethene	487	1.00	0.558	U	U	A22012010.D
Lab ID: 0006132-07 **Sample Name:** IA-7 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	454	1.00	0.568	U	U	A22012011.D
1,1-Dichloroethene	454	1.00	0.457	U	U	A22012011.D
trans-1,2-Dichloroethene	454	1.00	0.710	U	U	A22012011.D
cis-1,2-Dichloroethene	454	1.00	0.710	U	U	A22012011.D
Trichloroethene	454	1.00	0.659	U	U	A22012011.D
Tetrachloroethene	454	1.00	0.558	U	U	A22012011.D
Lab ID: 0006132-08 **Sample Name:** IA-8 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	460	1.00	0.568	U	U	A22012012.D
1,1-Dichloroethene	460	1.00	0.457	U	U	A22012012.D
trans-1,2-Dichloroethene	460	1.00	0.710	U	U	A22012012.D
cis-1,2-Dichloroethene	460	1.00	0.710	U	U	A22012012.D
Trichloroethene	460	1.00	0.659	U	U	A22012012.D
Tetrachloroethene	460	1.00	0.558	U	U	A22012012.D
Lab ID: 0006132-09 **Sample Name:** IA-9 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	487	1.00	0.568	U	U	A22012013.D
1,1-Dichloroethene	487	1.00	0.457	U	U	A22012013.D
trans-1,2-Dichloroethene	487	1.00	0.710	U	U	A22012013.D
cis-1,2-Dichloroethene	487	1.00	0.710	U	U	A22012013.D
Trichloroethene	487	1.00	0.659	U	U	A22012013.D
Tetrachloroethene	487	1.00	0.558	U	U	A22012013.D
Lab ID: 0006132-10 **Sample Name:** IA-10 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	471	1.00	0.568	U	U	A22012014.D
1,1-Dichloroethene	471	1.00	0.457	U	U	A22012014.D
trans-1,2-Dichloroethene	471	1.00	0.710	U	U	A22012014.D
cis-1,2-Dichloroethene	471	1.00	0.710	U	U	A22012014.D
Trichloroethene	471	1.00	0.659	U	U	A22012014.D
Tetrachloroethene	471	1.00	0.558	U	U	A22012014.D

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Sample Result Calculation Summary (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Lab ID: 0006132-11 **Sample Name:** IA-11 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	469	1.00	0.568	U	U	A22012015.D
1,1-Dichloroethene	469	1.00	0.457	U	U	A22012015.D
trans-1,2-Dichloroethene	469	1.00	0.710	U	U	A22012015.D
cis-1,2-Dichloroethene	469	1.00	0.710	U	U	A22012015.D
Trichloroethene	469	1.00	0.659	U	U	A22012015.D
Tetrachloroethene	469	1.00	0.558	U	U	A22012015.D
Lab ID: 0006132-12 **Sample Name:** IA-12 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	475	1.00	0.568	U	U	A22012016.D
1,1-Dichloroethene	475	1.00	0.457	U	U	A22012016.D
trans-1,2-Dichloroethene	475	1.00	0.710	U	U	A22012016.D
cis-1,2-Dichloroethene	475	1.00	0.710	U	U	A22012016.D
Trichloroethene	475	1.00	0.659	U	U	A22012016.D
Tetrachloroethene	475	1.00	0.558	U	U	A22012016.D
Lab ID: 0006132-13 **Sample Name:** IA-1 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,746	1.00	0.568	U	U	A22012017.D
1,1-Dichloroethene	5,746	1.00	0.457	U	U	A22012017.D
trans-1,2-Dichloroethene	5,746	1.00	0.710	U	U	A22012017.D
cis-1,2-Dichloroethene	5,746	1.00	0.710	U	U	A22012017.D
Trichloroethene	5,746	1.00	0.659	U	U	A22012017.D
Tetrachloroethene	5,746	1.00	0.558	U	U	A22012017.D
Lab ID: 0006132-14 **Sample Name:** IA-2 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,751	1.00	0.568	U	U	A22012018.D
1,1-Dichloroethene	5,751	1.00	0.457	U	U	A22012018.D
trans-1,2-Dichloroethene	5,751	1.00	0.710	U	U	A22012018.D
cis-1,2-Dichloroethene	5,751	1.00	0.710	U	U	A22012018.D
Trichloroethene	5,751	1.00	0.659	U	U	A22012018.D
Tetrachloroethene	5,751	1.00	0.558	4.78	1.53	A22012018.D
Lab ID: 0006132-15 **Sample Name:** IA-3 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,739	1.00	0.568	U	U	A22012019.D
1,1-Dichloroethene	5,739	1.00	0.457	U	U	A22012019.D
trans-1,2-Dichloroethene	5,739	1.00	0.710	U	U	A22012019.D
cis-1,2-Dichloroethene	5,739	1.00	0.710	U	U	A22012019.D
Trichloroethene	5,739	1.00	0.659	U	U	A22012019.D
Tetrachloroethene	5,739	1.00	0.558	9.13	2.94	A22012019.D

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Sample Result Calculation Summary (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Lab ID: 0006132-16 **Sample Name:** IA-4 (Passive 5 day)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	5,773	1.00	0.568	U	U	Ab22012005.D
1,1-Dichloroethene	5,773	1.00	0.457	U	U	Ab22012005.D
trans-1,2-Dichloroethene	5,773	1.00	0.710	U	U	Ab22012005.D
cis-1,2-Dichloroethene	5,773	1.00	0.710	U	U	Ab22012005.D
Trichloroethene	5,773	1.00	0.659	2.64	0.714	Ab22012005.D
Tetrachloroethene	5,773	1.00	0.558	U	U	Ab22012005.D
Lab ID: 0006132-17 **Sample Name:** IA-5 (Passive 5 day)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	5,771	1.00	0.568	U	U	Ab22012006.D
1,1-Dichloroethene	5,771	1.00	0.457	U	U	Ab22012006.D
trans-1,2-Dichloroethene	5,771	1.00	0.710	U	U	Ab22012006.D
cis-1,2-Dichloroethene	5,771	1.00	0.710	U	U	Ab22012006.D
Trichloroethene	5,771	1.00	0.659	U	U	Ab22012006.D
Tetrachloroethene	5,771	1.00	0.558	U	U	Ab22012006.D
Lab ID: 0006132-18 **Sample Name:** IA-6 (Passive 5 day)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	5,770	1.00	0.568	U	U	Ab22012007.D
1,1-Dichloroethene	5,770	1.00	0.457	U	U	Ab22012007.D
trans-1,2-Dichloroethene	5,770	1.00	0.710	U	U	Ab22012007.D
cis-1,2-Dichloroethene	5,770	1.00	0.710	U	U	Ab22012007.D
Trichloroethene	5,770	1.00	0.659	U	U	Ab22012007.D
Tetrachloroethene	5,770	1.00	0.558	U	U	Ab22012007.D
Lab ID: 0006132-19 **Sample Name:** IA-7 (Passive 5 day)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	5,745	1.00	0.568	U	U	Ab22012008.D
1,1-Dichloroethene	5,745	1.00	0.457	U	U	Ab22012008.D
trans-1,2-Dichloroethene	5,745	1.00	0.710	U	U	Ab22012008.D
cis-1,2-Dichloroethene	5,745	1.00	0.710	U	U	Ab22012008.D
Trichloroethene	5,745	1.00	0.659	U	U	Ab22012008.D
Tetrachloroethene	5,745	1.00	0.558	2.52	0.810	Ab22012008.D
Lab ID: 0006132-20 **Sample Name:** IA-8 (Passive 5 day)					**X̄ Temp (°C):** 8.00	
Vinyl Chloride	5,747	1.00	0.568	U	U	Ab22012009.D
1,1-Dichloroethene	5,747	1.00	0.457	U	U	Ab22012009.D
trans-1,2-Dichloroethene	5,747	1.00	0.710	U	U	Ab22012009.D
cis-1,2-Dichloroethene	5,747	1.00	0.710	U	U	Ab22012009.D
Trichloroethene	5,747	1.00	0.659	5.12	1.39	Ab22012009.D
Tetrachloroethene	5,747	1.00	0.558	5.31	1.71	Ab22012009.D

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Sample Result Calculation Summary (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Lab ID: 0006132-21 **Sample Name:** IA-9 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,792	1.00	0.568	U	U	Ab22012010.D
1,1-Dichloroethene	5,792	1.00	0.457	U	U	Ab22012010.D
trans-1,2-Dichloroethene	5,792	1.00	0.710	U	U	Ab22012010.D
cis-1,2-Dichloroethene	5,792	1.00	0.710	U	U	Ab22012010.D
Trichloroethene	5,792	1.00	0.659	U	U	Ab22012010.D
Tetrachloroethene	5,792	1.00	0.558	U	U	Ab22012010.D
Lab ID: 0006132-22 **Sample Name:** IA-10 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,743	1.00	0.568	U	U	Ab22012011.D
1,1-Dichloroethene	5,743	1.00	0.457	U	U	Ab22012011.D
trans-1,2-Dichloroethene	5,743	1.00	0.710	U	U	Ab22012011.D
cis-1,2-Dichloroethene	5,743	1.00	0.710	U	U	Ab22012011.D
Trichloroethene	5,743	1.00	0.659	U	U	Ab22012011.D
Tetrachloroethene	5,743	1.00	0.558	13.40	4.31	Ab22012011.D
Lab ID: 0006132-23 **Sample Name:** IA-11 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,732	1.00	0.568	U	U	Ab22012012.D
1,1-Dichloroethene	5,732	1.00	0.457	U	U	Ab22012012.D
trans-1,2-Dichloroethene	5,732	1.00	0.710	U	U	Ab22012012.D
cis-1,2-Dichloroethene	5,732	1.00	0.710	U	U	Ab22012012.D
Trichloroethene	5,732	1.00	0.659	U	U	Ab22012012.D
Tetrachloroethene	5,732	1.00	0.558	7.20	2.32	Ab22012012.D
Lab ID: 0006132-24 **Sample Name:** IA-12 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,729	1.00	0.568	U	U	Ab22012013.D
1,1-Dichloroethene	5,729	1.00	0.457	U	U	Ab22012013.D
trans-1,2-Dichloroethene	5,729	1.00	0.710	U	U	Ab22012013.D
cis-1,2-Dichloroethene	5,729	1.00	0.710	U	U	Ab22012013.D
Trichloroethene	5,729	1.00	0.659	U	U	Ab22012013.D
Tetrachloroethene	5,729	1.00	0.558	2.61	0.841	Ab22012013.D

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Calculations:

$$C = \frac{1000 \times M \times DF}{Uc \times t}$$

$$Uc = U * \left(\left(\frac{Ts + 273.15}{Tu + 273.15}\right)^{1/2}\right)$$

where:
- C = concentration (µg/m^3)
- M = mass (ng)
- DF = dilution factor
- Uc = uptake rate (ml/min), corrected
- t = sampling time (minutes)
- U = compound specific uptake rate
- Tu = uptake rate study temperature
- Ts = sample average temperature

Note: Tu is 16.65°C

Reference: Federal Register/Vol. 79, No. 125/June 30, 2014

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Method Detection and Reporting Limit Calculations (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial (ng) LOQ	M Initial (ng) LOD	C Calculated (µg/m³) LOQ	C Calculated (µg/m³) LOD
Lab ID: 0006132-01	**Sample Name:** IA-1 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	481	1.00	0.568	5.0	2.50	18.8	9.42
1,1-Dichloroethene	481	1.00	0.457	5.0	2.50	23.5	11.7
trans-1,2-Dichloroethene	481	1.00	0.710	5.0	2.50	15.1	7.54
cis-1,2-Dichloroethene	481	1.00	0.710	5.0	2.50	15.1	7.54
Trichloroethene	481	1.00	0.659	5.0	2.50	16.2	8.12
Tetrachloroethene	481	1.00	0.558	5.0	2.50	19.2	9.59
Lab ID: 0006132-02	**Sample Name:** IA-2 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	490	1.00	0.568	5.0	2.50	18.5	9.25
1,1-Dichloroethene	490	1.00	0.457	5.0	2.50	23.0	11.5
trans-1,2-Dichloroethene	490	1.00	0.710	5.0	2.50	14.8	7.40
cis-1,2-Dichloroethene	490	1.00	0.710	5.0	2.50	14.8	7.40
Trichloroethene	490	1.00	0.659	5.0	2.50	15.9	7.97
Tetrachloroethene	490	1.00	0.558	5.0	2.50	18.8	9.42
Lab ID: 0006132-03	**Sample Name:** IA-3 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	481	1.00	0.568	5.0	2.50	18.8	9.42
1,1-Dichloroethene	481	1.00	0.457	5.0	2.50	23.5	11.7
trans-1,2-Dichloroethene	481	1.00	0.710	5.0	2.50	15.1	7.54
cis-1,2-Dichloroethene	481	1.00	0.710	5.0	2.50	15.1	7.54
Trichloroethene	481	1.00	0.659	5.0	2.50	16.2	8.12
Tetrachloroethene	481	1.00	0.558	5.0	2.50	19.2	9.59
Lab ID: 0006132-04	**Sample Name:** IA-4 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	488	1.00	0.568	5.0	2.50	18.6	9.29
1,1-Dichloroethene	488	1.00	0.457	5.0	2.50	23.1	11.6
trans-1,2-Dichloroethene	488	1.00	0.710	5.0	2.50	14.9	7.43
cis-1,2-Dichloroethene	488	1.00	0.710	5.0	2.50	14.9	7.43
Trichloroethene	488	1.00	0.659	5.0	2.50	16.0	8.00
Tetrachloroethene	488	1.00	0.558	5.0	2.50	18.9	9.46

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Method Detection and Reporting Limit Calculations (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial (ng) LOQ	M Initial (ng) LOD	C Calculated (µg/m³) LOQ	C Calculated (µg/m³) LOD
Lab ID: 0006132-05	**Sample Name:** IA-5 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	483	1.00	0.568	5.0	2.50	18.8	9.38
1,1-Dichloroethene	483	1.00	0.457	5.0	2.50	23.4	11.7
trans-1,2-Dichloroethene	483	1.00	0.710	5.0	2.50	15.0	7.51
cis-1,2-Dichloroethene	483	1.00	0.710	5.0	2.50	15.0	7.51
Trichloroethene	483	1.00	0.659	5.0	2.50	16.2	8.08
Tetrachloroethene	483	1.00	0.558	5.0	2.50	19.1	9.55
Lab ID: 0006132-06	**Sample Name:** IA-6 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	487	1.00	0.568	5.0	2.50	18.6	9.31
1,1-Dichloroethene	487	1.00	0.457	5.0	2.50	23.2	11.6
trans-1,2-Dichloroethene	487	1.00	0.710	5.0	2.50	14.9	7.45
cis-1,2-Dichloroethene	487	1.00	0.710	5.0	2.50	14.9	7.45
Trichloroethene	487	1.00	0.659	5.0	2.50	16.0	8.02
Tetrachloroethene	487	1.00	0.558	5.0	2.50	19.0	9.48
Lab ID: 0006132-07	**Sample Name:** IA-7 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	454	1.00	0.568	5.0	2.50	20.0	9.98
1,1-Dichloroethene	454	1.00	0.457	5.0	2.50	24.8	12.4
trans-1,2-Dichloroethene	454	1.00	0.710	5.0	2.50	16.0	7.99
cis-1,2-Dichloroethene	454	1.00	0.710	5.0	2.50	16.0	7.99
Trichloroethene	454	1.00	0.659	5.0	2.50	17.2	8.60
Tetrachloroethene	454	1.00	0.558	5.0	2.50	20.3	10.2
Lab ID: 0006132-08	**Sample Name:** IA-8 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	460	1.00	0.568	5.0	2.50	19.7	9.85
1,1-Dichloroethene	460	1.00	0.457	5.0	2.50	24.5	12.3
trans-1,2-Dichloroethene	460	1.00	0.710	5.0	2.50	15.8	7.88
cis-1,2-Dichloroethene	460	1.00	0.710	5.0	2.50	15.8	7.88
Trichloroethene	460	1.00	0.659	5.0	2.50	17.0	8.49
Tetrachloroethene	460	1.00	0.558	5.0	2.50	20.1	10.0

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Method Detection and Reporting Limit Calculations (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial (ng) LOQ	M Initial (ng) LOD	C Calculated (µg/m³) LOQ	C Calculated (µg/m³) LOD
Lab ID: 0006132-09	**Sample Name:** IA-9 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	487	1.00	0.568	5.0	2.50	18.6	9.31
1,1-Dichloroethene	487	1.00	0.457	5.0	2.50	23.2	11.6
trans-1,2-Dichloroethene	487	1.00	0.710	5.0	2.50	14.9	7.45
cis-1,2-Dichloroethene	487	1.00	0.710	5.0	2.50	14.9	7.45
Trichloroethene	487	1.00	0.659	5.0	2.50	16.0	8.02
Tetrachloroethene	487	1.00	0.558	5.0	2.50	19.0	9.48
Lab ID: 0006132-10	**Sample Name:** IA-10 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	471	1.00	0.568	5.0	2.50	19.2	9.62
1,1-Dichloroethene	471	1.00	0.457	5.0	2.50	24.0	12.0
trans-1,2-Dichloroethene	471	1.00	0.710	5.0	2.50	15.4	7.70
cis-1,2-Dichloroethene	471	1.00	0.710	5.0	2.50	15.4	7.70
Trichloroethene	471	1.00	0.659	5.0	2.50	16.6	8.29
Tetrachloroethene	471	1.00	0.558	5.0	2.50	19.6	9.80
Lab ID: 0006132-11	**Sample Name:** IA-11 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	469	1.00	0.568	5.0	2.50	19.3	9.66
1,1-Dichloroethene	469	1.00	0.457	5.0	2.50	24.1	12.0
trans-1,2-Dichloroethene	469	1.00	0.710	5.0	2.50	15.5	7.73
cis-1,2-Dichloroethene	469	1.00	0.710	5.0	2.50	15.5	7.73
Trichloroethene	469	1.00	0.659	5.0	2.50	16.7	8.33
Tetrachloroethene	469	1.00	0.558	5.0	2.50	19.7	9.84
Lab ID: 0006132-12	**Sample Name:** IA-12 (Passive 8hr)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	475	1.00	0.568	5.0	2.50	19.1	9.54
1,1-Dichloroethene	475	1.00	0.457	5.0	2.50	23.7	11.9
trans-1,2-Dichloroethene	475	1.00	0.710	5.0	2.50	15.3	7.63
cis-1,2-Dichloroethene	475	1.00	0.710	5.0	2.50	15.3	7.63
Trichloroethene	475	1.00	0.659	5.0	2.50	16.4	8.22
Tetrachloroethene	475	1.00	0.558	5.0	2.50	19.4	9.72

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Method Detection and Reporting Limit Calculations (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial (ng) LOQ	M Initial (ng) LOD	C Calculated (µg/m³) LOQ	C Calculated (µg/m³) LOD
Lab ID: 0006132-13	**Sample Name:** IA-1 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,746	1.00	0.568	5.0	2.50	1.58	0.789
1,1-Dichloroethene	5,746	1.00	0.457	5.0	2.50	1.96	0.982
trans-1,2-Dichloroethene	5,746	1.00	0.710	5.0	2.50	1.26	0.631
cis-1,2-Dichloroethene	5,746	1.00	0.710	5.0	2.50	1.26	0.631
Trichloroethene	5,746	1.00	0.659	5.0	2.50	1.36	0.680
Tetrachloroethene	5,746	1.00	0.558	5.0	2.50	1.61	0.803
Lab ID: 0006132-14	**Sample Name:** IA-2 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,751	1.00	0.568	5.0	2.50	1.58	0.788
1,1-Dichloroethene	5,751	1.00	0.457	5.0	2.50	1.96	0.981
trans-1,2-Dichloroethene	5,751	1.00	0.710	5.0	2.50	1.26	0.630
cis-1,2-Dichloroethene	5,751	1.00	0.710	5.0	2.50	1.26	0.630
Trichloroethene	5,751	1.00	0.659	5.0	2.50	1.36	0.679
Tetrachloroethene	5,751	1.00	0.558	5.0	2.50	1.60	0.802
Lab ID: 0006132-15	**Sample Name:** IA-3 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,739	1.00	0.568	5.0	2.50	1.58	0.790
1,1-Dichloroethene	5,739	1.00	0.457	5.0	2.50	1.97	0.983
trans-1,2-Dichloroethene	5,739	1.00	0.710	5.0	2.50	1.26	0.632
cis-1,2-Dichloroethene	5,739	1.00	0.710	5.0	2.50	1.26	0.632
Trichloroethene	5,739	1.00	0.659	5.0	2.50	1.36	0.680
Tetrachloroethene	5,739	1.00	0.558	5.0	2.50	1.61	0.804
Lab ID: 0006132-16	**Sample Name:** IA-4 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,773	1.00	0.568	5.0	2.50	1.57	0.785
1,1-Dichloroethene	5,773	1.00	0.457	5.0	2.50	1.95	0.977
trans-1,2-Dichloroethene	5,773	1.00	0.710	5.0	2.50	1.26	0.628
cis-1,2-Dichloroethene	5,773	1.00	0.710	5.0	2.50	1.26	0.628
Trichloroethene	5,773	1.00	0.659	5.0	2.50	1.35	0.676
Tetrachloroethene	5,773	1.00	0.558	5.0	2.50	1.60	0.799

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Method Detection and Reporting Limit Calculations (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial (ng) LOQ	M Initial (ng) LOD	C Calculated (µg/m³) LOQ	C Calculated (µg/m³) LOD
Lab ID: 0006132-17	**Sample Name:** IA-5 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,771	1.00	0.568	5.0	2.50	1.57	0.785
1,1-Dichloroethene	5,771	1.00	0.457	5.0	2.50	1.95	0.977
trans-1,2-Dichloroethene	5,771	1.00	0.710	5.0	2.50	1.26	0.628
cis-1,2-Dichloroethene	5,771	1.00	0.710	5.0	2.50	1.26	0.628
Trichloroethene	5,771	1.00	0.659	5.0	2.50	1.35	0.677
Tetrachloroethene	5,771	1.00	0.558	5.0	2.50	1.60	0.800
Lab ID: 0006132-18	**Sample Name:** IA-6 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,770	1.00	0.568	5.0	2.50	1.57	0.786
1,1-Dichloroethene	5,770	1.00	0.457	5.0	2.50	1.96	0.978
trans-1,2-Dichloroethene	5,770	1.00	0.710	5.0	2.50	1.26	0.628
cis-1,2-Dichloroethene	5,770	1.00	0.710	5.0	2.50	1.26	0.628
Trichloroethene	5,770	1.00	0.659	5.0	2.50	1.35	0.677
Tetrachloroethene	5,770	1.00	0.558	5.0	2.50	1.60	0.800
Lab ID: 0006132-19	**Sample Name:** IA-7 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,745	1.00	0.568	5.0	2.50	1.58	0.789
1,1-Dichloroethene	5,745	1.00	0.457	5.0	2.50	1.96	0.982
trans-1,2-Dichloroethene	5,745	1.00	0.710	5.0	2.50	1.26	0.631
cis-1,2-Dichloroethene	5,745	1.00	0.710	5.0	2.50	1.26	0.631
Trichloroethene	5,745	1.00	0.659	5.0	2.50	1.36	0.680
Tetrachloroethene	5,745	1.00	0.558	5.0	2.50	1.61	0.803
Lab ID: 0006132-20	**Sample Name:** IA-8 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,747	1.00	0.568	5.0	2.50	1.58	0.789
1,1-Dichloroethene	5,747	1.00	0.457	5.0	2.50	1.96	0.981
trans-1,2-Dichloroethene	5,747	1.00	0.710	5.0	2.50	1.26	0.631
cis-1,2-Dichloroethene	5,747	1.00	0.710	5.0	2.50	1.26	0.631
Trichloroethene	5,747	1.00	0.659	5.0	2.50	1.36	0.679
Tetrachloroethene	5,747	1.00	0.558	5.0	2.50	1.61	0.803

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Method Detection and Reporting Limit Calculations (Concentration)

TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial (ng) LOQ	M Initial (ng) LOD	C Calculated (µg/m³) LOQ	C Calculated (µg/m³) LOD
Lab ID: 0006132-21	**Sample Name:** IA-9 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,792	1.00	0.568	5.0	2.50	1.57	0.783
1,1-Dichloroethene	5,792	1.00	0.457	5.0	2.50	1.95	0.974
trans-1,2-Dichloroethene	5,792	1.00	0.710	5.0	2.50	1.25	0.626
cis-1,2-Dichloroethene	5,792	1.00	0.710	5.0	2.50	1.25	0.626
Trichloroethene	5,792	1.00	0.659	5.0	2.50	1.35	0.674
Tetrachloroethene	5,792	1.00	0.558	5.0	2.50	1.59	0.797
Lab ID: 0006132-22	**Sample Name:** IA-10 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,743	1.00	0.568	5.0	2.50	1.58	0.789
1,1-Dichloroethene	5,743	1.00	0.457	5.0	2.50	1.96	0.982
trans-1,2-Dichloroethene	5,743	1.00	0.710	5.0	2.50	1.26	0.631
cis-1,2-Dichloroethene	5,743	1.00	0.710	5.0	2.50	1.26	0.631
Trichloroethene	5,743	1.00	0.659	5.0	2.50	1.36	0.680
Tetrachloroethene	5,743	1.00	0.558	5.0	2.50	1.61	0.804
Lab ID: 0006132-23	**Sample Name:** IA-11 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,732	1.00	0.568	5.0	2.50	1.58	0.791
1,1-Dichloroethene	5,732	1.00	0.457	5.0	2.50	1.97	0.984
trans-1,2-Dichloroethene	5,732	1.00	0.710	5.0	2.50	1.27	0.633
cis-1,2-Dichloroethene	5,732	1.00	0.710	5.0	2.50	1.27	0.633
Trichloroethene	5,732	1.00	0.659	5.0	2.50	1.36	0.681
Tetrachloroethene	5,732	1.00	0.558	5.0	2.50	1.61	0.805
Lab ID: 0006132-24	**Sample Name:** IA-12 (Passive 5 day)					**x̄ Temp (°C):** 8.00	
Vinyl Chloride	5,729	1.00	0.568	5.0	2.50	1.58	0.791
1,1-Dichloroethene	5,729	1.00	0.457	5.0	2.50	1.97	0.985
trans-1,2-Dichloroethene	5,729	1.00	0.710	5.0	2.50	1.27	0.633
cis-1,2-Dichloroethene	5,729	1.00	0.710	5.0	2.50	1.27	0.633
Trichloroethene	5,729	1.00	0.659	5.0	2.50	1.36	0.682
Tetrachloroethene	5,729	1.00	0.558	5.0	2.50	1.61	0.806

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Laboratory Certification List

Certification ID	Certification No.	Description	Expires	Project Required
Alaska CS-LAP	19-002	Alaska Department of Environmental Conservation	01/31/2023	
DoD-ELAP	L20-532-R1	United States Department of Defense Environmental Laboratory Accreditation	12/31/2022	
ISO/IEC 17025:2017	L20-532	General Requirements for the competence of Testing and Calibration Laboratories	12/31/2022	
NEFAP	72690/L20-533	TNI National Environmental Field Activities Program (NEFAP)	12/31/2022	
NY-NELAC	12097	New York Department of Health	04/01/2022	
Utah-NELAC	MD010912021-9	Utah Department of Health	12/31/2022	

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Qualifiers/Notes and Definitions

General Definitions:

DF	Dilution Factor
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
NA	Not Applicable
Q	Qualifier
RPD	Relative Percent Difference
RT	Retention Times in Minutes
RRT	Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm$0.06 control limits)
3σ	Uncertainty
∉	Compound not on scope of accreditation
+	values are outside method/contract required QC limits
∅	Compound not on scope of accreditation and analyzed with a one-point calibration

Sample/Sample Receipt Qualifiers and Notes:

J	Value reported below limit of quantitation (LOQ).
U	Analyte was not detected and is reported as less than the limit of detection (LOD). The LOD has been adjusted for any dilution or concentration of the sample.

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EnviroForensics	**Site Name:** Jageman Plating Co.	**Beacon Proposal:** 211108R01
N16W23390 Stone Ridge Dr, Suite G	**Site Location:** Manitowoc, WI	**Lab Work Order:** 0006132
Waukesha, WI 53188	**Project Manager:** Rob Hoverman	**Reported:** 02/10/2022

Sample Management Records

BEACON ENVIRONMENTAL

2203A Commerce Rd, Suite 1
Forest Hill, MD 21050, USA
1-410-838-8780
800-878-5510 Toll Free

PASSIVE AIR SAMPLING - SORBENT TUBE | CHAIN-OF-CUSTODY

Client Information			
Company: Enviroforensics	Project Manager: Rob Haverman	Client PO:	
Address: N16W23390 Stone Ridge Dr Suite G	Project Name: Jagemann Plating	Turn around time (check one): ☒ Normal ☐ Rush (specify) ____ days	
City / State / Zip: Waukesha, WI 53188	Location: Manitowoc, WI	Analysis: ☒ Method TO-17 ☐ Method 325	
Phone: 262-290-4001	Submitted by: R Brown		
	Email: rhaverman@enviroforensics.com		

Location ID	Tube ID	Start Date	Start Time	Stop Date	Stop Time	Aver Temp (C)	Target Compounds	INDOOR AIR	AMBIENT AIR	CRAWL SPACE	SEWER GAS
IA-1 (Passive 8hr)	G01650 97	1-10-22	930	1-10-22	1731	8=C	SEE WORK ORDER	X			
IA-2 (Passive 8hr)	G1065038		920		1730		FOR SHORT LIST				
IA-3 (Passive 8hr)	G1064249		940		1741						
IA-4 (Passive 8hr)	G0165010		847		1655						
IA-5 (Passive 8hr)	G0164632		845		1648						
IA-6 (Passive 8hr)	G0161948		840		1647						
IA-7 (Passive 8hr)	H0199697		946		1750						
IA-8 (Passive 8hr)	Mi 103031		936		1716						
IA-9 (Passive 8hr)	G0163216		857		1704						
IA-10 (Passive 8hr)	G0164105		954		1745						
IA-11 (Passive 8hr)	G0164574		1001		1750						
IA-12 (Passive 8hr)	G0161143	↓	1005	↓	1800	↓		↓			
IA-1 (Passive 5 day)	H0199689	1-10-22	929	1-14-22	915						
IA-2 (Passive 5DAY)	G0165092	↓	919	↓	910						
IA-3 (Passive 5DAY)	G0164555	↓	941	↓	920	↓					

Special Notes / Instructions:
SHORTLIST PER WORK ORDER

Relinquished by (signature): [signature]	Date / Time: 1/17/22 0700	Received by (signature): FEDEX	Date / Time:
Relinquished by (signature):	Date / Time:	Received by (signature): [signature]	Date / Time: 1/19/22 14:0
For Lab Use Only	Beacon Job No: 6132	Beacon Proposal: 211108R01	
Courier Name: FedEx	Shipment Condition: Good	Custody Seal Intact: ☐ Yes ☐ No ☒ n/a	Custody Seal No: —

Pg 1 of 2

BEACON ENVIRONMENTAL
2203A Commerce Rd. Suite 1
Forest Hill, MD 21050 USA
1-410-838-8780
800-878-5510 Toll Free

PASSIVE AIR SAMPLING – SORBENT TUBE | CHAIN-OF-CUSTODY

Client Information		Project Manager: R. Haverman	Client PO:	Turn-around time (check one): ☒ Normal ☐ Rush (specify) ____ days	Analysis: ☒ Method TO-17 ☐ Method 325
Company: ENVIROFORENSICS		Project Name: Jaguar Plating			
Address: N16W23390 STONE RIDGE DR		Location: Manitowoc WI			
City / State / Zip: WAUKESHA, WI 53188		Submitted by: R. Haverman			
Phone: 262-290-4001		Email: rhaverman@enviroforensics.com			

Location ID	Tube ID	Start Date	Start Time	Stop Date	Stop Time	Aver Temp (C)	Target Compounds	INDOOR AIR	AMBIENT AIR	CRAWL SPACE	SEWER GAS
IA-4 (PASSIVE 5 DAY)	G0165049	1-10-22	847	1-14-22	900	8°C	SHORT LIST PEP	X			
IA-5 (PASSIVE 5 DAY)	G0163708		845		856		WORK ORDER				
IA-6 (PASSIVE 5 DAY)	G0163205		840		850						
IA-7 (PASSIVE 5 DAY)	H0199691		945		930						
IA-8 (PASSIVE 5 DAY)	G1063255		937		921						
IA-9 (PASSIVE 5 DAY)	G0164141		856		928						
IA-9 (PASSIVE 5 DAY)	H0199687		955		938						
IA-10 (PASSIVE 5 DAY)	G0163090		1000		932						
IA-11 (PASSIVE 5 DAY)	G0163230		1006		935						

Special Notes / Instructions: SHORT LIST PEP WORK ORDER

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Relinquished by (signature)	Date / Time:	Received by (signature):	Date / Time:
For Lab Use Only	Beacon Job No:	Beacon Proposal: 211108R01	
Courier Name:	Shipment Condition:	Custody Seal Intact: ☐ Yes ☐ No ☐ n/a	Custody Seal No:

Pg ___ of ___