

From: Nicole L. LaPlant <nlaplant@releeinc.com>
Sent: Wednesday, June 19, 2019 4:33 PM
To: Beggs, Tauren R - DNR
Subject: RE: Status Update Jagemann Plating - BRRTS #02-36-555544

Hi Tauren –

Yes. This is what I found in the text of the SI Report :
Boring B-12, was installed at the Site. The boring was converted to Temporary Monitoring Well TW-1 (also known as TW-12).

I'm not sure why this was labeled as such. I suspect a labeling issue between field v. office, and lab report. It pre-dates me working on the project. I will make note to notate this on the table and figure so it's clear that it is the same point on our next submittal.

Thank you!

Nicole



Nicole L. LaPlant - Robert E. Lee & Associates, Inc.
920-662-9641 nlaplant@releeinc.com

From: Beggs, Tauren R - DNR [<mailto:Tauren.Beggs@wisconsin.gov>]
Sent: Wednesday, June 19, 2019 10:09 AM
To: Nicole L. LaPlant
Subject: RE: Status Update Jagemann Plating - BRRTS #02-36-555544

Hi Nicole,

Thanks for the update! In your tables, is TW-1 supposed to be TW-12? On the figure I only see a TW-12.

Regards,

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Tauren R. Beggs

Phone: (920) 662-5178

Tauren.Beggs@wisconsin.gov

From: Nicole L. LaPlant <nlaplant@releeinc.com>
Sent: Tuesday, June 18, 2019 12:17 PM
To: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>
Subject: FW: Status Update Jagemann Plating - BRRTS #02-36-555544

Hi,

I just noticed, I forgot to attach the groundwater metals results table. Here it is.

Nicole:)



Nicole L. LaPlant - Robert E. Lee & Associates, Inc.
920-662-9641 nlaplant@releeinc.com

From: Nicole L. LaPlant
Sent: Tuesday, June 18, 2019 11:51 AM
To: Beggs, Tauren R - DNR (Tauren.Beggs@wisconsin.gov)
Subject: FW: Status Update Jagemann Plating - BRRTS #02-36-55544

Hi Tauren,

Attached are the tabulated results of the March 2019 groundwater sampling event. The sampling was pushed to March because we were unable to access the wells in February due to the significant amounts of snow this past winter (snow piles covering several this year). As I had mentioned on the phone during a recent past conversation, the groundwater results look favorable. The two new wells (MW18 and MW19) installed near the garage to define the southwestern edge of the groundwater plume had no detection results of chlorinated solvents. In addition, contaminant concentrations in the older/existing wells and piezometers appear to be relatively similar or show a decrease since the last sampling event in December 2016.

We are scheduled to collect another round of samples tomorrow and Thursday (6/19 & 20). In our October 11, 2017, we proposed one to sample MW4 for dissolved arsenic and PZ4 for dissolved lead then re-evaluate whether they needed to be sample again during the next event. There were no detections of arsenic and lead in MW4 and PZ4, respectively; however, we plan to sample them again for the same parameter so there is a recent confirmation sampling given the gap in time since the prior sampling to March 2019. A supplemental investigation results letter report will be prepared and submitted for WDNR review with recommendations for a reduction in analysis on select monitoring wells for any subsequent wells, if needed.

Please let me know if you have any questions. Have a good day.
Nicole



Nicole L. LaPlant - Robert E. Lee & Associates, Inc.
920-662-9641 nlaplant@releeinc.com

From: Nicole L. LaPlant
Sent: Tuesday, January 29, 2019 3:48 PM
To: 'Beggs, Tauren R - DNR'
Subject: RE: Status Update Jagemann Plating - BRRTS #02-36-555544

Hi Tauren,

We complete the additional round of sub-slab vapor sampling from SS-1 and SS-2 on January 24, 2019. Attached are the tabulated results along with the respective lab reports and the locations. There were no detections of contaminants of concern in the vapor samples in excess of the VRSLs. We will inform Mr. Mike Jagemann and the tenant of the results. Let me know if there is a need to plan for subsequent round of vapor sampling in the future.

We had planned to complete the sub-slab vapor and groundwater sampling concurrently. However, due to the weather last week (snow storm on January 23rd), we had to postpone the groundwater sampling. It is tentatively scheduled for February 13th and 14th 2019. Please let me know if you have any questions.

Thank you,
Nicole



Nicole L. LaPlant - Robert E. Lee & Associates, Inc.
920-662-9641 nlaplant@releeinc.com

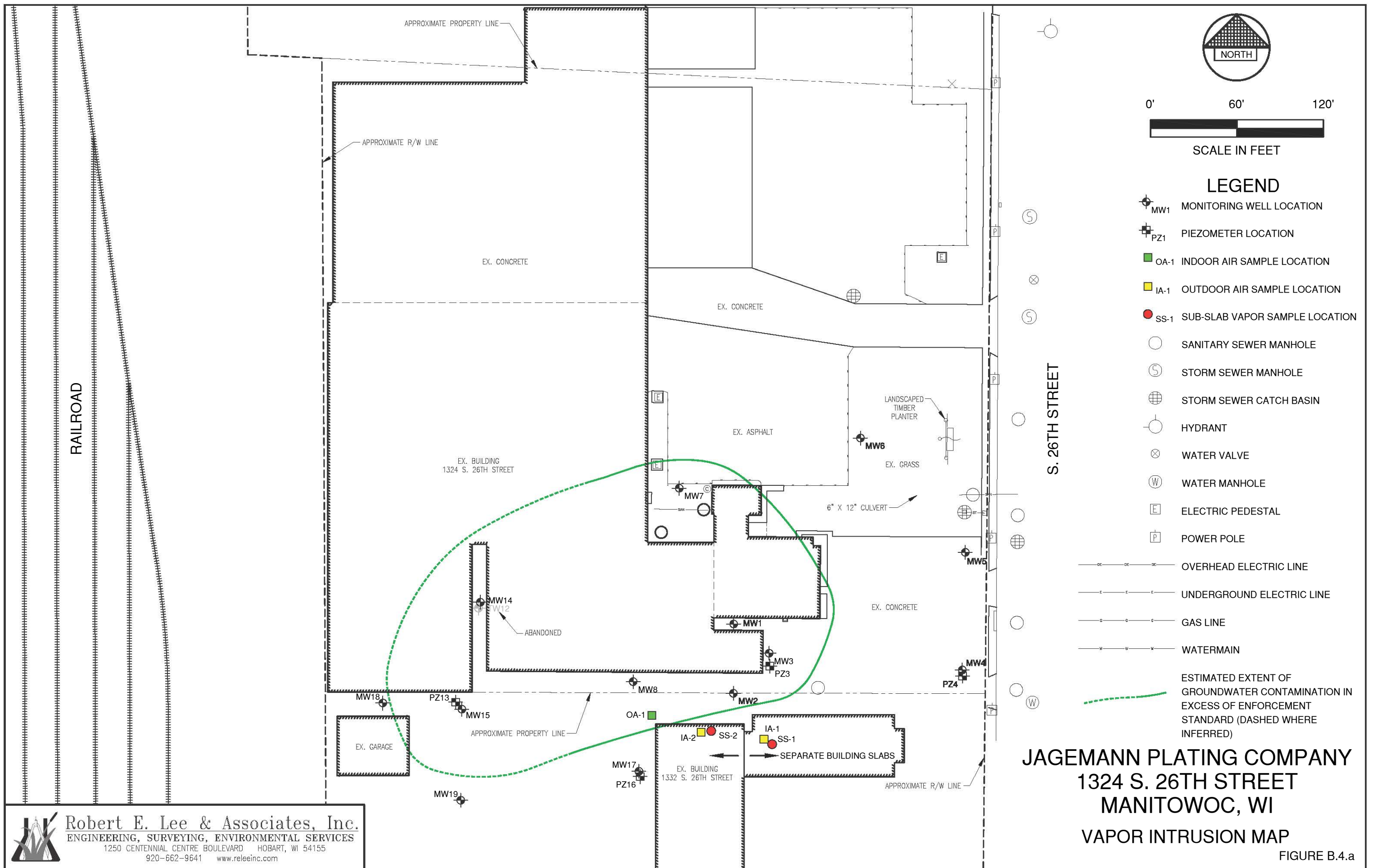


Table A.1.a - Groundwater Analytical Results
Jagemann Plating Co., Inc
1324 S 26th Street, Manitowoc, WI

Well ID	Date Sampled	Relevant and Significant Metals Analytical Results (µg/L)								
		Arsenic	Barium	Cadmium	Chromium	Hexavalent Chromium	Lead	Mercury	Selenium	Silver
NR 140 Preventive Action Limit (µg/l)		1	400	0.5	10	NE	1.5	0.2	10	10
NR 140 Enforcement Standard (µg/l)		10	2000	5	100	NE	15	2	50	50
MW-1	10/15/10	<u>7.3 J</u>	<u>1070</u>	<u>2.3 J</u>	1.1 J	<3.9	<1.7	<0.10	<2.0	<0.52
	06/15/11	<u>6.2 J</u>	316	<u>0.63 J</u>	1.4 J	---	<u>2.9 J</u>	<0.10	<1.9	<0.46
	09/29/11	<u>5.6 J</u>	397	0.23 J	<0.44	---	<u>2.4 J</u>	<0.10	<1.9	<0.46
	07/31/13	<0.6	233	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<u>1.9</u>	201	<0.5	<2.6	---	<0.7	<0.04	1.6 J	<51.5
	12/30/16	<0.6	105	<0.3	7.4	---	<0.6	<11	<1.1	<1.9
	03/28/19	<10.8	109	<1.3	<u>33.7</u>	---	<12.8	<0.084	<24.7	<3.2
MW-2	10/15/10	<u>2.6 J</u>	<u>422</u>	<0.26	<0.50	<3.9	<1.7	<0.10	<2.0	<0.52
	06/15/11	<u>3.5 J</u>	285	0.33 J	<0.44	---	<u>3.1 J</u>	<0.10	4.1 J	<0.46
	09/29/11	<u>6.0 J</u>	2.76	0.17 J	<0.44	---	<u>2.54 J</u>	<0.10	<1.9	<0.46
	07/31/13	<u>2.7</u>	179	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<u>1.5 J</u>	291	<0.5	<2.6	---	<u>12.2</u>	<0.04	<1	<51.5
	12/30/16	<u>1.1 J</u>	39.2	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
MW-3	10/15/10	<u>3.2 J</u>	385	<0.26	<0.50	<3.9	<u>2.1 J</u>	<0.10	<2.0	<0.52
	06/15/11	<u>3.2 J</u>	156	0.19 J	4.2 J	---	<2.4	<0.10	<1.9	<0.46
	09/29/11	<u>4.6 J</u>	190	<0.13	<0.44	---	<u>2.1 J</u>	<0.10	<1.9	<0.46
	07/31/13	<0.6	161	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<u>1.8 J</u>	105	<0.5	<2.6	---	<0.7	<0.04	<1	<51.5
	12/30/16	<0.6	101	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/28/19	<u>8.1 J</u>	86.2	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
MW-4	06/15/11	<u>2.9 J</u>	127	<0.13	<0.44	---	<2.4	<0.10	3.2 J	<0.46
	09/29/11	<u>4.4 J</u>	85.9	<0.13	<0.44	---	<1.5	<0.10	<1.9	<0.46
	07/31/13	<0.6	99.4	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	03/28/19	<5.4	---	---	---	---	---	---	---	---
TW-1	04/01/14	<u>1.3 J</u>	252	<0.5	<2.6	---	<0.7	<0.4	<1	<51.5
MW-5	06/15/11	<u>2.1 J</u>	157	0.24 J	<0.44	---	<2.4	<0.10	2.2 J	<0.46
	09/29/11	<u>4.7 J</u>	138	<0.13	<0.44	---	<u>2.5 J</u>	<0.10	<1.9	<0.46
	07/31/13	<0.6	137	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<0.6	129	<0.5	<2.6	---	<0.7	<0.04	<1	<51.5
	12/29/16	<0.6	122	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/28/19	<5.4	125	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
MW-6	06/15/11	<u>2.1 J</u>	181	0.28 J	<0.44	---	<u>2.9 J</u>	<0.10	5.3 J	<0.46
	09/29/11	<u>6.8 J</u>	178	0.13 J	<0.44	---	2.7 J	<0.10	<1.9	<0.46
	07/31/13	<0.6	162	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<0.6	186	<0.5	<2.6	---	<0.7	<0.04	<1	<51.5
MW-7	07/31/13	<0.6	250	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<0.6	193	<0.5	<2.6	---	<0.7	<0.04	<1	<51.5
	12/30/16	<0.6	190	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/28/19	<u>7.3 J</u>	191	<1.3	<2.5	---	<u>6.4 J</u>	<0.084	<u>14.0 J</u>	<3.2
MW-8	07/31/13	<0.6	54.3	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<0.6	45.4	<0.5	<2.6	---	<0.7	<0.04	<1	<51.5
	12/30/16	<0.6	27.8 J	<0.6	<1.4	---	<0.8	<0.11	<1.1	<3.8
	03/28/19	<u>9.3 J</u>	24.2	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
PZ-3	07/31/13	<0.6	47.3	<0.5	<2.6	---	<0.7	<0.04	<1	<10.3
	04/01/14	<0.6	29.5	<0.5	<2.6	---	<0.7	<0.04	<1	<51.5
	12/30/16	<0.6	26.9 J	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/28/19	<5.4	25.1	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
PZ-4	06/15/11	<2.0	37.8	<0.13	<0.44	---	<2.4	<0.10	2.5 J	<0.46
	09/29/11	<u>2.0 J</u>	32.1	<0.13	<0.44	---	<1.5	<0.10	<1.9	<0.46
	07/31/13	<0.6	34.9	<0.5	<2.6	---	0.8 J	<0.04	<1	<u>20.9 J</u>
	04/01/14	0.6 J	22.7	<0.5	<2.6	---	<u>10.7</u>	<0.04	<1	<51.5
	03/28/19	---	---	---	---	---	<6.4	---	---	---
SUMP-1	10/15/10	<133	125 J	<u>6620</u>	<u>1150000</u>	1290000	<173	0.13 J	<200	<51.7
	06/15/11	<17.6	113	<u>1970</u>	<u>358000</u>	---	<u>15.7 J</u>	<0.10	<22.5	<6.9
SUMP-2	10/15/10	<1.3	101	<u>36.2</u>	<u>1100</u>	1100	<1.7	<0.10	<2.0	<0.52
	06/15/11	<1.8	67	<u>8.2</u>	<u>520</u>	---	<1.3	<0.10	<2.2	<0.69
PZ-13	12/29/16	<0.6	24.7 J	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/28/19	<5.4	22.2	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
MW-14	12/30/16	<0.6	372	<u>0.7 J</u>	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/28/19	<5.4	102	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
MW-15	12/30/16	<u>1.9</u>	92.8	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/28/19	<u>8.2 J</u>	79.3	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
PZ-16	12/29/16	<u>8.7</u>	52.7	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/27/19	<u>6.2 J</u>	42.5	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
MW-17	12/29/16	0.8 J	109	<0.3	<0.7	---	<0.8	<0.11	<1.1	<1.9
	03/27/19	<5.4	108	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
MW-18	03/28/19	<u>11.2 J</u>	102	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2
MW-19	03/28/19	<5.4	173	<1.3	<2.5	---	<6.4	<0.084	<12.3	<3.2

Key:
J - Analyte detected between the Laboratory Limit of Detection and Laboratory Limit of Quantitation
NE - Not established by Chapter NR 140 Wis. Adm. Code
µg/L - Micrograms per liter
--- - Not analyzed
15 - Exceeds Chapter NR 140 Enforcement Standard
1.5 - Exceeds Chapter NR 140 Preventive Action Limit

Table A.1.b - Groundwater Analytical Results
Jagemann Plating Co., Inc
1324 S 26th Street, Manitowoc, WI

Parameter	NR 140 ES	NR 140 PAL	MW-1						MW-2						MW-3							
			10/15/2010	6/15/2011	9/29/2011	7/31/2013	4/1/2014	12/30/2016	3/28/2019	10/15/2010	6/15/2011	9/29/2011	7/31/2013	4/1/2014	12/30/2016	10/15/2010	6/15/2011	9/29/2011	7/31/2013	4/1/2014	12/30/2016	3/28/2019
VOCs (µg/L)																						
1,1,1,2-Tetrachloroethane	70	7	< 18.4	< 9.2	< 18.4	< 16.5	< 3.3	< 4.8	< 2.7	< 0.92	< 0.92	< 0.92	< 0.33	< 0.33	< 0.48	< 3.7	< 0.92	< 1.8	< 0.33	< 0.33	< 0.48	< 0.27
1,1,1-Trichloroethane	200	40	< 18.0	< 9.0	< 18.0	< 16.5	< 3.3	< 8.4	< 2.4	< 0.90	< 0.90	< 0.90	< 0.33	< 0.33	< 0.84	< 3.6	< 0.90	< 1.8	< 0.33	< 0.33	< 0.84	< 0.24
1,1,2,2-Tetrachloroethane	0.2	0.02	< 4.0	< 2.0	< 4.0	< 22.5	< 4.5	< 5.2	< 2.8	< 0.20	< 0.20	< 0.20	< 0.45	< 0.45	< 0.52	< 0.80	< 0.20	< 0.40	< 0.45	< 0.45	< 0.52	< 0.28
1,1,2-Trichloroethane	5	0.5	< 8.4	< 4.2	< 8.4	< 17	< 3.4	< 4.8	< 5.5	< 0.42	< 0.42	< 0.42	< 0.34	< 0.34	< 0.48	< 1.7	< 0.42	< 0.84	< 0.34	< 0.34	< 0.48	< 0.55
1,1-Dichloroethane	850	85	< 15.0	< 7.5	< 15.0	< 15	< 3	< 11	3.7 J	< 0.75	< 0.75	< 0.75	< 0.3	< 0.3	< 1.1	< 3.0	< 0.75	< 1.5	< 0.3	< 0.3	< 1.1	< 0.27
1,1-Dichloroethane	7	0.7	13.8 J	14.6	< 11.4	< 20	25.9	< 6.5	17.5	6.9	9.9	5.1	1.7	2.28	< 0.65	2.3 J	1.4	1.6 J	2.48	2.27	1.22 J	1.0
1,1-Dichloropropene	NE	NE	< 15.0	< 7.5	< 15.0	---	---	---	< 5.4	< 0.75	< 0.75	< 0.75	---	---	---	< 3.0	< 0.75	< 1.5	---	---	---	< 0.54
1,2,3-Trichlorobenzene	NE	NE	< 14.8	< 7.4	< 14.8	< 90	< 18	< 27	< 6.3	< 0.74	< 0.74	< 0.74	< 1.8	< 1.8	< 2.7	< 3.0	< 0.74	< 1.5	< 1.8	< 1.8	< 2.7	< 0.63
1,2,3-Trichloropropane	60	12	< 19.8	< 9.9	< 19.8	---	---	---	< 5.9	< 0.99	< 0.99	< 0.99	---	---	---	< 4.0	< 0.99	< 2.0	---	---	---	< 0.59
1,2,4-Trichlorobenzene	70	14	< 19.4	< 9.7	< 19.4	< 49	< 9.8	< 17	< 9.5	< 0.97	< 0.97	< 0.97	< 0.98	< 0.98	< 1.7	< 3.9	< 0.97	< 1.9	< 0.98	< 0.98	< 1.7	< 0.95
1,2,4-Trimethylbenzene	480*	96*	< 19.4	< 9.7	< 19.4	< 110	< 22	< 16	< 8.4	< 0.97	< 0.97	< 0.97	< 2.2	< 2.2	< 1.6	< 3.9	< 0.97	< 1.9	< 2.2	< 2.2	< 1.6	< 0.84
1,2-Dibromo-3-chloropropane	0.2	0.02	< 33.6	< 16.8	< 33.6	< 44	< 8.8	< 14	< 17.6	< 1.7	< 1.7	< 1.7	< 0.88	< 0.88	< 1.4	< 6.7	< 1.7	< 3.4	< 0.88	< 0.88	< 1.4	< 1.8
1,2-Dibromoethane (EDB)	0.05	0.005	< 11.2	< 5.6	< 11.2	< 22	< 4.4	< 6.3	< 8.3	< 0.56	< 0.56	< 0.56	< 0.44	< 0.44	< 0.63	< 2.2	< 0.56	< 1.1	< 0.44	< 0.44	< 0.63	< 0.83
1,2-Dichlorobenzene	600	60	< 16.6	< 8.3	< 16.6	< 18	< 3.6	< 4.6	< 7.1	< 0.83	< 0.83	< 0.83	< 0.36	< 0.36	< 0.46	< 3.3	< 0.83	< 1.7	< 0.36	< 0.36	< 0.46	< 0.71
1,2-Dichloroethane	5	0.5	< 7.2	< 3.6	< 7.2	< 20.5	< 4.1	< 4.8	< 2.8	< 0.36	< 0.36	< 0.36	< 0.41	< 0.41	< 0.48	< 1.4	< 0.36	< 0.72	< 0.41	< 0.41	< 0.48	< 0.28
1,2-Dichloropropane	5	0.5	< 9.8	< 4.9	< 9.8	< 16	< 3.2	< 4.3	< 2.8	< 0.49	< 0.49	< 0.49	< 0.32	< 0.32	< 0.43	< 2.0	< 0.49	< 0.98	< 0.32	< 0.32	< 0.43	< 0.28
1,3,5-Trimethylbenzene	480*	96*	< 16.6	< 8.3	< 16.6	< 70	< 14	< 15	< 8.7	< 0.83	< 0.83	< 0.83	< 1.4	< 1.4	< 1.5	< 3.3	< 0.83	< 1.7	< 1.4	< 1.4	< 1.5	< 0.87
1,3-Dichlorobenzene	600	120	< 17.4	< 8.7	< 17.4	< 14	< 2.8	< 5.2	< 6.3	< 0.87	< 0.87	< 0.87	< 0.28	< 0.28	< 0.52	< 3.5	< 0.87	< 1.7	< 0.28	< 0.28	< 0.52	< 0.63
1,3-Dichloropropane	NE	NE	< 12.2	< 6.1	< 12.2	< 16.5	< 3.3	< 4.2	< 8.3	< 0.61	< 0.61	< 0.61	< 0.33	< 0.33	< 0.42	< 2.4	< 0.61	< 1.2	< 0.33	< 0.33	< 0.42	< 0.83
1,4-Dichlorobenzene	75	15	< 19.0	< 9.5	< 19.0	< 15	< 3	< 4.9	< 9.4	< 0.95	< 0.95	< 0.95	< 0.3	< 0.3	< 0.95	< 3.8	< 0.95	< 1.9	< 0.3	< 0.3	< 0.95	< 0.94
2,2-Dichloropropane	NE	NE	< 12.4	< 6.2	< 12.4	< 18	< 3.6	< 3.1	< 22.7	< 0.62	< 0.62	< 0.62	< 0.36	< 0.36	< 3.1	< 2.5	< 0.62	< 1.2	< 0.36	< 0.36	< 3.1	< 2.3
2-Chlorotoluene	NE	NE	< 17.0	< 8.5	< 17.0	< 10.5	< 2.1	< 4	< 9.3	< 0.85	< 0.85	< 0.85	< 0.21	< 0.21	< 0.4	< 3.4	< 0.85	< 1.7	< 0.21	< 0.21	< 0.4	< 0.93
4-Chlorotoluene	NE	NE	< 14.8	< 7.4	< 14.8	< 10.5	< 2.1	< 6.3	< 7.6	< 0.74	< 0.74	< 0.74	< 0.21	< 0.21	< 0.63	< 3.0	< 0.74	< 1.5	< 0.21	< 0.21	< 0.63	< 0.76
Benzene	5	0.5	< 8.2	< 4.1	< 8.2	< 12	< 2.4	< 4.4	< 2.5	< 0.41	< 0.41	< 0.41	< 0.24	< 0.24	< 0.44	< 1.6	< 0.41	< 0.82	< 0.24	< 0.24	< 0.44	< 0.25
Bromobenzene	NE	NE	< 16.4	< 8.2	< 16.4	< 16	< 3.2	< 4.8	< 2.4	< 0.82	< 0.82	< 0.82	< 0.32	< 0.32	< 0.48	< 3.3	< 0.82	< 1.6	< 0.32	< 0.32	< 0.48	< 0.24
Bromochloromethane	NE	NE	< 19.4	< 9.7	< 19.4	---	---	---	< 3.6	< 0.97	< 0.97	< 0.97	---	---	---	< 3.9	< 0.97	< 1.9	---	---	---	< 0.36
Bromodichloromethane	0.6	0.06	< 11.2	< 5.6	< 11.2	< 18.5	< 3.7	< 4.6	< 3.6	< 0.56	< 0.56	< 0.56	< 0.37	< 0.37	< 0.46	< 2.2	< 0.56	< 1.1	< 0.37	< 0.37	< 0.46	< 0.36
Bromoform	4.4	0.44	< 18.8	< 9.4	< 18.8	< 17.5	< 3.5	< 4.6	< 39.7	< 0.94	< 0.94	< 0.94	< 0.35	< 0.35	< 0.46	< 3.8	< 0.94	< 1.9	< 0.35	< 0.35	< 0.46	< 4.0
Bromomethane	10	1	< 18.2	< 9.1	< 18.2	---	---	---	< 9.7	< 0.91	< 0.91	< 0.91	---	---	---	< 3.6	< 0.91	< 1.8	---	---	---	< 0.97
Carbon Tetrachloride	5	0.5	< 9.8	< 4.9	< 9.8	< 16.5	< 3.3	< 5.1	< 1.7	< 0.49	< 0.49	< 0.49	< 0.33	< 0.33	< 0.51	< 2.0	< 0.49	< 0.98	< 0.33	< 0.33	< 0.51	< 0.17
Chlorobenzene	NE	NE	< 8.2	< 4.1	< 8.2	< 12	< 2.4	< 4.6	< 7.1	< 0.41	< 0.41	< 0.41	< 0.24	< 0.24	< 0.46	< 1.6	< 0.41	< 0.82	< 0.24	< 0.24	< 0.46	< 0.71
Chloroethane	400	80	< 19.4	< 9.7	< 19.4	< 31.5	< 6.3	< 6.5	< 13.4	< 0.97	< 0.97	< 0.97	< 0.63	< 0.63	< 0.65	< 3.9	< 0.97	< 1.9	< 0.63	< 0.63	< 0.65	< 1.3
Chloroform	6	0.6	< 26.0	< 13.0	< 26.0	< 14	< 2.8	< 4.3	< 12.7	< 1.3	< 1.3	< 1.3	< 0.28	< 0.28	< 0.43	< 5.2	< 1.3	< 2.6	< 0.28	< 0.28	< 0.43	< 1.3
Chloromethane	30	3	< 4.8	< 2.4	< 4.8	< 40.5	< 8.1	< 19	< 21.9	< 0.24	< 0.24	< 0.24	< 0.81	< 0.81	< 1.9	< 9.6	< 0.24	< 0.48	< 0.81	< 0.81	< 1.9	< 2.2
Dibromochloromethane	60	6	< 16.2	< 8.1	< 16.2	< 11	< 2.2	< 4.5	< 26.0	< 0.81	< 0.81	< 0.81	< 0.22	< 0.22	< 0.45	< 3.2	< 0.81	< 1.6	< 0.22	< 0.22	< 0.45	< 2.6
Dibromomethane	NE	NE	< 12.0	< 6.0	< 12.0	---	---	---	< 9.4	< 0.60	< 0.60	< 0.60	---	---	---	< 2.4	< 0.60	< 1.2	---	---	---	< 0.94
Dichlorodifluoromethane	NE	NE	< 19.8	< 9.9	< 19.8	< 22	< 4.4	< 8.7	< 5.0	10.5	17.2	21.0	13.2	13.5	1.53 J	8.5	8.6	14.9	10.7	14.2	9.9	5.3
Diisopropyl ether	NE	NE	< 15.2	< 7.6	< 15.2	< 11.5	< 2.3	< 4.4	< 18.9	< 0.76	< 0.76	< 0.76	< 0.23	< 0.23	< 0.44	< 3.0	< 0.76	< 1.5	< 0.23	< 0.23	< 0.44	< 1.9
Ethylbenzene	700	140	< 10.8	< 5.4	< 10.8	< 27.5	< 5.5	< 7.1	< 2.2	< 0.54	< 0.54	< 0.54	< 0.55	< 0.55	< 0.71	< 2.2	< 0.54	< 1.1	< 0.55	< 0.55	< 0.71	< 0.22
Hexachloro-1,3-butadiene	NE	NE	< 13.4	< 6.7	< 13.4	< 75	< 15	< 22	< 11.8	< 0.67	< 0.67	< 0.67	< 1.5	< 1.5	< 2.2	< 2.7	< 0.67	< 1.3	< 1.5	< 1.5	< 2.2	< 1.2
Isopropylbenzene	NE	NE	< 11.8	< 5.9	< 11.8	< 15	< 3	< 8.2	< 3.9	< 0.59	< 0.59	< 0.59	< 0.3	< 0.3	< 0.82	< 2.4	< 0.59	< 1.2	< 0.3	< 0.3	< 0.82	< 0.39
Methyl-tert-butyl ether (MTBE)	60	12	< 12.2	< 6.1	< 12.2	< 11.5	< 2.3	< 11	< 12.5	< 0.61	< 0.61	< 0.61	< 0.23	< 0.23	< 1.1	< 2.4	< 0.61	< 1.2	< 0.23	< 0.23	< 1.1	< 1.2
Methylene Chloride	5	0.5	< 8.6	< 4.3	< 8.6	< 25	< 5	<														

Table A.1.b - Groundwater Analytical Results
Jagemann Plating Co., Inc
1324 S 26th Street, Manitowoc, WI

Parameter	NR 140 ES	NR 140 PAL	MW-4			MW-5					MW-6				MW-7				
			6/15/2011	9/29/2011	7/31/2013	6/15/2011	9/29/2011	7/31/2013	4/1/2014	12/29/2016	3/28/2019	6/15/2011	9/29/2011	7/31/2013	4/1/2014	7/31/2013	4/1/2014	12/30/2016	3/28/2019
VOCs (µg/L)																			
1,1,1,2-Tetrachloroethane	70	7	< 0.92	< 0.92	<0.33	< 0.92	< 0.92	<0.33	<0.33	<0.48	<0.27	< 0.92	< 0.92	<0.33	<0.33	<0.33	<0.33	<0.48	<0.27
1,1,1-Trichloroethane	200	40	< 0.90	< 0.90	<0.33	< 0.90	< 0.90	<0.33	<0.33	<0.84	<0.24	< 0.90	< 0.90	<0.33	<0.33	<0.33	<0.33	<0.84	<0.24
1,1,2,2-Tetrachloroethane	0.2	0.02	< 0.20	< 0.20	<0.45	< 0.20	< 0.20	<0.45	<0.45	<0.52	<0.28	< 0.20	< 0.20	<0.45	<0.45	<0.45	<0.45	<0.52	<0.28
1,1,2-Trichloroethane	5	0.5	< 0.42	< 0.42	<0.34	< 0.42	< 0.42	<0.34	<0.34	<0.48	<0.55	< 0.42	< 0.42	<0.34	<0.34	<0.34	<0.34	<0.48	<0.55
1,1-Dichloroethane	850	85	< 0.75	< 0.75	<0.3	< 0.75	< 0.75	<0.3	<0.3	<1.1	<0.27	< 0.75	< 0.75	<0.3	<0.3	<0.3	<0.3	<1.1	<0.27
1,1-Dichloroethene	7	0.7	< 0.57	< 0.57	<0.4	< 0.57	< 0.57	<0.4	<0.4	<0.65	<0.24	< 0.57	< 0.57	<0.4	<0.4	<0.4	<0.4	<0.65	<0.24
1,1-Dichloropropene	NE	NE	< 0.75	< 0.75	---	< 0.75	< 0.75	---	---	---	<0.54	< 0.75	< 0.75	---	---	---	---	<0.54	
1,2,3-Trichlorobenzene	NE	NE	< 0.74	< 0.74	<1.8	< 0.74	< 0.74	<1.8	<1.8	<2.7	<0.63	< 0.74	< 0.74	<1.8	<1.8	<1.8	<1.8	<2.7	<0.63
1,2,3-Trichloropropane	60	12	< 0.99	< 0.99	---	< 0.99	< 0.99	---	---	---	<0.59	< 0.99	< 0.99	---	---	---	---	<0.59	
1,2,4-Trichlorobenzene	70	14	< 0.97	< 0.97	<0.98	< 0.97	< 0.97	<0.98	<0.98	<1.7	<0.95	< 0.97	< 0.97	<0.98	<0.98	<0.98	<0.98	<1.7	<0.95
1,2,4-Trimethylbenzene	480*	96*	< 0.97	< 0.97	<2.2	< 0.97	< 0.97	<2.2	<2.2	<1.6	<0.84	< 0.97	< 0.97	<2.2	<2.2	<2.2	<2.2	<1.6	<0.84
1,2-Dibromo-3-chloropropane	0.2	0.02	< 1.7	< 1.7	<0.88	< 1.7	< 1.7	<0.88	<0.88	<1.4	<1.8	< 1.7	< 1.7	<0.88	<0.88	<0.88	<0.88	<1.4	<1.8
1,2-Dibromoethane (EDB)	0.05	0.005	< 0.56	< 0.56	<0.44	< 0.56	< 0.56	<0.44	<0.44	<0.63	<0.83	< 0.56	< 0.56	<0.44	<0.44	<0.44	<0.44	<0.63	<0.83
1,2-Dichlorobenzene	600	60	< 0.83	< 0.83	<0.36	< 0.83	< 0.83	<0.36	<0.36	<0.46	<0.71	< 0.83	< 0.83	<0.36	<0.36	<0.36	<0.36	<0.46	<0.71
1,2-Dichloroethane	5	0.5	< 0.36	< 0.36	<0.41	< 0.36	< 0.36	<0.41	<0.41	<0.48	<0.36	< 0.36	< 0.36	<0.41	<0.41	<0.41	<0.41	<0.48	<0.36
1,2-Dichloropropane	5	0.5	< 0.49	< 0.49	<0.32	< 0.49	< 0.49	<0.32	<0.32	<0.43	<0.28	< 0.49	< 0.49	<0.32	<0.32	<0.32	<0.32	<0.43	<0.28
1,3,5-Trimethylbenzene	480*	96*	< 0.83	< 0.83	<1.4	< 0.83	< 0.83	<1.4	<1.4	<1.5	<0.87	< 0.83	< 0.83	<1.4	<1.4	<1.4	<1.4	<1.5	<0.87
1,3-Dichlorobenzene	600	120	< 0.87	< 0.87	<0.28	< 0.87	< 0.87	<0.28	<0.28	<0.52	<0.63	< 0.87	< 0.87	<0.28	<0.28	<0.28	<0.28	<0.52	<0.63
1,3-Dichloropropane	NE	NE	< 0.61	< 0.61	<0.33	< 0.61	< 0.61	<0.33	<0.33	<0.42	<0.83	< 0.61	< 0.61	<0.33	<0.33	<0.33	<0.33	<0.42	<0.83
1,4-Dichlorobenzene	75	15	< 0.95	< 0.95	<0.3	< 0.95	< 0.95	<0.3	<0.3	<0.49	<0.94	< 0.95	< 0.95	<0.3	<0.3	<0.3	<0.3	<0.49	<0.94
2,2-Dichloropropane	NE	NE	< 0.62	< 0.62	<0.36	< 0.62	< 0.62	<0.36	<0.36	<3.1	<2.3	< 0.62	< 0.62	<0.36	<0.36	<0.36	<0.36	<3.1	<2.3
2-Chlorotoluene	NE	NE	< 0.85	< 0.85	<0.21	< 0.85	< 0.85	<0.21	<0.21	<0.4	<0.93	< 0.85	< 0.85	<0.21	<0.21	<0.21	<0.21	<0.4	<0.93
4-Chlorotoluene	NE	NE	< 0.74	< 0.74	<0.21	< 0.74	< 0.74	<0.21	<0.21	<0.63	<0.76	< 0.74	< 0.74	<0.21	<0.21	<0.21	<0.21	<0.63	<0.76
Benzene	5	0.5	< 0.41	< 0.41	<0.24	< 0.41	< 0.41	<0.24	<0.24	<0.44	<0.25	< 0.41	< 0.41	<0.24	<0.24	<0.24	<0.24	<0.44	<0.25
Bromobenzene	NE	NE	< 0.82	< 0.82	<0.32	< 0.82	< 0.82	<0.32	<0.32	<0.48	<0.24	< 0.82	< 0.82	<0.32	<0.32	<0.32	<0.32	<0.48	<0.24
Bromochloromethane	NE	NE	< 0.97	< 0.97	---	< 0.97	< 0.97	---	---	---	<0.36	< 0.97	< 0.97	---	---	---	---	<0.36	
Bromodichloromethane	0.6	0.06	< 0.56	< 0.56	<0.37	< 0.56	< 0.56	<0.37	<0.37	<0.46	<0.36	< 0.56	< 0.56	<0.37	<0.37	<0.37	<0.37	<0.46	<0.36
Bromoform	4.4	0.44	< 0.94	< 0.94	<0.35	< 0.94	< 0.94	<0.35	<0.35	<0.46	<4.0	< 0.94	< 0.94	<0.35	<0.35	<0.35	<0.35	<0.46	<4.0
Bromomethane	10	1	< 0.91	< 0.91	---	< 0.91	< 0.91	---	---	---	<0.97	< 0.91	< 0.91	---	---	---	---	<0.97	
Carbon Tetrachloride	5	0.5	< 0.49	< 0.49	<0.33	< 0.49	< 0.49	<0.33	<0.33	<0.51	<0.17	< 0.49	< 0.49	<0.33	<0.33	<0.33	<0.33	<0.51	<0.17
Chlorobenzene	NE	NE	< 0.41	< 0.41	<0.24	< 0.41	< 0.41	<0.24	<0.24	<0.46	<0.71	< 0.41	< 0.41	<0.24	<0.24	<0.24	<0.24	<0.46	<0.71
Chloroethane	400	80	< 0.97	< 0.97	<0.63	< 0.97	< 0.97	<0.63	<0.63	<0.65	<1.3	< 0.97	< 0.97	<0.63	<0.63	<0.63	<0.63	<0.65	<1.3
Chloroform	6	0.6	< 1.3	< 1.3	<0.28	< 1.3	< 1.3	<0.28	<0.28	<0.43	<1.3	< 1.3	< 1.3	<0.28	<0.28	<0.28	<0.28	<0.43	<1.3
Chloromethane	30	3	< 0.24	< 0.24	<0.81	< 0.24	< 0.24	<0.81	<0.81	<1.9	<2.2	< 0.24	< 0.24	<0.81	<0.81	<0.81	<0.81	<1.9	<2.2
Dibromochloromethane	60	6	< 0.81	< 0.81	<0.22	< 0.81	< 0.81	<0.22	<0.22	<0.45	<2.6	< 0.81	< 0.81	<0.22	<0.22	<0.22	<0.22	<0.45	<2.6
Dibromomethane	NE	NE	< 0.60	< 0.60	---	< 0.60	< 0.60	---	---	---	<0.94	< 0.60	< 0.60	---	---	---	---	<0.94	
Dichlorodifluoromethane	NE	NE	< 0.99	< 0.99	<0.44	< 0.99	< 0.99	<0.44	<0.44	<0.87	<0.50	< 0.99	< 0.99	<0.44	<0.44	1.06 J	1.46	1.74 J	1.9 J
Diisopropyl ether	NE	NE	< 0.76	< 0.76	<0.23	< 0.76	< 0.76	<0.23	<0.23	<0.44	<1.9	< 0.76	< 0.76	<0.23	<0.23	<0.23	<0.23	<0.44	<1.9
Ethylbenzene	700	140	< 0.54	< 0.54	<0.55	< 0.54	< 0.54	<0.55	<0.55	<0.71	<0.22	< 0.54	< 0.54	<0.55	<0.55	<0.55	<0.55	<0.71	<0.22
Hexachloro-1,3-butadiene	NE	NE	< 0.67	< 0.67	<1.5	< 0.67	< 0.67	<1.5	<1.5	<2.2	<1.2	< 0.67	< 0.67	<1.5	<1.5	<1.5	<1.5	<2.2	<1.2
Isopropylbenzene	NE	NE	< 0.59	< 0.59	<0.3	< 0.59	< 0.59	<0.3	<0.3	<0.82	<0.39	< 0.59	< 0.59	<0.3	<0.3	<0.3	<0.3	<0.82	<0.39
Methyl-tert-butyl ether (MTBE)	60	12	< 0.61	< 0.61	<0.23	< 0.61	< 0.61	<0.23	<0.23	<1.1	<1.2	< 0.61	< 0.61	<0.23	<0.23	<0.23	<0.23	<1.1	<1.2
Methylene Chloride	5	0.5	< 0.43	< 0.43	<0.5	< 0.43	< 0.43	<0.5	<0.5	<1.3	<0.58	0.62 J	< 0.43	< 0.43	<0.5	<0.5	<0.5	<1.3	<0.58
Naphthalene	100	10	< 0.89	< 0.89	<1.7	< 0.89	< 0.89	<1.7	<1.7	<1.6	<1.2	< 0.89	< 0.89	<1.7	<1.7	<1.7	<1.7	<1.6	<1.2
Styrene	100	10	< 0.86	< 0.86	---	< 0.86	< 0.86	---	---	---	<0.47	< 0.86	< 0.86	---	---	---	---	<0.47	
Tetrachloroethene	5	0.5	< 0.45	< 0.45	<0.33	< 0.45	< 0.45	<0.33	<0.33	<0.49	<0.33	< 0.45	< 0.45	<0.33	<0.33	<0.33	<0.33	<0.49	<0.33
Toluene	800	160	< 0.67	< 0.67	<0.69	< 0.67	< 0.67	<0.69	<0.69	<0.44	<0.17	< 0.67	< 0.67	<0.69	<0.69	<0.69	<0.69	<0.44	<0.17
Trichloroethene	5	0.5	< 0.48	< 0.48	<0.33	< 0.48	< 0.48	<0.33	<0.33	<0.47	<0.26	< 0.48	< 0.48	<0.33	<0.33	0.81 J	0.34 J	5.8	0.38 J
Trichlorofluoromethane	3490	698	< 0.79	< 0.79	<0.71	< 0.79	< 0.79	<0.71	<0.71	<0.87	<0.21	< 0.79	< 0.79	<0.71	<0.71	<0.71	<0.71	<0.87	<0.21
Vinyl chloride	0.2	0.02	< 0.18	< 0.18	<0.18	< 0.18	< 0.18	<0.18	<0.18	<0.17	<0.17	< 0.18	< 0.18	<0.18	<0.18	<0.18	<0.18	<0.17	<0.17

Table A.1.b - Groundwater Analytical Results
Jagemann Plating Co., Inc
1324 S 26th Street, Manitowoc, WI

Parameter	NR 140 ES	NR 140 PAL	MW-8				TW-1			PZ-3				PZ-4			
			7/31/2013	4/1/2014	12/30/2016	3/28/2019	7/31/2013	9/26/2013	4/1/2014	7/31/2013	4/1/2014	12/30/2016	3/28/2019	6/15/2011	9/29/2011	7/31/2013	4/1/2014
VOCs (µg/L)																	
1,1,1,2-Tetrachloroethane	70	7	<16.5	<3.3	<4.8	<2.7	<1650	<330	<330	<0.33	<0.33	<0.48	<0.27	<0.92	<0.92	<0.33	<0.33
1,1,1-Trichloroethane	200	40	<16.5	<3.3	<8.4	<2.4	<1650	<330	<330	<0.33	<0.33	<0.84	<0.24	<0.90	<0.90	<0.33	<0.33
1,1,2,2-Tetrachloroethane	0.2	0.02	<22.5	<4.5	<5.2	<2.8	<2250	<450	<450	<0.45	<0.45	<0.52	<0.28	<0.20	<0.20	<0.45	<0.45
1,1,2-Trichloroethane	5	0.5	<17	<3.4	<4.8	<5.5	<1700	<340	<340	<0.34	<0.34	<0.48	<0.55	<0.42	<0.42	<0.34	<0.34
1,1-Dichloroethane	850	85	<15	<3	<11	<2.7	<1500	<300	<300	<0.3	<0.3	<1.1	<0.27	<0.75	<0.75	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<20	4.3 J	7.3 J	5.5 J	<2000	<400	<400	<0.4	<0.4	<0.65	<0.24	<0.57	<0.57	<0.4	<0.4
1,1-Dichloropropene	NE	NE	---	---	---	<5.4	---	---	---	---	---	---	<0.54	<0.75	<0.75	---	---
1,2,3-Trichlorobenzene	NE	NE	<90	<18	<27	<6.3	<9000	<1800	<1800	<1.8	<1.8	<2.7	<0.63	<0.74	<0.74	<1.8	<1.8
1,2,3-Trichloropropane	60	12	---	---	---	<5.9	---	---	---	---	---	---	<0.59	<0.99	<0.99	---	---
1,2,4-Trichlorobenzene	70	14	<49	<9.8	<4.9	<9.5	<4900	<980	<980	<0.98	<0.98	<1.7	<0.95	<0.97	<0.97	<0.98	<0.98
1,2,4-Trimethylbenzene	480*	96*	<110	<22	<16	<8.4	<11000	<2200	<2200	<2.2	<2.2	<1.6	<0.84	<0.97	<0.97	<2.2	<2.2
1,2-Dibromo-3-chloropropane	0.2	0.02	<44	<8.8	<14	<17.6	<4400	<880	<880	<0.88	<0.88	<1.4	<1.8	<1.7	<1.7	<0.88	<0.88
1,2-Dibromoethane (EDB)	0.05	0.005	<22	<4.4	<6.3	<8.3	<2200	<440	<440	<0.44	<0.44	<0.63	<0.83	<0.56	<0.56	<0.44	<0.44
1,2-Dichlorobenzene	600	60	<18	<3.6	<4.6	<7.1	<1800	<360	<360	<0.36	<0.36	<0.46	<0.71	<0.83	<0.83	<0.36	<0.36
1,2-Dichloroethane	5	0.5	<20.5	<4.1	<4.8	<2.8	<410	<410	<410	<0.41	<0.41	<0.48	<0.28	<0.36	<0.36	<0.41	<0.41
1,2-Dichloropropane	5	0.5	<16	<3.2	<4.3	<2.8	<1600	<320	<320	<0.32	<0.32	<0.43	<0.28	<0.49	<0.49	<0.32	<0.32
1,3,5-Trimethylbenzene	480*	96*	<70	<14	<15	<8.7	<7000	<1400	<1400	<1.4	<1.4	<1.5	<0.87	<0.83	<0.83	<1.4	<1.4
1,3-Dichlorobenzene	600	120	<14	<2.8	<5.2	<6.3	<1400	<280	<280	<0.28	<0.28	<0.52	<0.63	<0.87	<0.87	<0.28	<0.28
1,3-Dichloropropane	NE	NE	<16.5	<3.3	<4.2	<8.3	<1650	<330	<330	<0.28	<0.33	<0.42	<0.83	<0.61	<0.61	<0.33	<0.33
1,4-Dichlorobenzene	75	15	<15	<3	<4.9	<9.4	<1500	<300	<300	<0.3	<0.3	<0.49	<0.94	<0.95	<0.95	<0.3	<0.3
2,2-Dichloropropane	NE	NE	<18	<3.6	<3.1	<22.7	<1800	<360	<360	<0.36	<0.36	<3.1	<2.3	<0.62	<0.62	<0.36	<0.36
2-Chlorotoluene	NE	NE	<10.5	<2.1	<4	<9.3	<1050	<210	<210	<0.21	<0.21	<0.4	<0.93	<0.85	<0.85	<0.21	<0.21
4-Chlorotoluene	NE	NE	<10.5	<2.1	<6.3	<7.6	<1050	<210	<210	<0.21	<0.21	<0.63	<0.76	<0.74	<0.74	<0.21	<0.21
Benzene	5	0.5	<12	<2.4	<4.4	<2.5	<1200	<240	<240	<0.24	<0.24	<0.44	<0.25	<0.41	<0.41	<0.24	<0.24
Bromobenzene	NE	NE	<16	<3.2	<4.8	<2.4	<1600	<320	<320	<0.32	<0.32	<0.48	<0.24	<0.82	<0.82	<0.32	<0.32
Bromochloromethane	NE	NE	---	---	---	<3.6	---	---	---	---	---	---	<0.36	<0.97	<0.97	---	---
Bromodichloromethane	0.6	0.06	<18.5	<3.7	<4.6	<3.6	<1850	<370	<370	<0.37	<0.37	<0.46	<0.36	<0.56	<0.56	<0.37	<0.37
Bromoform	4.4	0.44	<17.5	<3.5	<4.6	<39.7	<1750	<350	<350	<0.35	<0.35	<0.46	<4.0	<0.94	<0.94	<0.35	<0.35
Bromomethane	10	1	---	---	---	<9.7	---	---	---	---	---	---	<0.97	<0.91	<0.91	---	---
Carbon Tetrachloride	5	0.5	<16.5	<3.3	<5.1	<1.7	<1650	<330	<330	<0.33	<0.33	<0.51	<0.17	<0.49	<0.49	<0.33	<0.33
Chlorobenzene	NE	NE	<12	<2.4	<4.6	<7.1	<1200	<240	<240	<0.24	<0.24	<0.46	<0.71	<0.41	<0.41	<0.24	<0.24
Chloroethane	400	80	<31.5	<6.3	<6.5	<13.4	<3150	<630	<630	<0.63	<0.63	<0.65	<1.3	<0.97	<0.97	<0.63	<0.63
Chloroform	6	0.6	<14	<2.8	<4.3	<12.7	<1400	<280	<280	<0.28	<0.28	<0.43	<1.3	<1.3	<1.3	<0.28	<0.28
Chloromethane	30	3	<40.5	<8.1	<19	<21.9	<4050	<810	<810	<0.81	<0.81	<1.9	<2.2	<0.24	<0.24	<0.81	<0.81
Dibromochloromethane	60	6	<11	<2.2	<4.5	<26.0	<1100	<220	<220	<0.22	<0.22	<0.45	<2.6	<0.81	<0.81	<0.22	<0.22
Dibromomethane	NE	NE	---	---	---	<9.4	---	---	---	---	---	---	<0.94	<0.60	<0.60	---	---
Dichlorodifluoromethane	NE	NE	<22	<4.4	<8.7	<5.0	<2200	<440	<440	<0.44	<0.44	<0.87	<0.50	<0.99	<0.99	<0.44	<0.44
Diisopropyl ether	NE	NE	<11.5	<2.3	<4.4	<18.9	<1150	<230	<230	<0.23	<0.23	<0.44	<1.9	<0.76	<0.76	<0.23	<0.23
Ethylbenzene	700	140	<27.5	<5.5	<7.1	<2.2	<2750	<550	<550	<0.55	<0.55	<0.71	<0.22	<0.54	<0.54	<0.55	<0.55
Hexachloro-1,3-butadiene	NE	NE	<75	<15	<22	<11.8	<7500	<1500	<1500	<1.5	<1.5	<2.2	<1.2	<0.67	<0.67	<1.5	<1.5
Isopropylbenzene	NE	NE	<15	<3	<8.2	<3.9	<1500	<300	<300	<0.3	<0.3	<0.82	<0.39	<0.59	<0.59	<0.3	<0.3
Methyl-tert-butyl ether (MTBE)	60	12	<11.5	<2.3	<11	<12.5	<1150	<230	<230	<0.23	<0.23	<1.1	<1.2	<0.61	<0.61	<0.23	<0.23
Methylene Chloride	5	0.5	<25	<5	<13	<5.8	<2500	<500	<500	<0.5	<0.5	<1.3	<0.58	<0.43	<0.43	<0.5	<0.5
Naphthalene	100	10	<85	<17	<16	<11.8	<8500	<1700	<1700	<1.7	<1.7	<1.6	<1.2	<0.89	<0.89	<1.7	<1.7
Styrene	100	10	---	---	---	<4.7	---	---	---	---	---	---	<0.47	<0.86	<0.86	---	---
Tetrachloroethene	5	0.5	<16.5	<3.3	<4.9	<3.3	<1650	<330	<330	<0.33	<0.33	<0.49	<0.33	<0.45	<0.45	<0.33	<0.33
Toluene	800	160	<34.5	<6.9	<4.4	<1.7	<3450	<690	<690	<0.69	<0.69	<0.44	<0.17	<0.67	<0.67	<0.69	<0.69
Trichloroethene	5	0.5	166	209	153	57.7	34000	117000	11000	1.93	1.33	4.8	0.49 J	<0.48	<0.48	<0.33	<0.33
Trichlorofluoromethane	3490	698	<35.5	<7.1	<8.7	<2.1	<3550	<710	<710	<0.71	<0.71	<0.87	<0.21	<0.79	<0.79	<0.71	<0.71
Vinyl chloride	0.2	0.02	37	43	60	56.1	14500	23500	5700	0.53 J	<0.18	<0.17	<0.17	<0.18	<0.18	<0.18	<0.18
cis-1,2-Dichloroethene	70	7	450	500	490	431	89000	119000	17600	4.3	1.61	1.45	1.1	<0.83	<0.83	<0.38	<0.38
cis-1,3-Dichloropropene	0.4	0.04	---	---	---	<36.3	---	---	---	---	---	---	<3.6	<0.20	<0.20	---	---
Xylenes	2000	400	<66.0	<13.2	<3.1	<7.3	<6600	<1320	<1320	<1.32	<1.32	<3.1	<0.73	<2.63	<2.63	<1.32	<1.32
n-Butylbenzene	NE	NE	<17.5	<3.5	<10	<7.1	<1750	<350	<350	<0.35	<0.35	<1	<0.71	<0.93	<0.93	<0.35	<0.35
n-Propylbenzene	NE	NE	<12.5	<2.5	<7.7	<8.1	<1250	<250	<250	<0.25	<0.25	<0.77	<0.81	<0.81	<0.81	<0.25	<0.25
p-Isopropyltoluene	NE	NE	<15.5	<3.1	<11	<8.0	<1550	<310	<310	<0.31	<0.31	<1.1	<0.80	<0.67	<0.67	<0.31	<0.31
sec-Butylbenzene	NE	NE	<16.5	<3.3	<12	<8.5	<1650	<330	<330	<0.33	<0.33	<1.2	<0.85	<0.89	<0.89	<0.33	<0.33
tert-Butylbenzene	NE	NE	<18	<3.6	<11	<3.0	<1800	<360	<360	<0.36	<0.36	<1.1	<0.30	<0.97	<0.97	<0.36	<0.36
trans-1,2-Dichloroethene	100	20	46 J	44	49	78.4	<1750	2710	<350	<0.35	<0.35	<0.54	<1.1	<0.89	<0.89	<0.35	<0.35</

Table A.1.b - Groundwater Analytical Results
Jagemann Plating Co., Inc
1324 S 26th Street, Manitowoc, WI

Parameter	NR 140	NR 140	PZ-13		MW-14		MW-15		PZ-16		MW-17		SUMP-1		SUMP-2		MW-18	MW-19
	ES	PAL	12/29/2016	3/28/2019	12/30/2016	3/28/2019	12/30/2016	3/28/2019	12/29/2016	3/27/2019	12/29/2016	3/27/2019	10/15/2010	6/15/2011	10/15/2010	6/15/2011	3/2/2019	3/28/2019
VOCs (ug/L)																		
1,1,1,2-Tetrachloroethane	70	7	<0.48	<0.27	<96	<67.3	<4.8	<0.54	<0.48	<0.27	<0.48	<0.27	<46.0	<46.0	<0.92	<0.92	<0.27	<0.27
1,1,1-Trichloroethane	200	40	<0.84	<0.24	<168	<61.2	<8.4	<0.49	<0.84	<0.24	<0.84	<0.24	<45.0	<45.0	<0.90	<0.90	<0.24	<0.24
1,1,2,2-Tetrachloroethane	0.2	0.02	<0.52	<0.28	<104	<68.8	<5.2	<0.55	<0.52	<0.28	<0.52	<0.28	<10.0	<10.0	<0.20	<0.20	<0.28	<0.28
1,1,2-Trichloroethane	5	0.5	<0.48	<0.55	<96	<138	<4.8	<1.1	<0.48	<0.55	<0.48	<0.55	<21.0	<21.0	<0.42	<0.42	<0.55	<0.55
1,1-Dichloroethane	850	85	<1.1	<0.27	<220	<68.1	<11	<0.55	<1.1	<0.27	<1.1	<0.27	<37.5	<37.5	<0.75	<0.75	<0.27	<0.27
1,1-Dichloroethene	7	0.7	<0.65	<0.24	<130	181 J	82	42.7	<0.65	<0.24	<0.65	<0.24	<28.5	33.5 J	0.73 J	<0.57	<0.24	<0.24
1,1-Dichloropropene	NE	NE	---	<0.54	---	<135	---	<1.1	---	<0.54	---	<0.54	<37.5	<37.5	<0.75	<0.75	<0.54	<0.54
1,2,3-Trichlorobenzene	NE	NE	<2.7	<0.63	<540	<156	<27	<1.3	<2.7	<0.63	<2.7	<0.63	<37.0	<37.0	<0.74	<0.74	<0.63	<0.63
1,2,3-Trichloropropane	60	12	---	<0.59	---	<148	---	<1.2	---	<0.59	---	<0.59	<49.5	<49.5	<0.99	<0.99	<0.59	<0.59
1,2,4-Trichlorobenzene	70	14	<1.7	<0.95	<340	<238	<17	<1.9	<2.7	<0.95	<1.7	<0.95	<48.5	<48.5	<0.97	<0.97	<0.95	<0.95
1,2,4-Trimethylbenzene	480*	96*	<1.6	<0.84	<320	<210	<16	<1.7	<1.6	<0.84	<1.6	<0.84	<48.5	<48.5	<0.97	<0.97	<0.84	<0.84
1,2-Dibromo-3-chloropropane	0.2	0.02	<1.4	<1.8	<280	<441	<14	<3.5	<1.4	<1.8	<1.4	<1.8	<84.0	<84.0	<1.7	<1.7	<1.8	<1.8
1,2-Dibromoethane (EDB)	0.05	0.005	<0.63	<0.83	<126	<207	<6.3	<1.7	<0.63	<0.83	<0.63	<0.83	<28.0	<28.0	<0.56	<0.56	<0.83	<0.83
1,2-Dichlorobenzene	600	60	<0.46	<0.71	<92	<176	<4.6	<1.4	<0.46	<0.71	<0.46	<0.71	<41.5	<41.5	<0.83	<0.83	<0.71	<0.71
1,2-Dichloroethane	5	0.5	<0.48	<0.28	<96	<70.0	<4.8	<0.56	<0.48	<0.28	<0.48	<0.28	<18.0	<18.0	<0.36	<0.36	<0.28	<0.28
1,2-Dichloropropane	5	0.5	<0.43	<0.28	<86	<70.7	<4.3	<0.57	<0.43	<0.28	<0.43	<0.28	<24.5	<24.5	<0.49	<0.49	<0.28	<0.28
1,3,5-Trimethylbenzene	480*	96*	<1.5	<0.87	<300	<218	<15	<1.7	<1.5	<0.87	<1.5	<0.87	<41.5	<41.5	<0.83	<0.83	<0.87	<0.87
1,3-Dichlorobenzene	600	120	<0.52	<0.63	<104	<157	<5.2	<1.3	<0.52	<0.63	<0.52	<0.63	<43.5	<43.5	<0.87	<0.87	<0.63	<0.63
1,3-Dichloropropane	NE	NE	<0.42	<0.83	<84	<206	<4.2	<1.7	<0.42	<0.83	<0.42	<0.83	<30.5	<30.5	<0.61	<0.61	<0.83	<0.83
1,4-Dichlorobenzene	75	15	<0.49	<0.94	<98	<236	<4.9	<1.9	<0.49	<0.94	<0.49	<0.94	<47.5	<47.5	<0.95	<0.95	<0.94	<0.94
2,2-Dichloropropane	NE	NE	<3.1	<2.3	<620	<566	<31	<4.5	<3.1	<2.3	<3.1	<2.3	<31.0	<31.0	<0.62	<0.62	<2.3	<2.3
2-Chlorotoluene	NE	NE	<0.4	<0.93	<80	<232	<4	<1.9	<0.4	<0.93	<0.4	<0.93	<42.5	<42.5	<0.85	<0.85	<0.93	<0.93
4-Chlorotoluene	NE	NE	<0.63	<0.76	<126	<189	<6.3	<1.5	<0.63	<0.76	<0.63	<0.76	<37.0	<37.0	<0.74	<0.74	<0.76	<0.76
Benzene	5	0.5	<0.44	<0.25	<88	<61.6	<4.4	<0.49	<0.44	<0.25	<0.44	<0.25	<20.5	<20.5	<0.41	<0.41	<0.25	<0.25
Bromobenzene	NE	NE	<0.48	<0.24	<96	<60.3	<4.8	<0.48	<0.48	<0.24	<0.48	<0.24	<41.0	<41.0	<0.82	<0.82	<0.24	<0.24
Bromochloromethane	NE	NE	---	<0.36	---	<90.5	---	<0.72	---	<0.36	---	<0.36	<48.5	<48.5	<0.97	<0.97	<0.36	<0.36
Bromodichloromethane	0.6	0.06	<0.46	<0.36	<92	<90.9	<4.6	<0.73	<0.46	<0.36	<0.46	<0.36	<28.0	<28.0	<0.56	<0.56	<0.36	<0.36
Bromoform	4.4	0.44	<0.46	<4.0	<92	<993	<4.6	<7.9	<0.46	<4.0	<0.46	<4.0	<47.0	<47.0	<0.94	<0.94	<4.0	<4.0
Bromomethane	10	1	---	<0.97	---	<243	---	<1.9	---	<0.97	---	<0.97	<45.5	<45.5	<0.91	<0.91	<0.97	<0.97
Carbon Tetrachloride	5	0.5	<0.51	<0.17	<102	<41.5	<5.1	<0.33	<0.51	<0.17	<0.51	<0.17	<24.5	<24.5	<0.49	<0.49	<0.17	<0.17
Chlorobenzene	NE	NE	<0.46	<0.71	<92	<178	<4.6	<1.4	<0.46	<0.71	<0.46	<0.71	<20.5	<20.5	<0.41	<0.41	<0.71	<0.71
Chloroethane	400	80	<0.65	<1.3	<130	<336	<6.5	<2.7	<0.65	<1.3	<0.65	<1.3	<48.5	<48.5	<0.97	<0.97	<1.3	<1.3
Chloroform	6	0.6	<0.43	<1.3	<86	<318	<4.5	<2.5	<0.43	<1.3	<0.43	<1.3	<65.0	<65.0	<1.3	<1.3	<1.3	<1.3
Chloromethane	30	3	<1.9	<2.2	<380	<547	<19	<4.4	<1.9	<2.2	<1.9	<2.2	<12.0	<12.0	<0.24	<0.24	<2.2	<2.2
Dibromochloromethane	60	6	<0.45	<2.6	<90	<650	<4.5	<5.2	<0.45	<2.6	<0.45	<2.6	<40.5	<40.5	<0.81	<0.81	<2.6	<2.6
Dibromomethane	NE	NE	---	<0.94	---	<234	---	<1.9	---	<0.94	---	<0.94	<30.0	<30.0	<0.60	<0.60	<0.94	<0.94
Dichlorodifluoromethane	NE	NE	<0.87	<0.50	<174	<125	23.5 J	6.8 J	<0.87	<0.50	<0.87	<0.50	<49.5	<49.5	1.8	<0.99	0.51 J	<0.50
Diisopropyl ether	NE	NE	<0.44	<1.9	<88	<472	<4.4	<3.8	<0.44	<1.9	<0.44	<1.9	<38.0	<38.0	<0.76	<0.76	<1.9	<1.9
Ethylbenzene	700	140	<0.71	<0.22	<142	<54.5	<7.1	<0.44	<0.71	<0.22	<0.71	<0.22	<27.0	<27.0	<0.54	<0.54	<0.22	<0.22
Hexachloro-1,3-butadiene	NE	NE	<2.2	<1.2	<440	<296	<22	<2.4	<2.2	<1.2	<2.2	<1.2	<33.5	<33.5	<0.67	<0.67	<1.2	<1.2
Isopropylbenzene	NE	NE	<0.82	<0.39	<164	<98.2	<8.2	<0.79	<0.82	<0.39	<0.82	<0.39	<29.5	<29.5	<0.59	<0.59	<0.39	<0.39
Methyl-tert-butyl ether (MTBE)	60	12	<1.1	<1.2	<220	<311	<11	<2.5	<1.1	<1.2	<1.1	<1.2	<30.5	<30.5	<0.61	<0.61	<1.2	<1.2
Methylene Chloride	5	0.5	<1.3	<0.58	<260	<145	<13	<1.2	<1.3	<0.58	<1.3	<0.58	<21.5	<21.5	<0.43	<0.43	<0.58	<0.58
Naphthalene	100	10	<1.6	<1.2	<320	<294	<16	<2.4	<1.6	<1.2	<1.6	<1.2	<44.5	<44.5	<0.89	<0.89	<1.2	<1.2
Styrene	100	10	---	<0.47	---	<116	---	<0.93	---	<0.47	---	<0.47	<43.0	<43.0	<0.86	<0.86	<0.47	<0.47
Tetrachloroethene	5	0.5	<0.49	<0.33	<98	<81.6	<4.9	<0.65	<0.49	<0.33	<0.49	<0.33	<22.5	<22.5	<0.45	<0.45	<0.33	<0.33
Toluene	800	160	<0.44	<0.17	<88	<43.0	<4.4	<0.34	<0.44	<0.17	<0.44	<0.17	<33.5	<33.5	<0.67	<0.67	<0.17	<0.17
Trichloroethene	5	0.5	<0.47	<0.26	36000	12800	1660	350	<0.47	<0.26	<0.47	<0.26	3940	8100	84.7	72	<0.26	<0.26
Trichlorofluoromethane	3490	698	<0.87	<0.21	<174	<53.7	<8.7	<0.43	<0.87	<0.21	<0.87	<0.21	<39.5	<39.5	<0.79	<0.79	<0.21	<0.21
Vinyl chloride	0.2	0.02	<0.17	<0.17	5900	5150	191	234	<0.17	<0.17	<0.17	<0.17	1990	2950	0.66 J	0.31 J	<0.17	<0.17
cis-1,2-Dichloroethene	70	7	<0.45	<0.27	31400	14000	390	176	<0.45	<0.27	<0.45	<0.27	3270	4480	106	45.3	<0.27	<0.27
cis-1,3-Dichloropropene	0.4	0.04	---	<3.6	---	<907	---	<7.3	---	<3.6	---	<3.6	<10.0	<10.0	<0.20	<0.20	<3.6	<3.6
Xylenes	2000	400	<3.1	<0.73	<620	<181.5	<31	<1.45	<3.1	<0.73	<3.1	<0.73	<131.5	<131.5	<2.63	<2.63	<0.73	<0.73
n-Butylbenzene	NE	NE	<1	<0.71	<200	<177	<10	<1.4	<1	<0.71	<1	<0.71	<46.5	<46.5	<0.93	<0.93	<0.71	<0.7