



March 30, 2018  
(117-7469002.04)

Mr. Thomas Wentland  
Waste Management Engineer  
Wisconsin Department of Natural Resources  
P.O. Box 408  
Plymouth, WI 53073-0408

RE: First Quarter 2018 Progress Report, Source Area Remedial Action, Pentair Flow Technologies, LLC Facility, 293 S. Wright Street, Delavan, Wisconsin  
BRRTS# 02-65-529579, FID# 265091640

SITE NAME/ACTIVITY:                      DATE: March 30, 2018  
Contract No. SF-90-02  
Delavan Municipal Well #4  
Delavan, Wisconsin  
Source Area Remediation                      PERIOD: January 1 through March 31, 2018

Dear Mr. Wentland:

As requested by the Wisconsin Department of Natural Resources (WDNR) in its February 8, 2017 letter, Pentair Flow Technologies began collecting groundwater samples from monitor well TW-4 on a quarterly schedule during the first quarter of 2017 (January – March). The increase in sampling frequency of TW-4 from annual to quarterly was requested because the trichloroethene (TCE) concentration in the annual groundwater samples collected from TW-4 increased from 20 ug/L for the 2014 sample to 36 ug/L for the 2015 sample. The reported concentration of 36 ug/L for TCE in the 2015 sample exceeds the U.S. EPA Removal Management Level (RML) of 22 ug/L for TCE used to protect against commercial/industrial exposure via vapor inhalation. The annual groundwater sample collected from TW-4 in May 2016 had a reported TCE concentration of 15 ug/L, which is less than the RML of 22 ug/L. The sampling of TW-4 on a quarterly schedule is to continue until directed otherwise in writing by the WDNR.

The first quarter 2018 sample was collected from TW-4 by Tetra Tech personnel on February 28, 2018. The groundwater sample was submitted to the TestAmerica laboratory in University Park, Illinois for laboratory analysis of volatile organic compounds (VOCs) by EPA Method 8260B. Copies of the field water quality sampling and analysis form and the laboratory analytical report are provided in Appendix A. Historical VOCs results and the current VOCs results for the groundwater samples collected from TW-4 are summarized on Table 1. A chart showing the trends in trichloroethene (TCE) and total VOCs concentrations in TW-4 is included as Figure 1 and a site layout figure showing the location of TW-4 is included as Figure 2. As shown on Table 1 and Figure 1, the reported TCE concentration in the groundwater sample collected from TW-4 was 11 ug/L, which is less than the reported TCE concentration of 16 ug/L for the previous groundwater

sample collected from TW-4 on October 24, 2017. The TCE concentrations in all of the quarterly samples collected from TW-4 in 2017 and the TCE concentration in the first quarter 2018 sample collected from TW-4 are below the RML of 22 ug/L, which indicates there is not a vapor inhalation exposure risk at the Delavan facility at this time. The 2017 and first quarter 2018 TCE results also confirms the overall decreasing trend in TCE impacts at TW-4 (see Figure 1).

The next quarterly groundwater sample is scheduled to be collected from TW-4 by Tetra Tech personnel during the month of May. Please contact me if you require additional information or have any questions regarding these matters.

Sincerely,

**Tetra Tech**



Mark A. Manthey, P.G.  
Associate Hydrogeologist  
[mark.manthey@tetrattech.com](mailto:mark.manthey@tetrattech.com)

Encs.

cc: Steve Scharinger, Pentair Flow Technologies, LLC (Electronic copy via email.)  
Michelle Heger, U.S. EPA (Electronic copy via email.)  
Robert Thiboldeaux, PhD, Senior Toxicologist, Wisconsin Department of Health Services  
(Electronic copy via email.)

## FIGURES

Figure 1. Monitor Well TW-4 Trichloroethene (TCE) and Total VOCs Time Series Chart

Figure 2. Site Layout

## TABLES

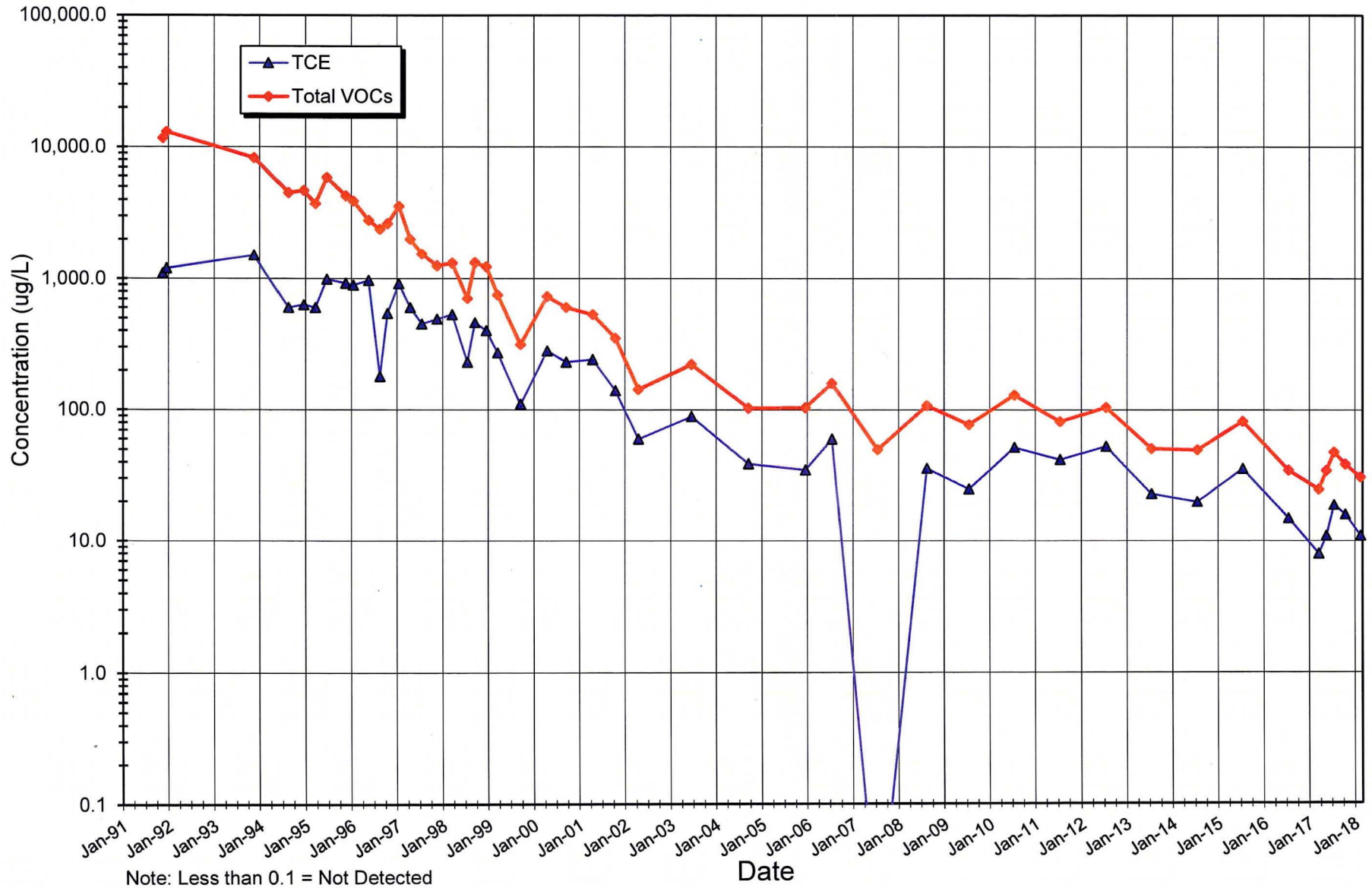
Table 1. Summary of VOCs Groundwater Monitoring Analytical Results for Plant #1 Monitor Well TW-4

## APPENDIX






Appendix A. Field Form and Laboratory Analytical Report

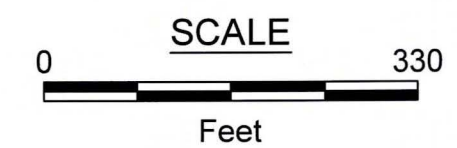
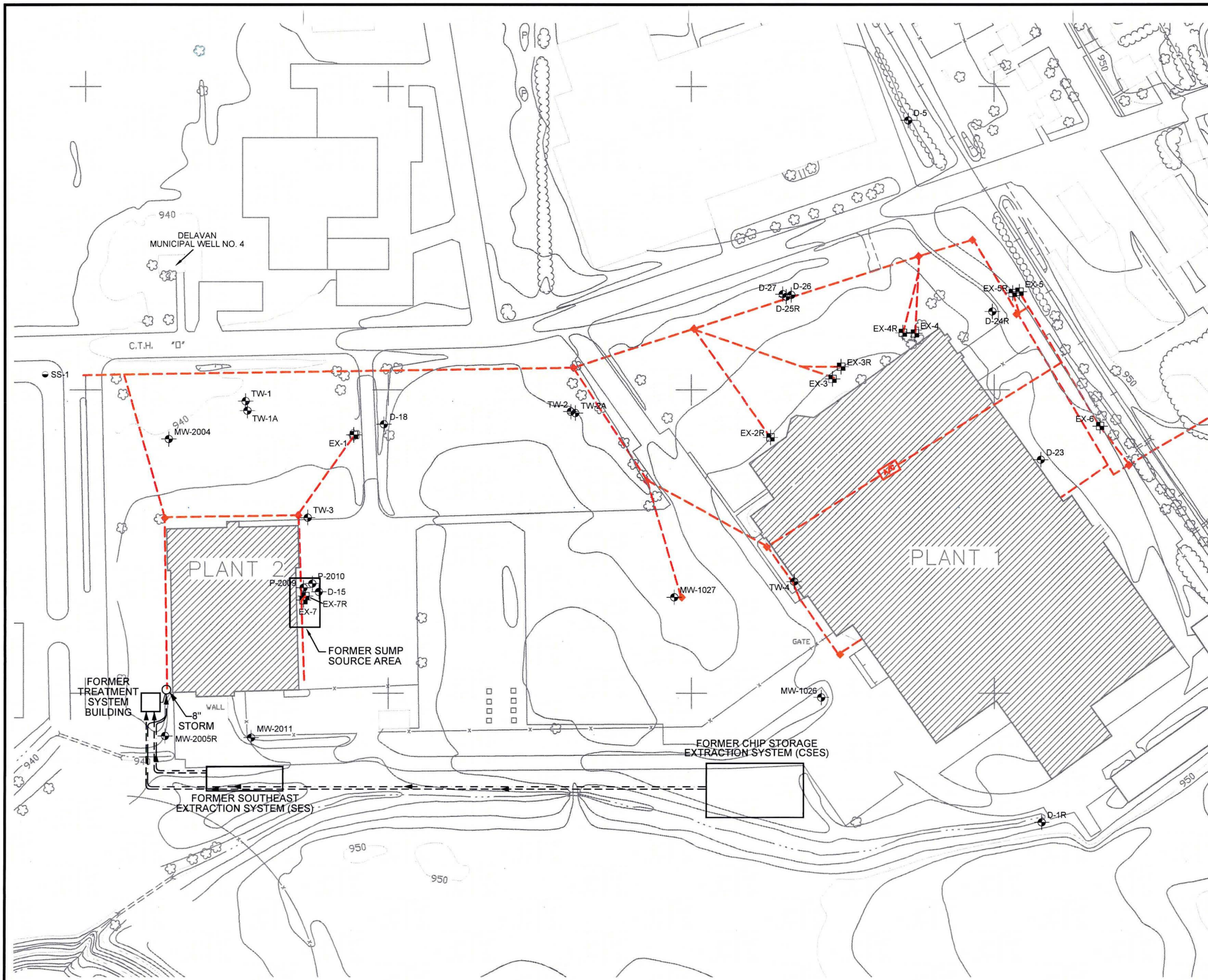
## FIGURES

Figure 1. Monitor Well TW-4 Trichloroethene (TCE) and Total VOCs  
Time Series Chart



### EXPLANATION

-  MW-2004 MONITOR WELL LOCATION AND DESIGNATION
-  E-3 EXTRACTION WELL LOCATION AND DESIGNATION
-  SS-1 STORM SEWER SAMPLE LOCATION AND DESIGNATION
-  P-2009 PIEZOMETER LOCATION AND DESIGNATION
-  EXTRACTION WELL/STORM SEWER PIPING



STA-RITE INDUSTRIES, INC. DELANAN, WISCONSIN	DATE: 12/16/17	
	DESIGNED: HJW	CHECKED: MAM
DELANAN FACILITY LAYOUT AND WELL LOCATIONS	APPROVED: MAM	DRAWN: HJW
	PROJ.: 117-7469002	
		
		Figure 2

Base map from Aereo-Metric Engineering, 4/16/88.  
S:\CAD\STA-RITE\DELANAN\12-13-17\FIG3.DWG

**TABLE**

Table 1. Summary of VOCs Groundwater Monitoring Analytical Results for Plant #1 Monitor Well TW-4

WELL	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	Acetone	Benzene	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	CIS-1,2-DCE	Trans-1,2-DCE	Methylene Chloride	Ethylbenzene	Xylenes, Total	Total VOCs
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140	ES	5.0	200	5	5	0.2	9000	5.0	6	850	5	7	70	100	5	700	2000	
NR 140	PAL	0.5	40	0.5	0.5	0.02	1800	0.5	0.6	85	0.5	0.7	7	20	0.5	140	400	
TW-4	11/05/91	0.50	10000	1100	5.6	<0.3	<1.0	<0.5	4.0	61	<0.5	440.0	50	<0.5	2.4	<0.5	<1.0	11663.5
	12/12/91	0.60	11000	1200	4.5	<0.3	<1.0	<0.5	3.7	93	3	680.0	52	<0.5	<1	<0.5	<1.0	13036.8
	11/11/93	0.80	6200	1500	3.2	<0.3	<1.0	<0.5	<0.5	26	<0.5	490	25	<0.5	<1.0	<0.5	<1.0	8245
	08/17/94	<1	3900	600	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4500
	12/14/94	<50	4040	630	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4670
	03/13/95	ND	3120	600	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3720
	06/21/95	NA	4220	990	17.6	5.4	<1.0	NA	3.8	113	<0.5	415	93.6	NA	NA	NA	NA	5858.4
	11/08/95	1.2	3340	920	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4261.2
	01/25/96	1.1	3000	891	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3892.1
	05/14/96	0.90	1820	969	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2789.9
	08/14/96	<0.5	2150	179	1.8	<0.5	<1.0	<0.5	<0.5	12	<1.6	36.7	NA	<0.5	NA	<0.5	NA	2379.5
	10/08/96	0.90	1850	541	6.3	<0.5	<1.0	<0.5	1.0	36.3	<1.6	196	NA	<0.5	NA	<0.5	NA	2631.5
	01/21/97	<0.5	2650	913	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3563
	04/01/97	0.83	1400	600	NA	<0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2000.83
	07/23/97	0.67	950	450	4.4	<0.46	3.4	0.3	0.70	24	<0.20	66	36	0.5	<0.87	<0.38	<1.1	1535.97
	11/18/97	0.83	760	490	NA	<0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1250.83
	03/23/98	0.74	780	530	NA	<0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1310.74
	07/27/98	<2.5	410	230	<2.5	<2.5	<20	<1.0	<2.5	13	<2.5	16	21	<2.5	15	<2.5	<5.0	705
	09/28/98	<0.63	860	460	2.8	<0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1322.8
	12/05/98	<6.3	830	400	NA	<4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1230
	03/11/99	<6.3	480	270	NA	<4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	750
	09/02/99	<3.2	180	110	2.4	<2.3	NA	<1.6	<0.90	<1.2	<1.0	19	2.0	<2.0	<4.4	<1.9	<5.5	313.4
	04/25/00	<3.2	450	280	NA	<2.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.5	730
	09/26/00	<6.3	340	230	<1.5	<4.6	NA	<3.1	<1.8	5.2	<2.0	15	10	<3.9	<8.7	<3.8	<5.5	600.2
TW-4	04/23/01	0.60	290	240	NA	<0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	530.6



**Table 1. Summary of VOCs Groundwater Monitoring Analytical Results for Plant #1 Monitor Well TW-4**

WELL	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	Acetone	Benzene	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	CIS-1,2-DCE	Trans-1,2-DCE	Methylene Chloride	Ethylbenzene	Xylenes, Total	Total VOCs
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140	ES	5.0	200	5	5	0.2	9000	5.0	6	850	5	7	70	100	5	700	2000	
NR 140	PAL	0.5	40	0.5	0.5	0.02	1800	0.5	0.6	85	0.5	0.7	7	20	0.5	140	400	
TW-4	10/02/01	<2.0	190	140	<2.0	<2.0	NA	<0.80	<2.0	2.1	<2.0	6.8	3.0	<2.0	8.1	<2.0	<2.0	350
	04/16/02	<0.25	76	60	1.5	<0.25	NA	<0.10	<0.25	1.4	<0.25	2.5	0.76	<0.25	0.47	<0.25	<0.25	142.63
	06/24/03	<1.0	120	89	1.4	<1.0	NA	<0.50	<0.50	2.1	<1.0	4.7	3.7	<1.0	<2.0	<1.0	<1.0	220.9
	09/21/04	<0.50	64	39	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	103
	12/14/05	<0.50	65	35	0.92	<0.20	<2.0	<0.20	<0.20	0.76	<0.50	1.6	0.55	<0.50	<1.0	<0.50	<0.50	103.83
	07/31/06	<0.50	92	60	1.3	<0.20	<2.0	<0.20	<0.20	1.3	<0.50	2.9	1.4	<0.50	<1.0	<0.50	<0.50	158.9
	07/31/07	<0.50	50	<0.20	<0.25	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
	08/20/08	<0.50	71	36	0.73	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	107.73
	07/28/09	<0.50	52	25	0.34	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	77.34
	07/14/10	<0.50	75	52	0.28	<0.20	NA	<0.20	<0.20	<0.50	<0.50	2.1	<0.50	<0.50	<1.0	<0.50	<0.50	129.38
	07/21/11	<0.50	38	42	0.28	<0.20	NA	<0.20	<0.20	0.52	<0.50	0.78	<0.50	<0.50	<1.0	<0.50	<0.50	81.58
	07/10/12	<0.17	48	53	<0.28	<0.10	NA	<0.074	<0.20	1.8	<0.28	1.8	<0.12	<0.25	<0.68	<0.50	<0.068	104.6
	07/24/13	<0.17	26	23	<0.28	<0.10	NA	<0.074	<0.20	0.54	<0.28	1.1	<0.12	<0.25	<0.68	0.13	0.20	50.97
	07/29/14	<0.17	29	20	<0.28	<0.10	NA	<0.074	<0.20	<0.19	<0.28	0.9	<0.12	<0.25	<0.68	<0.13	<0.068	49.9
07/14/15	<0.17	30	36	<0.28	<0.10	NA	<0.074	<0.20	4.9	<0.28	1.4	1.7	<0.25	8.2 B	<0.10	<0.068	82.2	
TW-4	07/29/16	<0.37	20	15	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	<0.39	<0.41	<0.35	<1.6	<0.18	<0.22	35
	03/01/17	<0.37	17	8.0	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	<0.39	<0.41	<0.35	<1.6	<0.18	<0.22	25
	05/17/17	<0.37	22	11	<0.35	<0.20	NA	<0.15	<0.37	0.96	<0.39	0.90	<0.41	<0.35	<1.6	<0.18	<0.22	34.86
	07/13/17	<0.37	27	19	<0.35	<0.20	NA	<0.15	<0.37	1.1	<0.39	1.0	<0.41	<0.35	<1.6	<0.18	<0.22	48.1
	10/24/17	<0.37	22	16	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	0.91	<0.41	<0.35	<1.6	<0.18	<0.22	38.91
	02/28/18	<0.37	20	11	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	<0.39	<0.41	<0.35	<1.6	<0.18	<0.22	31

Notes: All values listed are in parts per billion (ug/L).  
 VOCs = Volatile Organic Compounds  
 ES = Enforcement Standard, PAL = Preventative Action Limit  
 Orange Highlight = above ES, Yellow Highlight = above PAL  
 ND = not detected, NA = not analyzed or no data available

PCE = Tetrachloroethene  
 TCA = Trichloroethane  
 TCE = Trichloroethene  
 DCA = Dichloroethane  
 DCE = Dichloroethene  
 B = Detected in blank sample at a similar concentration.

**ATTACHMENT A  
FIELD FORM AND  
LABORATORY ANALYTICAL REPORT**

# TETRA TECH FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS			
PROJECT	Delavan Facility Remedial Action	Temp. & pH	Hanna		
PROJECT NO.	117-7469002.04	Conductivity	Hanna		
LOCATION	Delavan, Wi.	ORP	NA		
PERSONNEL	Todd M Thomson	DO	NA		
SAMPLE POINT ID	TW-4				
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	2-28-18				
CLOCK TIME (Military)	08:50				
DEPTH TO WATER (ft)*	37.13				
MEASURED WELL DEPTH (ft)*	50.52				
CASING VOLUME (gallons)	2.2				
PURGE VOLUME (gallons)	10				
DEPTH SAMPLE TAKEN (ft)*	45				
SAMPLING DEVICE	Handing Boiler				
FIELD TEMPERATURE (°C)	12.8				
pH	7.12				
ELEC. COND. (uS/cm)	Measured	NA			
	at 25° C	1472			
ORP (mV)	NA				
DISSOLVED OXYGEN (ppm)	NA				
DISSOLVED OXYGEN (% Sat.)	NA				
COLOR	Clear				
ODOR	None				
CLARITY	Clear				
SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
VOCs (EPA Method 8260 B)	3 - 40 ml; G; L; HCL; No				
NAME OF LABORATORY	Test America				
DATE SENT TO LAB	3-2-18				
SAMPLER-S NAME	TMT				

\*Measured from top of well casing.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Chicago  
2417 Bond Street  
University Park, IL 60484  
Tel: (708)534-5200

TestAmerica Job ID: 500-141695-1  
Client Project/Site: Pentair Delavan - 117-7469002.04

For:  
Tetra Tech GEO  
175 N Corporate Drive  
Suite 100  
Brookfield, Wisconsin 53045

Attn: Mr. Mark Manthey



Authorized for release by:  
3/6/2018 5:12:38 PM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandie.fredrick@testamericainc.com](mailto:sandie.fredrick@testamericainc.com)

### LINKS

Review your project  
results through  
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[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Case Narrative

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

**Job ID: 500-141695-1**

**Laboratory: TestAmerica Chicago**

### Narrative

**Job Narrative**  
**500-141695-1**

### Comments

No additional comments.

### Receipt

The samples were received on 3/3/2018 10:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8° C.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



# Detection Summary

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## Client Sample ID: TW-4

## Lab Sample ID: 500-141695-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,1,1-Trichloroethane	20		1.0	0.38	ug/L	1			8260B	Total/NA
Trichloroethene	11		0.50	0.16	ug/L	1			8260B	Total/NA

## Client Sample ID: Trip Blank

## Lab Sample ID: 500-141695-2

No Detections.



This Detection Summary does not include radiochemical test results.

TestAmerica Chicago

## Method Summary

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





# Sample Summary

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-141695-1	TW-4	Water	02/28/18 08:50	03/03/18 10:45
500-141695-2	Trip Blank	Water	02/28/18 00:00	03/03/18 10:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Client Sample Results

Client: Tetra Tech GEO  
 Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

**Client Sample ID: TW-4**  
**Date Collected: 02/28/18 08:50**  
**Date Received: 03/03/18 10:45**

**Lab Sample ID: 500-141695-1**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			03/05/18 17:33	1
Bromobenzene	<0.36		1.0	0.36	ug/L			03/05/18 17:33	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			03/05/18 17:33	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			03/05/18 17:33	1
Bromoform	<0.48		1.0	0.48	ug/L			03/05/18 17:33	1
Bromomethane	<0.80		2.0	0.80	ug/L			03/05/18 17:33	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			03/05/18 17:33	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
Chloroethane	<0.51		1.0	0.51	ug/L			03/05/18 17:33	1
Chloroform	<0.37		2.0	0.37	ug/L			03/05/18 17:33	1
Chloromethane	<0.32		1.0	0.32	ug/L			03/05/18 17:33	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			03/05/18 17:33	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			03/05/18 17:33	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			03/05/18 17:33	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			03/05/18 17:33	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			03/05/18 17:33	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			03/05/18 17:33	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
Dibromomethane	<0.27		1.0	0.27	ug/L			03/05/18 17:33	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			03/05/18 17:33	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			03/05/18 17:33	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			03/05/18 17:33	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			03/05/18 17:33	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			03/05/18 17:33	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			03/05/18 17:33	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			03/05/18 17:33	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			03/05/18 17:33	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			03/05/18 17:33	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			03/05/18 17:33	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			03/05/18 17:33	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			03/05/18 17:33	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			03/05/18 17:33	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
Naphthalene	<0.34		1.0	0.34	ug/L			03/05/18 17:33	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			03/05/18 17:33	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			03/05/18 17:33	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			03/05/18 17:33	1
Styrene	<0.39		1.0	0.39	ug/L			03/05/18 17:33	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			03/05/18 17:33	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			03/05/18 17:33	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			03/05/18 17:33	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			03/05/18 17:33	1
Toluene	<0.15		0.50	0.15	ug/L			03/05/18 17:33	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			03/05/18 17:33	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			03/05/18 17:33	1

TestAmerica Chicago

# Client Sample Results

Client: Tetra Tech GEO  
 Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

**Client Sample ID: TW-4**

**Lab Sample ID: 500-141695-1**

Date Collected: 02/28/18 08:50

Matrix: Water

Date Received: 03/03/18 10:45

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			03/05/18 17:33	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			03/05/18 17:33	1
<b>1,1,1-Trichloroethane</b>	<b>20</b>		1.0	0.38	ug/L			03/05/18 17:33	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			03/05/18 17:33	1
<b>Trichloroethene</b>	<b>11</b>		0.50	0.16	ug/L			03/05/18 17:33	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			03/05/18 17:33	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			03/05/18 17:33	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			03/05/18 17:33	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			03/05/18 17:33	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			03/05/18 17:33	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			03/05/18 17:33	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	81		72 - 124					03/05/18 17:33	1
Dibromofluoromethane	90		75 - 120					03/05/18 17:33	1
1,2-Dichloroethane-d4 (Surr)	90		75 - 126					03/05/18 17:33	1
Toluene-d8 (Surr)	94		75 - 120					03/05/18 17:33	1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 500-141695-2**

Date Collected: 02/28/18 00:00

Matrix: Water

Date Received: 03/03/18 10:45

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			03/05/18 16:13	1
Bromobenzene	<0.36		1.0	0.36	ug/L			03/05/18 16:13	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			03/05/18 16:13	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			03/05/18 16:13	1
Bromoform	<0.48		1.0	0.48	ug/L			03/05/18 16:13	1
Bromomethane	<0.80		2.0	0.80	ug/L			03/05/18 16:13	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			03/05/18 16:13	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1
Chloroethane	<0.51		1.0	0.51	ug/L			03/05/18 16:13	1
Chloroform	<0.37		2.0	0.37	ug/L			03/05/18 16:13	1
Chloromethane	<0.32		1.0	0.32	ug/L			03/05/18 16:13	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			03/05/18 16:13	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			03/05/18 16:13	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			03/05/18 16:13	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			03/05/18 16:13	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			03/05/18 16:13	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			03/05/18 16:13	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1
Dibromomethane	<0.27		1.0	0.27	ug/L			03/05/18 16:13	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			03/05/18 16:13	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			03/05/18 16:13	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			03/05/18 16:13	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			03/05/18 16:13	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			03/05/18 16:13	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1

TestAmerica Chicago

# Client Sample Results

Client: Tetra Tech GEO  
 Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 500-141695-2**

Date Collected: 02/28/18 00:00

Matrix: Water

Date Received: 03/03/18 10:45

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			03/05/18 16:13	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			03/05/18 16:13	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			03/05/18 16:13	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			03/05/18 16:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			03/05/18 16:13	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			03/05/18 16:13	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			03/05/18 16:13	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			03/05/18 16:13	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1
Naphthalene	<0.34		1.0	0.34	ug/L			03/05/18 16:13	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			03/05/18 16:13	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			03/05/18 16:13	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			03/05/18 16:13	1
Styrene	<0.39		1.0	0.39	ug/L			03/05/18 16:13	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			03/05/18 16:13	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			03/05/18 16:13	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			03/05/18 16:13	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			03/05/18 16:13	1
Toluene	<0.15		0.50	0.15	ug/L			03/05/18 16:13	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			03/05/18 16:13	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			03/05/18 16:13	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			03/05/18 16:13	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			03/05/18 16:13	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			03/05/18 16:13	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			03/05/18 16:13	1
Trichloroethene	<0.16		0.50	0.16	ug/L			03/05/18 16:13	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			03/05/18 16:13	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			03/05/18 16:13	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			03/05/18 16:13	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			03/05/18 16:13	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			03/05/18 16:13	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			03/05/18 16:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		72 - 124		03/05/18 16:13	1
Dibromofluoromethane	91		75 - 120		03/05/18 16:13	1
1,2-Dichloroethane-d4 (Surr)	90		75 - 126		03/05/18 16:13	1
Toluene-d8 (Surr)	90		75 - 120		03/05/18 16:13	1

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# Definitions/Glossary

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)



# QC Association Summary

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## GC/MS VOA

### Analysis Batch: 422198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-141695-1	TW-4	Total/NA	Water	8260B	
500-141695-2	Trip Blank	Total/NA	Water	8260B	
MB 500-422198/6	Method Blank	Total/NA	Water	8260B	
LCS 500-422198/4	Lab Control Sample	Total/NA	Water	8260B	



# Surrogate Summary

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (72-124)	DBFM (75-120)	DCA (75-126)	TOL (75-120)
500-141695-1	TW-4	81	90	90	94
500-141695-2	Trip Blank	89	91	90	90
LCS 500-422198/4	Lab Control Sample	85	90	85	88
MB 500-422198/6	Method Blank	93	91	90	90

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)



# QC Sample Results

Client: Tetra Tech GEO  
 Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 500-422198/6**  
**Matrix: Water**  
**Analysis Batch: 422198**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			03/05/18 10:14	1
Bromobenzene	<0.36		1.0	0.36	ug/L			03/05/18 10:14	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			03/05/18 10:14	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			03/05/18 10:14	1
Bromoform	<0.48		1.0	0.48	ug/L			03/05/18 10:14	1
Bromomethane	<0.80		2.0	0.80	ug/L			03/05/18 10:14	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			03/05/18 10:14	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
Chloroethane	<0.51		1.0	0.51	ug/L			03/05/18 10:14	1
Chloroform	<0.37		2.0	0.37	ug/L			03/05/18 10:14	1
Chloromethane	<0.32		1.0	0.32	ug/L			03/05/18 10:14	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			03/05/18 10:14	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			03/05/18 10:14	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			03/05/18 10:14	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			03/05/18 10:14	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			03/05/18 10:14	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			03/05/18 10:14	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
Dibromomethane	<0.27		1.0	0.27	ug/L			03/05/18 10:14	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			03/05/18 10:14	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			03/05/18 10:14	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			03/05/18 10:14	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			03/05/18 10:14	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			03/05/18 10:14	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			03/05/18 10:14	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			03/05/18 10:14	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			03/05/18 10:14	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			03/05/18 10:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			03/05/18 10:14	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			03/05/18 10:14	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			03/05/18 10:14	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			03/05/18 10:14	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
Naphthalene	<0.34		1.0	0.34	ug/L			03/05/18 10:14	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			03/05/18 10:14	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			03/05/18 10:14	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			03/05/18 10:14	1
Styrene	<0.39		1.0	0.39	ug/L			03/05/18 10:14	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			03/05/18 10:14	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			03/05/18 10:14	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			03/05/18 10:14	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			03/05/18 10:14	1
Toluene	<0.15		0.50	0.15	ug/L			03/05/18 10:14	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			03/05/18 10:14	1

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# QC Sample Results

Client: Tetra Tech GEO  
 Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 500-422198/6**

**Matrix: Water**

**Analysis Batch: 422198**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			03/05/18 10:14	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			03/05/18 10:14	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			03/05/18 10:14	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			03/05/18 10:14	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			03/05/18 10:14	1
Trichloroethene	<0.16		0.50	0.16	ug/L			03/05/18 10:14	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			03/05/18 10:14	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			03/05/18 10:14	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			03/05/18 10:14	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			03/05/18 10:14	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			03/05/18 10:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			03/05/18 10:14	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	93		72 - 124		03/05/18 10:14	1
Dibromofluoromethane	91		75 - 120		03/05/18 10:14	1
1,2-Dichloroethane-d4 (Surr)	90		75 - 126		03/05/18 10:14	1
Toluene-d8 (Surr)	90		75 - 120		03/05/18 10:14	1

**Lab Sample ID: LCS 500-422198/4**

**Matrix: Water**

**Analysis Batch: 422198**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	43.8		ug/L		88	70 - 120
Bromobenzene	50.0	45.3		ug/L		91	70 - 122
Bromochloromethane	50.0	44.5		ug/L		89	65 - 122
Bromodichloromethane	50.0	42.9		ug/L		86	69 - 120
Bromoform	50.0	46.9		ug/L		94	56 - 132
Bromomethane	50.0	40.7		ug/L		81	40 - 130
Carbon tetrachloride	50.0	45.3		ug/L		91	65 - 122
Chlorobenzene	50.0	45.3		ug/L		91	70 - 120
Chloroethane	50.0	44.1		ug/L		88	45 - 127
Chloroform	50.0	43.3		ug/L		87	70 - 120
Chloromethane	50.0	38.8		ug/L		78	54 - 147
2-Chlorotoluene	50.0	41.9		ug/L		84	70 - 125
4-Chlorotoluene	50.0	42.7		ug/L		85	68 - 124
cis-1,2-Dichloroethene	50.0	45.0		ug/L		90	70 - 125
cis-1,3-Dichloropropene	50.0	40.9		ug/L		82	64 - 127
Dibromochloromethane	50.0	45.8		ug/L		92	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	40.8		ug/L		82	56 - 123
1,2-Dibromoethane	50.0	45.0		ug/L		90	70 - 125
Dibromomethane	50.0	43.0		ug/L		86	70 - 120
1,2-Dichlorobenzene	50.0	48.1		ug/L		96	70 - 125
1,3-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 125
1,4-Dichlorobenzene	50.0	45.5		ug/L		91	70 - 120
Dichlorodifluoromethane	50.0	41.6		ug/L		83	40 - 150
1,1-Dichloroethane	50.0	45.6		ug/L		91	70 - 125

TestAmerica Chicago

# QC Sample Results

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-422198/4

Matrix: Water

Analysis Batch: 422198

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	50.0	43.8		ug/L		88	68 - 127
1,1-Dichloroethene	50.0	43.8		ug/L		88	67 - 122
1,2-Dichloropropane	50.0	44.4		ug/L		89	67 - 130
1,3-Dichloropropane	50.0	41.8		ug/L		84	62 - 136
2,2-Dichloropropane	50.0	43.7		ug/L		87	58 - 129
1,1-Dichloropropene	50.0	43.3		ug/L		87	70 - 121
Ethylbenzene	50.0	44.6		ug/L		89	70 - 120
Hexachlorobutadiene	50.0	51.9		ug/L		104	51 - 150
Isopropylbenzene	50.0	42.3		ug/L		85	70 - 126
Methylene Chloride	50.0	42.4		ug/L		85	69 - 125
Methyl tert-butyl ether	50.0	40.6		ug/L		81	70 - 120
Naphthalene	50.0	45.2		ug/L		90	59 - 130
n-Butylbenzene	50.0	47.4		ug/L		95	68 - 125
N-Propylbenzene	50.0	42.4		ug/L		85	69 - 127
p-Isopropyltoluene	50.0	44.6		ug/L		89	70 - 125
sec-Butylbenzene	50.0	43.1		ug/L		86	70 - 123
Styrene	50.0	45.5		ug/L		91	70 - 120
tert-Butylbenzene	50.0	43.4		ug/L		87	70 - 121
1,1,1,2-Tetrachloroethane	50.0	45.5		ug/L		91	70 - 125
1,1,2,2-Tetrachloroethane	50.0	39.7		ug/L		79	67 - 127
Tetrachloroethene	50.0	46.4		ug/L		93	70 - 128
Toluene	50.0	45.0		ug/L		90	70 - 125
trans-1,2-Dichloroethene	50.0	44.8		ug/L		90	70 - 125
trans-1,3-Dichloropropene	50.0	40.4		ug/L		81	62 - 128
1,2,3-Trichlorobenzene	50.0	51.9		ug/L		104	55 - 140
1,2,4-Trichlorobenzene	50.0	52.8		ug/L		106	66 - 127
1,1,1-Trichloroethane	50.0	45.1		ug/L		90	70 - 125
1,1,2-Trichloroethane	50.0	42.3		ug/L		85	70 - 122
Trichloroethene	50.0	44.1		ug/L		88	70 - 125
Trichlorofluoromethane	50.0	43.0		ug/L		86	70 - 126
1,2,3-Trichloropropane	50.0	36.9		ug/L		74	50 - 133
1,2,4-Trimethylbenzene	50.0	42.9		ug/L		86	70 - 123
1,3,5-Trimethylbenzene	50.0	43.4		ug/L		87	70 - 123
Vinyl chloride	50.0	47.6		ug/L		95	64 - 126
Xylenes, Total	100	88.4		ug/L		88	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	85		72 - 124
Dibromofluoromethane	90		75 - 120
1,2-Dichloroethane-d4 (Surr)	85		75 - 126
Toluene-d8 (Surr)	88		75 - 120

TestAmerica Chicago

# Lab Chronicle

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

**Client Sample ID: TW-4**

Date Collected: 02/28/18 08:50

Date Received: 03/03/18 10:45

**Lab Sample ID: 500-141695-1**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422198	03/05/18 17:33	JJH	TAL CHI

**Client Sample ID: Trip Blank**

Date Collected: 02/28/18 00:00

Date Received: 03/03/18 10:45

**Lab Sample ID: 500-141695-2**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422198	03/05/18 16:13	JJH	TAL CHI

**Laboratory References:**

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



# Accreditation/Certification Summary

Client: Tetra Tech GEO  
Project/Site: Pentair Delavan - 117-7469002.04

TestAmerica Job ID: 500-141695-1

## Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18



TestAmerica Chicago  
 2417 Bond Street  
 University Park, IL 60484  
 Phone (708) 534-5200 Fax (708) 534-5211

### Chain of Custody Record

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b>		Sampler: <i>Tom M. Thompson</i>	Lab PM: Fredrick, Sandie J	Carrier Tracking No(s):	GCG No: 500-80550-29125.1	
Client Contact: Mr. Mark Manthey		Phone: (708) 792-1282	E-Mail: sandie.fredrick@testamericainc.com	TESTAMERICA	Page: 1 of 1	
Company: Tetra Tech GEO		<b>Analysis Requested</b>			Job #: 500-141695	
Address: 175 N Corporate Drive Suite 100		Due Date Requested:	Field Filtered Sample (Yes or No) <input type="checkbox"/> Perform MS/MSD (Yes or No) <input type="checkbox"/> 8260B - VOCs - Wisconsin <input type="checkbox"/>		Total Number of Containers:	
City: Brookfield		TAT Requested (days): <b>STANDARD</b>				
State, Zip: WI, 53045		PO #:				
Phone: 262-792-1282(Tel)		WO #:				
Email: mark.manthey@tetratech.com						
Project Name: TW-4		Project #: 50006640	Total Number of Containers:		Preservation Codes: A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate            O - AsNaO2 D - Nitric Acid            P - Na2O4S E - NaHSO4                Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid        T - TSP Dodecahydrate I - Ice                        U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Z - other (specify)	
Site: <b>PENTAIR DELAVAN</b>		SSOW#:				
<b>Sample Identification</b>		2018	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/roll, BT=Tissue, A=Air)	Special Instructions/Note:  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">           LAB PREPARED         </div>
		Sample Date		Preservation Code:		
1 2		TW-4	2-28-18 08:50	G	Water	3
		TRIP BLANK	—	G DI	Water	1
<b>Possible Hazard Identification</b>		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by: <i>[Signature]</i>		Date/Time: 3-2-18 12:30	Company: TESTAMERICA	Received by: <i>[Signature]</i> Date/Time: 3-2-18 12:30 Company: TA		
Relinquished by: <i>[Signature]</i>		Date/Time: 3-2-18 1700	Company: TA	Received by: <i>[Signature]</i> Date/Time: 03/03/18 1045 Company: TESTAMERICA		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0.3 → 1.8		

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## Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 500-141695-1

**Login Number: 141695**

**List Source: TestAmerica Chicago**

**List Number: 1**

**Creator: Sanchez, Ariel M**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

