

September 17, 2018  
Discharge Monitoring Report #179  
(117-3005035.05)

Mr. Ralph Erickson, Pretreatment Coordinator  
Madison Metropolitan Sewerage District  
1610 Moorland Road  
Madison, WI 53713-3398

RE: August 2018 Discharge Monitoring Report, Hydraulic Barrier System, Hydrite Chemical Co., Cottage Grove, Wisconsin

Dear Mr. Erickson:

Tetra Tech, on behalf of Hydrite Chemical Co., has prepared this discharge monitoring report to comply with the reporting requirements listed in Part 3 of the reissued Wastewater Discharge Permit for the Hydrite Chemical Co. Cottage Grove facility Hydraulic Barrier System (Permit No. NTO-88.06). This report provides information on the operation history and discharge monitoring results for the Hydraulic Barrier System for the month of August 2018. The following information is being provided in accordance with Section 3.01 of Part 3 (Reporting) of the reissued Wastewater Discharge Permit:

- Sample Type: Groundwater
- Place sample collected: Sample tap on the hydraulic barrier system effluent line located in the manhole east of the 110 South Main Street lift station.
- Date and time the sample was collected: August 7, 2018 at 2:30 pm.
- The person that collected the sample: Todd Thomson, Senior Environmental Technician, Tetra Tech.
- The persons and laboratory performing the analyses: Pace Analytical Services Chemists, Pace Analytical Services, Inc., Green Bay, Wisconsin.
- Dates the analyses were performed and analytical techniques used:  
Analyses performed by Pace Analytical Services, Inc.:
  1. Volatile Organic Compounds (VOCs) by EPA Method 8260, August 10, 2018.
  2. Chloride by EPA Method 300.0, August 13, 2018.

Analysis performed in the field by Tetra Tech personnel:

1. Field pH, August 7, 2018.

The effluent sampling and analysis form containing the field pH result for the effluent sample and the equipment calibration form documenting the successful calibration of the instrument used to measure the effluent sample pH in the field are included in Attachment A.

- The laboratory analytical results for the monthly effluent sample collected from the hydraulic barrier system during this reporting period are included in Attachment A to this report and are summarized on Table 1.
- Total VOCs time series charts for the effluent samples collected from the hydraulic barrier system are provided as Chart 1 and Chart 2. Chart 1 displays the total VOCs concentrations and average pumping rates for the barrier system from 2003 to present, which is the year the barrier system was brought on-line. Chart 2 displays the total VOCs concentrations and average pumping rates for the barrier system from 2008 to present. A chart showing the total mass of VOCs and chlorinated VOCs discharged to the sanitary sewer is provided as Chart 3.
- The current month discharge and cumulative total discharge volumes are provided below:

Reporting Period	Groundwater Discharge Volume (gallons)
August 2018 Discharge Volume (July 31 through August 31, 2018)	4,944,931
Cumulative Total Discharge Volume (October 8, 2003 through August 31, 2018)	845,481,122

Hydraulic Barrier System Operation and Maintenance History for the Month of August 2018

Groundwater was pumped from extraction wells P-128, P-130, and P-164 during this reporting period. Total flow readings taken from the 3-inch Badger Magnetoflow® electromagnetic water meter (mag meter) indicate the hydraulic barrier system operated at an average pumping rate of 123 gallons per minute (gpm) in August.

The pumping rate of extraction well P-128 was approximately 33.5 gpm in August. Meter readings were not able to be collected from the water meter in the manhole of extraction well P-130 during this reporting period because the wetland in which P-130 is located was flooded due to the heavy rainfall that occurred during the month of August. The pumping rate for extraction well P-164 is calculated by subtracting the meter readings obtained from the water meters on the discharge lines of extraction wells P-128 and P-130 from the total system flow readings of the mag meter. Pumping rates for P-164 could therefore not be calculated for this reporting period because meter readings could not be obtained from the P-130 water meter.

Occasions when the barrier system was shut down and re-started are listed below:

- Village of Cottage Grove Public Works Department personnel performed a test of the backup generator in the 110 South Main Street lift station building on Tuesday, August 7<sup>th</sup>. The hydraulic barrier system automatically shut down during the generator test and was re-started the same day by Tetra Tech personnel after the generator tests were completed.
- The barrier system automatically shut down on several occasions due to high lift station wet well water level alarm condition caused by heavy rainfall. The hydraulic barrier system was re-started by Hydrite Chemical Cottage Grove facility personnel or Tetra Tech personnel after the high water level alarm conditions were addressed by Village of Cottage Grove Public Works Department personnel. The shut-down and re-start dates and times are listed below:
  1. From 9:30 am on Friday, August 17<sup>th</sup> 9:30 am to 12:06 pm the same day.
  2. From 4:15 pm on Monday, August 20<sup>th</sup> to 11:34 am on Tuesday, August 21<sup>st</sup>.
  3. From 1:05 pm on Tuesday, August 21<sup>st</sup> to 8:20 am on Wednesday, August 22<sup>nd</sup>.
  4. From 7:45 am on Friday, August 24<sup>th</sup> to 11:34 am the same day.
  5. From 10:00 am on Wednesday, August 29<sup>th</sup> to 12:17 pm the same day.
- The failure of the electric probes on lift station pumps #1 and #2 caused the hydraulic barrier system to automatically shut down 1:30 pm on Friday, August 31<sup>st</sup>. The barrier system was re-started the same day by Hydrite Chemical personnel at 3:07 pm after the probes were repaired by Village of Cottage Grove Public Works Department personnel.

This report was prepared by,

**Tetra Tech**



Associate Hydrogeologist  
encl.

cc: Mr. Chris Hampton – Town of Cottage Grove  
Mr. Thomas J. Miazga - Hydrite Chemical Co.  
Mr. Raymond R. Krueger - Michael, Best & Friedrich, LLP  
Mr. JJ Larson - Village of Cottage Grove (Electronic copy via email.)  
Mr. Michael R. Schmoller – Wisconsin Department of Natural Resources (Electronic copy via email.)

**TABLE  
AND CHARTS**

Table 1. Summary of Hydraulic Barrier System Effluent Monitoring VOCs and Chloride Analytical Results, Hydrite Chemical Co., Cottage Grove Facility

Sample Identification			EFFLUENT		
Lab Sample Identification			40173803001		
Date Sample Collected			08/07/18		
Dilution Factor for VOCs			10		
COMPOUND	Units	Target Detection Limits	NR140 ES	NR140 PAL	
1,1,1-Trichloroethane	ug/L	0.50	200	40	94.8
2-Butanone (MEK)	ug/L	3.0	460	90	U
4-Methyl-2-Pentanone (MIBK)	ug/L	2.1	500	50	U
Acetone	ug/L	3.0	1000	200	U
cis-1,2-Dichloroethene	ug/L	0.26	70	7	691
Methylene chloride	ug/L	0.23	5.0	0.5	9.6 J
Tetrachloroethene	ug/L	0.50	5.0	0.5	5.6 J
Toluene	ug/L	0.50	1000	200	63.7
Trichloroethene	ug/L	0.33	5.0	0.5	21.0
Vinyl chloride	ug/L	0.18	0.2	0.02	19.2
Xylenes (total)	ug/L	2.6	10000	1000	34.2
TOTAL VOCs	ug/L				939.1
Total Chlorinated VOCs	ug/L				841.2
Chloride	mg/L	2.5	250	125	41.8

Notes:

VOCs - Volatile organic compounds.

Blank spaces indicate the compound was analyzed but not detected. The detection limits for the VOCs are equal to the target detection limits multiplied by the corresponding dilution factor for each sample.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 - Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

U - Indicates the compound was analyzed but not detected.

X - Analyte was above the QC limits for the continuing calibration check.

ug/L - micrograms per liter which is equivalent to parts per billion (ppb)

NR140 ES - The compound's Enforcement Standard as listed in Chapter NR140 of the Wisconsin Administrative Code.

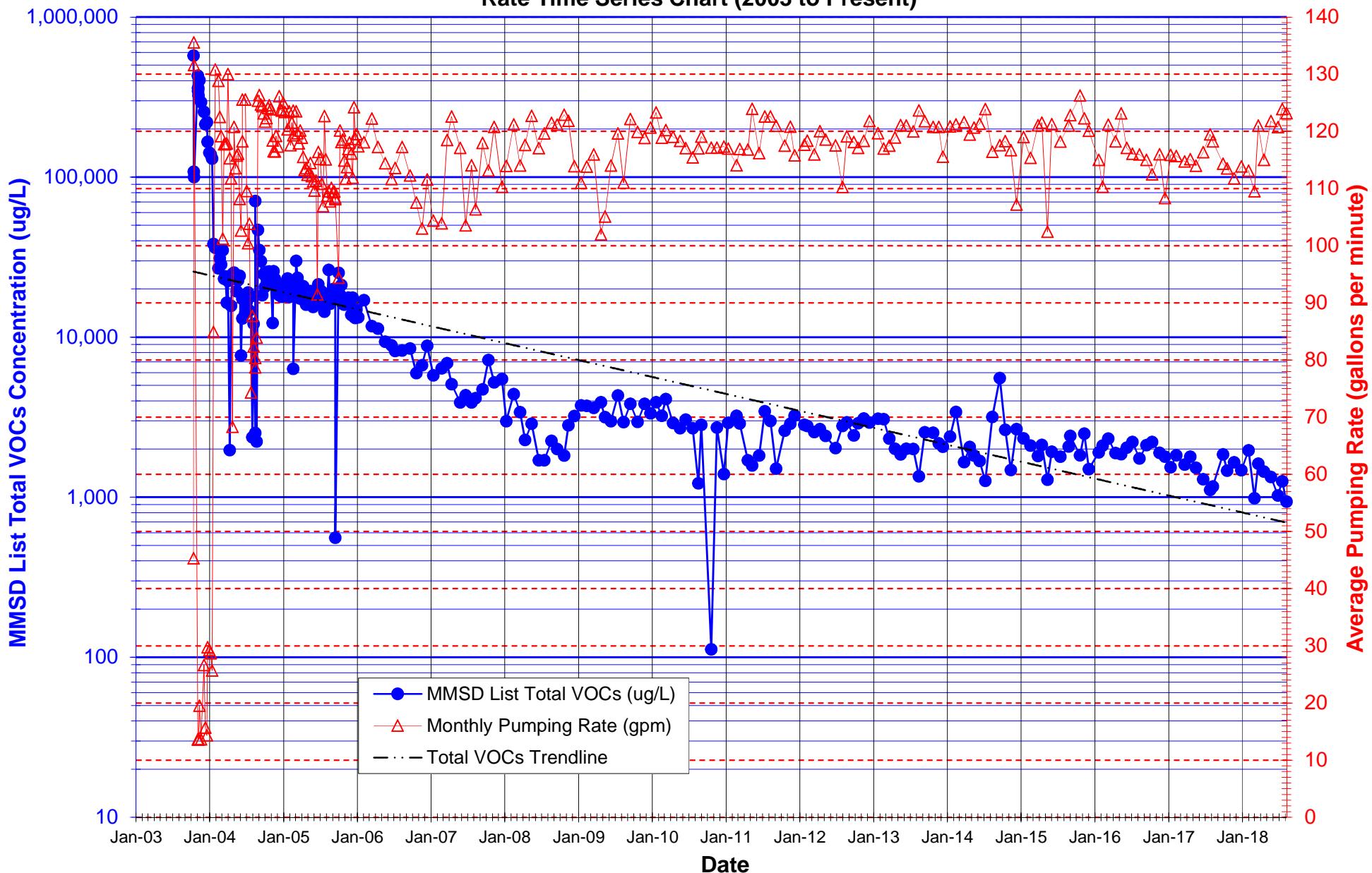
NR140 PAL - The compound's Preventive Action Limit as listed in Chapter NR140 of the Wisconsin Administrative Code.

Madison Metropolitan Sewerage District Total VOCs discharge limit for hydraulic barrier system = 10,000 ug/L or 10 mg/L (as of 12/13/2016).

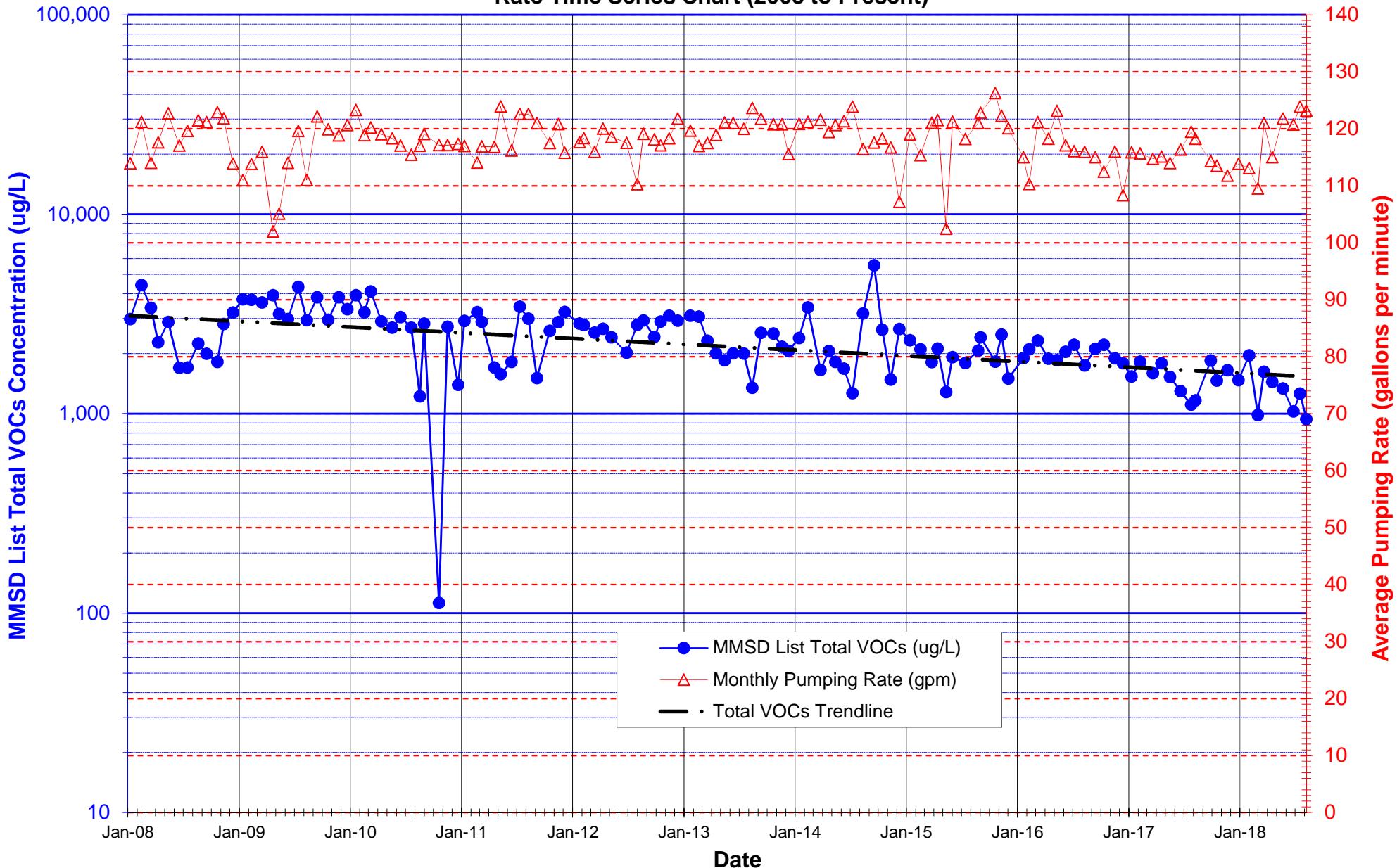
The Madison Metroplitan Sewerage District set no discharge limit for chloride, but it is a parameter of concern.

"Effluent" samples are collected from the sample spigot on the combined effluent discharge line for the barrier system located in the manhole by the Village of Cottage Grove lift station.

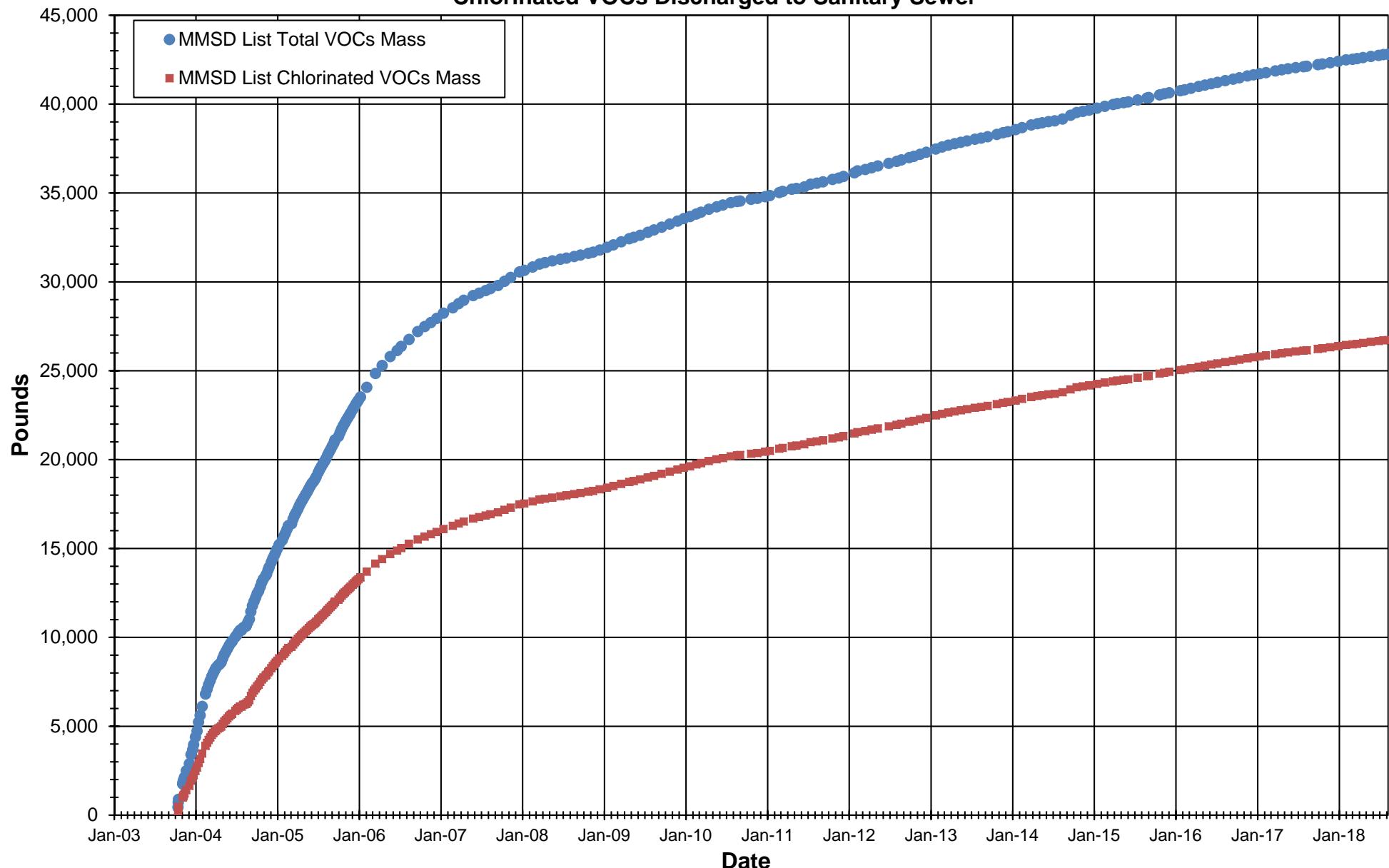
**Chart 1. Hydrite Chemical Co. Hydraulic Barrier System MMSD List Total VOCs and Average Pumping Rate Time Series Chart (2003 to Present)**



**Chart 2. Hydrite Chemical Co. Hydraulic Barrier System MMSD List Total VOCs and Average Pumping Rate Time Series Chart (2008 to Present)**



**Chart 3. Hydrite Chemical Co. Hydraulic Barrier System Cumulative Mass of MMSD List Total Vocs and Chlorinated VOCs Discharged to Sanitary Sewer**



**ATTACHMENT A**  
**HYDRAULIC BARRIER SYSTEM**  
**EFFLUENT SAMPLE FIELD FORMS AND**  
**LABORATORY ANALYTICAL REPORT**

**TETRA TECH REMEDIATION SYSTEM EFFLUENT WATER QUALITY SAMPLING AND ANALYSIS FORM**

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Hydrite Chemical Co., Cottage Grove Facility Layer 5 Hydraulic Barrier System Monitoring	Temp. & pH	Hanna Combo
PROJECT NO.	117-3005035.05	Conductivity	Hanna Combo
LOCATION	Cottage Grove, WI	ORP	NA
PERSONNEL	<i>Todd M. Thompson</i>	DO	NA
SAMPLE ID	Effluent		
WATER TYPE	Groundwater		
DATE (month/day/year)	8-7-18		
CLOCK TIME (Military)	14:30		
FLOW METER READING (gallons)	12326425		
FLOW RATE (gpm)	124.4		
SAMPLING DEVICE	Sample Spigot on 6-inch discharge line		
FIELD TEMPERATURE (°C)	15.5		
pH	6.98		
ELECTRICAL CONDUCTIVITY at 25° C (µS/cm)	731		
ORP (mV)	NM		
DISSOLVED OXYGEN (ppm)	NM		
DISSOLVED OXYGEN (% Sat.)	NM		
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)		
TCL VOCs (Method SW846 8260B)	3-40 ml; G; HCL-L; No		
Chloride (Method 300.0)	250-ml; P; None; No		
NAME OF LABORATORY	Pace Analytical		
DATE SENT TO LAB	8-8-18		
SAMPLER'S NAME	<i>TMT</i>		

# TETRA TECH EQUIPMENT CALIBRATION FORM

Equipment Make		HANNA Instruments		
Equipment Model		HI 98129 pH/EC/TDC/Temperature Meter		
Tetra Tech GEO ID Number		1		
DATE	TIME	CALIBRATION MEDIA	RESULTS	COMMENTS
8-7-18	14:05	pH 4.0 and pH 7.0 buffer solutions	Calibration successful	
8-7-18	14:05	1,413 µs conductivity calibration solution	Calibration successful	
		pH 4.0 and pH 7.0 buffer solutions	Calibration successful	
		1,413 µs conductivity calibration solution	Calibration successful	
		pH 4.0 and pH 7.0 buffer solutions	Calibration successful	
		1,413 µs conductivity calibration solution	Calibration successful	
		pH 4.0 and pH 7.0 buffer solutions	Calibration successful	
		1,413 µs conductivity calibration solution	Calibration successful	
		pH 4.0 and pH 7.0 buffer solutions	Calibration successful	
		1,413 µs conductivity calibration solution	Calibration successful	

August 17, 2018

Mark Manthey  
Tetra Tech Geo  
175 North Corporate Drive  
Suite 100  
Brookfield, WI 53045

RE: Project: 117-3005035.05 HYDRITE COTTAGE  
Pace Project No.: 40173803

Dear Mark Manthey:

Enclosed are the analytical results for sample(s) received by the laboratory on August 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Brian Basten  
brian.basten@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## CERTIFICATIONS

Project: 117-3005035.05 HYDRITE COTTAGE  
Pace Project No.: 40173803

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302  
Florida/NELAP Certification #: E87948  
Illinois Certification #: 200050  
Kentucky UST Certification #: 82  
Louisiana Certification #: 04168  
Minnesota Certification #: 055-999-334  
New York Certification #: 12064  
North Dakota Certification #: R-150

Virginia VELAP ID: 460263  
South Carolina Certification #: 83006001  
Texas Certification #: T104704529-14-1  
Wisconsin Certification #: 405132750  
Wisconsin DATCP Certification #: 105-444  
USDA Soil Permit #: P330-16-00157  
Federal Fish & Wildlife Permit #: LE51774A-0

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40173803001	EFFLUENT	Water	08/07/18 14:30	08/09/18 09:20
40173803002	TRIP BLANK	Water	08/07/18 00:00	08/09/18 09:20

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## SAMPLE ANALYTE COUNT

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40173803001	EFFLUENT	EPA 8260	HNW	38
		EPA 300.0	HMB	1
40173803002	TRIP BLANK	EPA 8260	HNW	38

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 117-3005035.05 HYDRITE COTTAGE  
Pace Project No.: 40173803

Sample: EFFLUENT	Lab ID: 40173803001	Collected: 08/07/18 14:30	Received: 08/09/18 09:20	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260								
Acetone	<27.4	ug/L	91.4	27.4	10		08/10/18 11:25	67-64-1	
Benzene	<2.5	ug/L	8.2	2.5	10		08/10/18 11:25	71-43-2	
Bromodichloromethane	<3.6	ug/L	12.1	3.6	10		08/10/18 11:25	75-27-4	
Bromoform	<39.7	ug/L	132	39.7	10		08/10/18 11:25	75-25-2	
Bromomethane	<9.7	ug/L	32.4	9.7	10		08/10/18 11:25	74-83-9	
2-Butanone (MEK)	<29.4	ug/L	97.9	29.4	10		08/10/18 11:25	78-93-3	
Carbon disulfide	<3.7	ug/L	12.5	3.7	10		08/10/18 11:25	75-15-0	
Carbon tetrachloride	<1.7	ug/L	5.5	1.7	10		08/10/18 11:25	56-23-5	
Chlorobenzene	<7.1	ug/L	23.7	7.1	10		08/10/18 11:25	108-90-7	
Chloroethane	65.4	ug/L	44.7	13.4	10		08/10/18 11:25	75-00-3	
Chloroform	<12.7	ug/L	42.5	12.7	10		08/10/18 11:25	67-66-3	
Chloromethane	<21.9	ug/L	73.0	21.9	10		08/10/18 11:25	74-87-3	
Dibromochloromethane	<26.0	ug/L	86.7	26.0	10		08/10/18 11:25	124-48-1	
1,1-Dichloroethane	176	ug/L	9.1	2.7	10		08/10/18 11:25	75-34-3	
1,2-Dichloroethane	<2.8	ug/L	9.3	2.8	10		08/10/18 11:25	107-06-2	
1,1-Dichloroethene	41.2	ug/L	8.2	2.4	10		08/10/18 11:25	75-35-4	
cis-1,2-Dichloroethene	691	ug/L	9.0	2.7	10		08/10/18 11:25	156-59-2	
trans-1,2-Dichloroethene	<10.9	ug/L	36.4	10.9	10		08/10/18 11:25	156-60-5	
1,2-Dichloropropane	<2.8	ug/L	9.4	2.8	10		08/10/18 11:25	78-87-5	
cis-1,3-Dichloropropene	<36.3	ug/L	121	36.3	10		08/10/18 11:25	10061-01-5	
trans-1,3-Dichloropropene	<43.7	ug/L	146	43.7	10		08/10/18 11:25	10061-02-6	
Ethylbenzene	7.3	ug/L	7.3	2.2	10		08/10/18 11:25	100-41-4	
2-Hexanone	<24.6	ug/L	81.9	24.6	10		08/10/18 11:25	591-78-6	
Methylene Chloride	9.6J	ug/L	19.4	5.8	10		08/10/18 11:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	<15.3	ug/L	51.0	15.3	10		08/10/18 11:25	108-10-1	
Styrene	<4.7	ug/L	15.5	4.7	10		08/10/18 11:25	100-42-5	
1,1,2,2-Tetrachloroethane	<2.8	ug/L	9.2	2.8	10		08/10/18 11:25	79-34-5	
Tetrachloroethene	5.6J	ug/L	10.9	3.3	10		08/10/18 11:25	127-18-4	
Toluene	63.7	ug/L	5.7	1.7	10		08/10/18 11:25	108-88-3	
1,1,1-Trichloroethane	94.8	ug/L	8.2	2.4	10		08/10/18 11:25	71-55-6	
1,1,2-Trichloroethane	<5.5	ug/L	18.4	5.5	10		08/10/18 11:25	79-00-5	
Trichloroethene	21.0	ug/L	8.5	2.6	10		08/10/18 11:25	79-01-6	
Vinyl acetate	<30.9	ug/L	103	30.9	10		08/10/18 11:25	108-05-4	
Vinyl chloride	19.2	ug/L	5.8	1.7	10		08/10/18 11:25	75-01-4	
Xylene (Total)	34.2	ug/L	30.0	15.0	10		08/10/18 11:25	1330-20-7	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	92	%	70-130		10		08/10/18 11:25	460-00-4	
Dibromofluoromethane (S)	98	%	70-130		10		08/10/18 11:25	1868-53-7	
Toluene-d8 (S)	101	%	70-130		10		08/10/18 11:25	2037-26-5	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	41.8	mg/L	10.0	2.5	5		08/13/18 14:56	16887-00-6	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

Sample: TRIP BLANK	Lab ID: 40173803002	Collected: 08/07/18 00:00	Received: 08/09/18 09:20	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260								
Acetone	<2.7	ug/L	9.1	2.7	1		08/10/18 09:59	67-64-1	
Benzene	<0.25	ug/L	0.82	0.25	1		08/10/18 09:59	71-43-2	
Bromodichloromethane	<0.36	ug/L	1.2	0.36	1		08/10/18 09:59	75-27-4	
Bromoform	<4.0	ug/L	13.2	4.0	1		08/10/18 09:59	75-25-2	
Bromomethane	<0.97	ug/L	3.2	0.97	1		08/10/18 09:59	74-83-9	
2-Butanone (MEK)	<2.9	ug/L	9.8	2.9	1		08/10/18 09:59	78-93-3	
Carbon disulfide	<0.37	ug/L	1.2	0.37	1		08/10/18 09:59	75-15-0	
Carbon tetrachloride	<0.17	ug/L	0.55	0.17	1		08/10/18 09:59	56-23-5	
Chlorobenzene	<0.71	ug/L	2.4	0.71	1		08/10/18 09:59	108-90-7	
Chloroethane	<1.3	ug/L	4.5	1.3	1		08/10/18 09:59	75-00-3	
Chloroform	<1.3	ug/L	4.2	1.3	1		08/10/18 09:59	67-66-3	
Chloromethane	<2.2	ug/L	7.3	2.2	1		08/10/18 09:59	74-87-3	
Dibromochloromethane	<2.6	ug/L	8.7	2.6	1		08/10/18 09:59	124-48-1	
1,1-Dichloroethane	<0.27	ug/L	0.91	0.27	1		08/10/18 09:59	75-34-3	
1,2-Dichloroethane	<0.28	ug/L	0.93	0.28	1		08/10/18 09:59	107-06-2	
1,1-Dichloroethene	<0.24	ug/L	0.82	0.24	1		08/10/18 09:59	75-35-4	
cis-1,2-Dichloroethene	<0.27	ug/L	0.90	0.27	1		08/10/18 09:59	156-59-2	
trans-1,2-Dichloroethene	<1.1	ug/L	3.6	1.1	1		08/10/18 09:59	156-60-5	
1,2-Dichloropropane	<0.28	ug/L	0.94	0.28	1		08/10/18 09:59	78-87-5	
cis-1,3-Dichloropropene	<3.6	ug/L	12.1	3.6	1		08/10/18 09:59	10061-01-5	
trans-1,3-Dichloropropene	<4.4	ug/L	14.6	4.4	1		08/10/18 09:59	10061-02-6	
Ethylbenzene	<0.22	ug/L	0.73	0.22	1		08/10/18 09:59	100-41-4	
2-Hexanone	<2.5	ug/L	8.2	2.5	1		08/10/18 09:59	591-78-6	
Methylene Chloride	<0.58	ug/L	1.9	0.58	1		08/10/18 09:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	<1.5	ug/L	5.1	1.5	1		08/10/18 09:59	108-10-1	
Styrene	<0.47	ug/L	1.6	0.47	1		08/10/18 09:59	100-42-5	
1,1,2,2-Tetrachloroethane	<0.28	ug/L	0.92	0.28	1		08/10/18 09:59	79-34-5	
Tetrachloroethene	<0.33	ug/L	1.1	0.33	1		08/10/18 09:59	127-18-4	
Toluene	<0.17	ug/L	0.57	0.17	1		08/10/18 09:59	108-88-3	
1,1,1-Trichloroethane	<0.24	ug/L	0.82	0.24	1		08/10/18 09:59	71-55-6	
1,1,2-Trichloroethane	<0.55	ug/L	1.8	0.55	1		08/10/18 09:59	79-00-5	
Trichloroethene	<0.26	ug/L	0.85	0.26	1		08/10/18 09:59	79-01-6	
Vinyl acetate	<3.1	ug/L	10.3	3.1	1		08/10/18 09:59	108-05-4	
Vinyl chloride	<0.17	ug/L	0.58	0.17	1		08/10/18 09:59	75-01-4	
Xylene (Total)	<1.5	ug/L	3.0	1.5	1		08/10/18 09:59	1330-20-7	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	91	%	70-130		1		08/10/18 09:59	460-00-4	
Dibromofluoromethane (S)	95	%	70-130		1		08/10/18 09:59	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		08/10/18 09:59	2037-26-5	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

QC Batch:	296860	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	40173803001, 40173803002		

METHOD BLANK: 1734068                          Matrix: Water

Associated Lab Samples: 40173803001, 40173803002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	<0.24	0.82	08/10/18 08:12	
1,1,2,2-Tetrachloroethane	ug/L	<0.28	0.92	08/10/18 08:12	
1,1,2-Trichloroethane	ug/L	<0.55	1.8	08/10/18 08:12	
1,1-Dichloroethane	ug/L	<0.27	0.91	08/10/18 08:12	
1,1-Dichloroethene	ug/L	<0.24	0.82	08/10/18 08:12	
1,2-Dichloroethane	ug/L	<0.28	0.93	08/10/18 08:12	
1,2-Dichloropropane	ug/L	<0.28	0.94	08/10/18 08:12	
2-Butanone (MEK)	ug/L	<2.9	9.8	08/10/18 08:12	
2-Hexanone	ug/L	<2.5	8.2	08/10/18 08:12	
4-Methyl-2-pentanone (MIBK)	ug/L	<1.5	5.1	08/10/18 08:12	
Acetone	ug/L	<2.7	9.1	08/10/18 08:12	
Benzene	ug/L	<0.25	0.82	08/10/18 08:12	
Bromodichloromethane	ug/L	<0.36	1.2	08/10/18 08:12	
Bromoform	ug/L	<4.0	13.2	08/10/18 08:12	
Bromomethane	ug/L	<0.97	3.2	08/10/18 08:12	
Carbon disulfide	ug/L	<0.37	1.2	08/10/18 08:12	
Carbon tetrachloride	ug/L	<0.17	0.55	08/10/18 08:12	
Chlorobenzene	ug/L	<0.71	2.4	08/10/18 08:12	
Chloroethane	ug/L	<1.3	4.5	08/10/18 08:12	
Chloroform	ug/L	<1.3	4.2	08/10/18 08:12	
Chloromethane	ug/L	<2.2	7.3	08/10/18 08:12	
cis-1,2-Dichloroethene	ug/L	<0.27	0.90	08/10/18 08:12	
cis-1,3-Dichloropropene	ug/L	<3.6	12.1	08/10/18 08:12	
Dibromochloromethane	ug/L	<2.6	8.7	08/10/18 08:12	
Ethylbenzene	ug/L	<0.22	0.73	08/10/18 08:12	
Methylene Chloride	ug/L	<0.58	1.9	08/10/18 08:12	
Styrene	ug/L	<0.47	1.6	08/10/18 08:12	
Tetrachloroethene	ug/L	<0.33	1.1	08/10/18 08:12	
Toluene	ug/L	<0.17	0.57	08/10/18 08:12	
trans-1,2-Dichloroethene	ug/L	<1.1	3.6	08/10/18 08:12	
trans-1,3-Dichloropropene	ug/L	<4.4	14.6	08/10/18 08:12	
Trichloroethene	ug/L	<0.26	0.85	08/10/18 08:12	
Vinyl acetate	ug/L	<3.1	10.3	08/10/18 08:12	
Vinyl chloride	ug/L	<0.17	0.58	08/10/18 08:12	
Xylene (Total)	ug/L	<1.5	3.0	08/10/18 08:12	
4-Bromofluorobenzene (S)	%	91	70-130	08/10/18 08:12	
Dibromofluoromethane (S)	%	99	70-130	08/10/18 08:12	
Toluene-d8 (S)	%	100	70-130	08/10/18 08:12	

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

**LABORATORY CONTROL SAMPLE: 1734069**

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	51.0	102	70-133	
1,1,2,2-Tetrachloroethane	ug/L	50	54.4	109	67-130	
1,1,2-Trichloroethane	ug/L	50	54.2	108	70-130	
1,1-Dichloroethane	ug/L	50	47.3	95	70-134	
1,1-Dichloroethene	ug/L	50	49.4	99	75-132	
1,2-Dichloroethane	ug/L	50	51.6	103	73-134	
1,2-Dichloropropane	ug/L	50	53.4	107	79-128	
Benzene	ug/L	50	52.3	105	69-137	
Bromodichloromethane	ug/L	50	52.0	104	70-130	
Bromoform	ug/L	50	47.2	94	64-133	
Bromomethane	ug/L	50	35.1	70	29-123	
Carbon disulfide	ug/L	50	49.8	100	67-153	
Carbon tetrachloride	ug/L	50	50.3	101	73-142	
Chlorobenzene	ug/L	50	52.0	104	70-130	
Chloroethane	ug/L	50	44.6	89	59-133	
Chloroform	ug/L	50	51.8	104	80-129	
Chloromethane	ug/L	50	40.6	81	27-125	
cis-1,2-Dichloroethene	ug/L	50	51.0	102	70-134	
cis-1,3-Dichloropropene	ug/L	50	53.2	106	70-130	
Dibromochloromethane	ug/L	50	50.9	102	70-130	
Ethylbenzene	ug/L	50	55.2	110	86-127	
Methylene Chloride	ug/L	50	45.7	91	72-133	
Styrene	ug/L	50	55.2	110	70-130	
Tetrachloroethene	ug/L	50	51.3	103	70-130	
Toluene	ug/L	50	54.1	108	84-124	
trans-1,2-Dichloroethene	ug/L	50	48.6	97	70-133	
trans-1,3-Dichloropropene	ug/L	50	60.7	121	67-130	
Trichloroethene	ug/L	50	51.3	103	70-130	
Vinyl chloride	ug/L	50	47.2	94	48-134	
Xylene (Total)	ug/L	150	163	109	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Dibromofluoromethane (S)	%			97	70-130	
Toluene-d8 (S)	%			100	70-130	

**MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1734077      1734078**

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max		
		40173779006 Result	Spike Conc.	Spike Conc.	MS Result				RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	<0.24	50	50	52.2	53.5	104	107	70-136	2	20
1,1,2,2-Tetrachloroethane	ug/L	<0.28	50	50	53.5	55.5	107	111	67-133	4	20
1,1,2-Trichloroethane	ug/L	<0.55	50	50	55.1	55.8	110	112	70-130	1	20
1,1-Dichloroethane	ug/L	<0.27	50	50	47.9	49.6	96	99	70-139	3	20
1,1-Dichloroethene	ug/L	<0.24	50	50	50.1	51.7	100	103	72-137	3	20
1,2-Dichloroethane	ug/L	<0.28	50	50	51.7	53.2	103	106	71-137	3	20
1,2-Dichloropropane	ug/L	<0.28	50	50	53.0	55.9	106	112	78-130	5	20

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## QUALITY CONTROL DATA

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

Parameter	Units	40173779006		MS		MSD		1734078				
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
Benzene	ug/L	<0.25	50	50	52.9	54.1	106	108	66-143	2	20	
Bromodichloromethane	ug/L	<0.36	50	50	51.7	53.1	103	106	70-130	3	20	
Bromoform	ug/L	<4.0	50	50	47.3	49.7	95	99	64-134	5	20	
Bromomethane	ug/L	<0.97	50	50	35.9	39.3	72	79	29-136	9	25	
Carbon disulfide	ug/L	<0.37	50	50	51.0	52.8	102	106	67-156	4	21	
Carbon tetrachloride	ug/L	<0.17	50	50	52.1	53.2	104	106	73-142	2	20	
Chlorobenzene	ug/L	<0.71	50	50	52.6	53.9	105	108	70-130	2	20	
Chloroethane	ug/L	<1.3	50	50	46.8	49.3	94	99	58-138	5	20	
Chloroform	ug/L	<1.3	50	50	51.6	53.2	103	106	80-131	3	20	
Chloromethane	ug/L	<2.2	50	50	39.8	42.2	80	84	24-125	6	20	
cis-1,2-Dichloroethene	ug/L	<0.27	50	50	52.7	53.1	105	106	68-137	1	22	
cis-1,3-Dichloropropene	ug/L	<3.6	50	50	53.5	55.9	107	112	70-130	4	20	
Dibromochloromethane	ug/L	<2.6	50	50	51.3	52.9	103	106	70-131	3	20	
Ethylbenzene	ug/L	<0.22	50	50	55.8	57.8	112	116	81-136	3	20	
Methylene Chloride	ug/L	<0.58	50	50	48.0	48.6	95	96	69-137	1	20	
Styrene	ug/L	<0.47	50	50	55.6	57.3	111	115	70-130	3	20	
Tetrachloroethene	ug/L	<0.33	50	50	55.4	56.6	111	113	70-132	2	20	
Toluene	ug/L	<0.17	50	50	54.5	55.5	109	111	81-130	2	20	
trans-1,2-Dichloroethene	ug/L	<1.1	50	50	49.2	50.9	98	102	70-136	3	20	
trans-1,3-Dichloropropene	ug/L	<4.4	50	50	62.3	63.3	125	127	67-130	2	20	
Trichloroethene	ug/L	<0.26	50	50	53.6	54.1	107	108	70-131	1	20	
Vinyl chloride	ug/L	<0.17	50	50	48.6	50.3	97	101	46-134	3	20	
Xylene (Total)	ug/L	<1.5	150	150	166	171	110	114	70-134	3	20	
4-Bromofluorobenzene (S)	%						98	97	70-130			
Dibromofluoromethane (S)	%						97	95	70-130			
Toluene-d8 (S)	%						102	101	70-130			

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## QUALITY CONTROL DATA

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

QC Batch:	296938	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
Associated Lab Samples: 40173803001			

METHOD BLANK: 1734459 Matrix: Water

Associated Lab Samples: 40173803001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	08/13/18 13:06	

LABORATORY CONTROL SAMPLE: 1734460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.5	103	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 1734461 1734462

Parameter	Units	40173803001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Chloride	mg/L	41.8	100	100	142	142	101	101	90-110	0	15	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 1735111 1735112

Parameter	Units	40173851002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Chloride	mg/L	4.9	20	20	24.9	25.1	100	101	90-110	1	15	

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## QUALIFIERS

Project: 117-3005035.05 HYDRITE COTTAGE

Pace Project No.: 40173803

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### 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 and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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.

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 117-3005035.05 HYDRITE COTTAGE  
 Pace Project No.: 40173803

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40173803001	EFFLUENT	EPA 8260	296860		
40173803002	TRIP BLANK	EPA 8260	296860		
40173803001	EFFLUENT	EPA 300.0	296938		

## REPORT OF LABORATORY ANALYSIS

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*(Please Print Clearly)*

Company Name:	TETRA Tech
Branch/Location:	Brakfield
Project Contact:	Mark Manthey
Phone:	(212) 792-1282
Project Number:	117-365036.05
Project Name:	Hydrotec Cypress Grove
Project State:	LSI.
Sampled By (Print):	Todd M. Hartley
Sampled By (Sign):	
PO #:	
Regu	



# CHAIN OF CUSTODY

## **UPPER MIDWEST REGION**

MN: 612-607-1700 WI: 920-469-24

Page 1 of 1

02965  
of 24

**COC No**

Quote #:		
Mail To Contact:	MARK MANNHEIM	
Mail To Company:	TETRA TECH	
Mail To Address:	175 N Corporate Dr. Suite 100 BROOKFIELD WI 53045	
Invoice To Contact:	Same AS ABOVE	
Invoice To Company:		
Invoice To Address:		
Invoice To Phone:		
CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
<i>LAB PREPARED</i>		
<p style="text-align: center;">* NOTE *</p> <p><i>See Below Boston for Special Hydrite Cottrell Gravel Vac List.</i></p>		

Rush Turnaround Time Requested - Prelims  
(Rush TAT subject to approval/surcharge)

Date Needed: 5/1/2023

Transmit Prelim Rush Results by (complete what you want):

Email #1:

Email #2:

**Telephone:**

Fax:

**Samples on HOLD are subject to  
special pricing and release of liability.**

Relinquished By: <i>Mary Janin</i>	Date/Time: 8-8-18 0800	Received By: <i>Mary Janin</i>	Date/Time: 8/8/18 10:35	PACE Project No. 40173803
Relinquished By: <i>Mary Janin</i>	Date/Time: 8/8/18 1330	Received By:	Date/Time:	Receipt Temp = ROT °C
Relinquished By: <i>CD Logistics</i>	Date/Time: 8-9-18 0900	Received By: <i>Susan Wyle</i>	Date/Time: 8-9-18 0900	Sample Receipt pH OK / Adjusted
Relinquished By: <i>CD Logistics</i>	Date/Time: 8-9-18 0900	Received By: <i>Susan Wyle</i>	Date/Time: 8-9-18 0900	Cooler Custody Seal Present / Not Present Intact / Not Intact
Relinquished By:	Date/Time:	Received By:	Date/Time:	

Client Name:

*Tetra Tech*

Sample Preservation Receipt Form

Project #

*Y0173803*

All containers needing preservation have been checked and noted below:  Yes  No  N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Initial when completed:

Date/  
Time:

Pace Lab #	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																		3											2.5 / 5 / 10				
002																		1											2.5 / 5 / 10				
003																													2.5 / 5 / 10				
004																													2.5 / 5 / 10				
005																													2.5 / 5 / 10				
006																													2.5 / 5 / 10				
007																													2.5 / 5 / 10				
008																													2.5 / 5 / 10				
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015																													2.5 / 5 / 10				
016																													2.5 / 5 / 10				
017																													2.5 / 5 / 10				
018																													2.5 / 5 / 10				
019																													2.5 / 5 / 10				
020																													2.5 / 5 / 10				

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: \_\_\_\_\_ Headspace in VOA Vials (>6mm) :  Yes  No  N/A \*If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	500 ml poly unpreserved

### Sample Condition Upon Receipt Form (SCUR)

Project #

**WO# : 40173803**

Client Name: Tetra Tech

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Waltco  
 Client  Pace  Other: \_\_\_\_\_



40173803

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used SR - N/A Type of Ice: Wet Blue Dry None

Cooler Temperature Uncorr: 40.1 /Corr: \_\_\_\_\_  Samples on ice, cooling process has begun

Temp Blank Present:  yes  no

Biological Tissue is Frozen:  yes  no

Person examining contents:

Date: 8-9-18  
Initials: gm

Chain of Custody Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time: - VOA Samples frozen upon receipt	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume: For Analysis: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		8.
Correct Containers Used: -Pace Containers Used: -Pace IR Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): <u>387</u>		

#### Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: BB

Date: 8-9-18