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GLADDING CORDAGE SITE QUARTERLY REPORT

SITE 7-09-009

Second Quarter 2018

November 2018

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Second Quarter 2018

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CONTENTS

Acronyms and Abbreviations.....	iii
1 Introduction	1
2 Site Description	2
3 Operation and Maintenance.....	3
3.1 Treatment Plant Upgrades.....	3
3.1.1 Variable Frequency Drive	3
3.1.2 Treatment Plant Controls	3
3.1.3 Geothermal Heat Exchanger	4
3.2 Treatment Plant Operation	4
3.3 Treatment System Sampling	4
3.3.1 Influent Sample Results	5
3.3.2 Effluent Sample Results	5
4 Groundwater Monitoring Program.....	6
5 Recommendations	7
6 Summary.....	8
7 References.....	9

TABLES

Table 3-1	Treatment System Status and Flow Summary
Table 3-2	Groundwater Treatment System VOCs (RW-1)
Table 3-3	Groundwater Treatment System VOCs (RW-2)
Table 3-4	Groundwater Treatment System VOCs (Effluent)

FIGURES

Figure 2-1	Site Location
Figure 3-1	Treatment System Influent Sample Concentration (1,1,1-TCA)

APPENDICES

- A PLC Facsimile Reports
- B O&M Checklists
- C Analytical Reporting Forms

ACRONYMS AND ABBREVIATIONS

Amsl	above mean sea level
BTEX	Benzene, toluene, ethylbenzene, and xylene.
Ft	feet
GPM	gallons per minute
GAP	generally accepted procedure
HZ	hertz
µg/L	micrograms per liter
NYSDEC	New York State Department of Environmental Conservation
O&M	operation and maintenance
PDB	passive diffusion bag
PLC	programmable logic controller
PCE	Tetrachloroethene
USEPA	United States Environmental Protection Agency
VFD	variable frequency drive
VOC	volatile organic compound
1,1-DCA	1,2-dichloroethane
1,1-DCE	1,2-dichloroethene
1,1,1-TCA	1,1,1-trichloroethane

1 INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) has issued a Work Assignment (# D007618-9) to Arcadis CE, Inc. (Arcadis) for Operation, Maintenance, and Monitoring at the Gladding Cordage Site (Site # 7-09-009). This Quarterly Report has been prepared in accordance with the NYSDEC-approved Work Plan to summarize second quarter 2018 site activities.

2 SITE DESCRIPTION

The Gladding Cordage Site is located on Ridge Road, South Otselic, Chenango County, New York (Figure 2-1), along the western bank of the Otselic River. The site contains an active braided wire and rope manufacturing facility that has been in operation since 1892.

3 OPERATION AND MAINTENANCE

On August 23, 2007, the NYSDEC provided a training session to Arcadis personnel on the operation and maintenance (O&M) of the groundwater treatment plant at the Gladding Cordage Site. Since then, Arcadis has maintained operation of the groundwater treatment plant. This includes the operation, maintenance, and influent/effluent sampling in accordance with the Site Management Plan (SMP) and NYSDEC O&M manual (Operation and Maintenance Manual, Volume I, Gladding Cordage Site, Site 7-09-009, TAMS Consultants, Inc., 1996) (O&M Manual).

3.1 Treatment Plant Upgrades

3.1.1 Variable Frequency Drive

A variable frequency drive (VFD) was installed on January 9, 2008 to regulate the speed of the air stripper blower motor for reduced energy usage. Following the installation of the VFD, effluent samples were collected at various blower motor frequencies (speeds) to evaluate the minimum blower frequency required for the treatment plant to effectively treat groundwater extracted from the source area. Additional sampling was conducted again in February 2008 to further optimize the air stripper blower speed. Based on the results, the VFD setting was reduced to 42 hertz (HZ) beginning in March 2008. However, based on the detection of low-level volatile organic compounds (VOCs) in effluent samples from the treatment system, the VFD setting was subsequently increased to 46 HZ in September 2010 and was maintained at that frequency until November 19, 2014.

Based on a general trend of lower concentrations of VOCs in influent treatment system samples since September 2010, the NYSDEC authorized a reduction of the VFD frequency to 44 HZ in an attempt to further optimize treatment plant operations and reduce electric usage. The VFD frequency was lowered to 44 HZ on November 19, 2014. Following approximately one-half hour of operation, post-treatment effluent samples were collected in accordance with the Work Plan (see Section 3.2.1). Based on a review of post-treatment effluent sample data from November 19, 2014, 1,1,1-Trichloroethane (1,1,1-TCA) and toluene were detected with the air stripper blower operating at 44 HZ, but at concentrations below the corresponding NYSDEC Class GA Standards. The NYSDEC was notified of the VOC detections and the blower motor frequency was subsequently increased to 46 HZ and has been maintained at that level since the December 18, 2014 O&M event.

3.1.2 Treatment Plant Controls

In August 2011, the NYSDEC authorized construction and installation of a new treatment plant controls system. The new control system is designed to provide remote access to treatment plant operating parameters and improve reliability of the groundwater remediation system. The treatment plant was shut down to begin repairs and upgrades on January 30, 2012 by Aztech Technologies, Inc. (Aztech). The upgrades to the treatment system controls were completed and the treatment plant resumed operation on March 22, 2012. The treatment plant functions are controlled and monitored using an EOS Research Ltd. ProControl Programmable Logic Controller (PLC). The interface software allows remote connection to the PLC via analog phone line. The PLC and interface software also allows the treatment system to be started or stopped remotely. The PLC is programmed to send a facsimile with the status of system inputs and

outputs on a daily basis. If input and/or output device values exceed the defined operating parameters, an alarm condition is set and the corresponding alarm information is sent via facsimile to the system user (i.e. Arcadis).

3.1.3 Geothermal Heat Exchanger

The NYSDEC authorized the installation of a geothermal heat exchanger to provide climate control (heating and humidity) for the treatment system building. The treatment plant was shut down to begin installation of the system on May 8, 2012 by Aztech. The geothermal heat exchanger installation and testing was completed on May 10, 2012. The heat-exchanger uses groundwater from the treatment plant as a geo-thermal energy source.

3.2 Treatment Plant Operation

As shown on PLC facsimile reports (Appendix A) and O&M Checklist and Operation Logs (Appendix B), the Gladding Cordage groundwater treatment system shut down in the second quarter from April 5 to May 23, 2018 due to a deteriorated utility pole which fell during a storm and pulled down the power feed and communications line to the treatment building. In May 2018, electrical and utility pole repairs were completed by Syracuse Utilities and Bagnall Electric, respectively. The repairs included installing a new utility pole, security light, and electric cables from the existing meter pan to the treatment building power panel. The system was restarted on May 23, 2018. The system shut down in June due to a power interruption and was restarted on June 22, 2018. However, since phone service had not yet been repaired, the PLC could not communicate the alarm. Therefore, the duration of the shutdown is not known. Phone service was restored to the site in late June 2018.

The average monthly flow rates and total flow volumes for the second quarter 2018 operating period are summarized in Table 3-1. As shown in Table 3-1, the average flow rate from recovery well RW-1 was 18.8 gallons per minute (GPM). However, the flow transmitter for RW-1 has stopped working and will need to be replaced pending NYSDEC budget approval. Therefore, the flow total from RW-1 is greater than the values reported by the PLC. The average flow from RW-2 was approximately 24 GPM. Based on the total flow values, approximately 1.4 million gallons of water were treated and discharged to the Otselic River between April and June 2018.

3.3 Treatment System Sampling

Influent and effluent groundwater samples were collected from the Gladding Cordage treatment system in accordance with the SMP and submitted to Contest Analytical following chain-of-custody protocols. Each sample was analyzed for VOCs by United States Environmental Protection Agency (USEPA) Method 624. Analytical Reporting Forms are provided in Appendix C. Influent and effluent groundwater samples were not collected in April and May 2018 as the treatment system was shut down as a result of the power pole failure.

3.3.1 Influent Sample Results

Table 3-2 and Table 3-3 summarize influent VOC sample results from recovery wells RW-1 and RW-2, respectively. Figure 3-1 provides a summary of 1,1,1-TCA concentrations in samples from recovery wells RW-1 and RW-2 since September 2007.

Table 3-2 and Figure 3-1 show that the concentrations of 1,1,1-TCA in samples from recovery well RW-1 increased from 37 micrograms per liter (ug/L) in March 2018 to 41 ug/L in June 2018. The concentration of 1,1,1-TCA for recovery well RW-2 fluctuated from 29 ug/L (March 2018) to 50 ug/L (June 2018). Table 3-3 and Figure 3-1 show that the concentrations of 1,1,1-TCA in the samples from recovery wells RW-1 and RW-2 are within the range of historic concentrations and exceed the corresponding NYSDEC Class GA Standard of 5 µg/L.

As shown in Tables 3-2 and 3-3, 1,1-dichloroethane (1,1-DCA) and 1,1-dichloroethene (1,1-DCE) were detected in the second quarter 2018 samples from recovery wells RW-1 and RW-2. Consistent with previous results, the concentrations of these compounds were below the respective NYSDEC Class GA standard of 5 µg/L.

3.3.2 Effluent Sample Results

Table 3-4 summarizes laboratory analytical data for effluent samples collected from the treatment system. As shown in Table 3-4, no VOCs were detected in the June 2018 effluent sample.

Based on influent sample concentrations and total flow volumes from the Gladding Cordage treatment system, approximately 0.3 pounds of VOCs were removed by the treatment system during the second quarter 2018.

4 GROUNDWATER MONITORING PROGRAM

Groundwater samples are collected on a five-quarter sampling interval in accordance with the SMP. Groundwater sampling was conducted in October 2017 to provide information on groundwater quality, monitor contaminant migration in groundwater, and assess hydrogeologic site conditions, including groundwater flow. At the request of NYSDEC, groundwater samples were also analyzed for Perfluorinated Alkyl Substances (PFAS) and 1,4-Dioxane. The results of the sampling event were summarized in the fourth quarter 2017 Gladding Cordage Site Quarterly Report (Arcadis, 2018). The next groundwater sampling event is scheduled to occur during the first quarter 2019.

5 RECOMMENDATIONS

Based on the data presented herein, there are no recommended changes to the operation of the treatment plant.

6 SUMMARY

The Gladding Cordage groundwater treatment system was shut down in second quarter due to a damaged utility pole and loss of power. The average total flow through the treatment system during the second quarter 2018 was approximately 21 GPM. However, due to a faulty flow meter for RW-1, the total flow through the treatment system for this timeframe is likely under-reported.

The concentrations of VOCs detected in pre-treatment influent samples from recovery wells RW-1 and RW-2 were consistent with previous results.

No VOCs were detected in any of the effluent samples collected from the treatment system.

The treatment successfully removes VOCs from groundwater extracted from the capture zone at the current VFD setting of 46 Hz. The VFD setting will continue to be evaluated based on system monitoring results.

Approximately 0.3 pounds of VOCs were removed by the treatment system during the second quarter 2018. However, since the flow meter for RW-1 was not functioning properly, and removal mass is a function of flow, the VOC removal mass is likely to be greater than reported.

Based on the current five-quarter sampling interval, the next groundwater monitoring event is scheduled to occur during the first quarter 2019.

7 REFERENCES

Malcolm Pirnie, 2007, Gladding Cordage Site Work Plan, Site 7-09-009, Malcolm Pirnie, Inc., June 2007.

TAMS, 1996, Operation and Maintenance Manual, Volume I, Gladding Cordage Site. Site 7-09-009, TAMS Consultants, Inc., March 1996.

TABLES



TABLE 3-1
TREATMENT SYSTEM STATUS AND FLOW SUMMARY
GLADDING CORDAGE SITE
SOUTH OTSELIC, NEW YORK
NYSDEC SITE NO. 7-04-009A

Date	System Operation (days)	System On-time (% of possible days)	Well On-time		Flow Rates		Totalizer		Recovery Well Total Flows		Total System Flow (gallons)	Quarterly Totals (gallons)
			RW-1 (% possible)	RW-2 (% possible)	RW-1 (gpm)	RW-2 (gpm)	RW-1 (gallons)	RW-2 (gallons)	RW-1 (gallons)	RW-2 (gallons)		
January-18	31	100%	100%	100%	18	24.2	60,433,982	58,414,531	747,042	999,814	1,746,856	4,833,473
February-18	23	82%	100%	100%	19.3	23.7	61,058,149	59,201,714	624,167	787,183	1,411,350	
March-18	29	94%	100%	100%	18.9	24	61,800,025	60,135,105	741,876	933,391	1,675,267	
April-18	4	13%	4%	4%	19	23.5	62,019,377	60,410,372	219,352	275,267	494,619	1,458,414
May-18	0	0%	0%	0%	19.1	23.6	62,365,293	60,849,209	345,916	438,837	784,753	
June-18	4	13%	4%	4%	18.3	23.5	62,442,457	60,951,087	77,164	101,878	179,042	
Total Flow 2018									2,755,517	3,536,370	6,291,887	

Notes:

gpm - Gallons per minute

* - flow meter not reading properly

TABLE 3-2
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (INFLUENT - RW-1)
GLADDING CORDAGE
SOUTH OTSELIC, NEW YORK
NYSDEC Site No. 7-09-009

Sample ID Sampling Date Matrix Units	NYSDEC Class GA Standard ug/L	RW-1 1/30/2017 WATER ug/L	RW-1 2/27/2017 WATER ug/L	RW-1 3/23/2017 WATER ug/L	RW-1 4/26/2017 WATER ug/L	RW-1 5/24/2017 WATER ug/L	RW-1 6/29/2017 WATER ug/L	RW-1 7/31/2017 WATER ug/L	RW-1 8/28/2017 WATER ug/L	RW-1 9/20/2017 WATER ug/L	RW-1 10/23/2017 WATER ug/L	RW-1 10/25/2017 WATER ug/L	RW-1 10/26/2017 WATER ug/L	RW-1 11/28/2017 WATER ug/L	RW-1 12/29/2017 WATER ug/L	RW-1 1/29/2018 WATER ug/L	RW-1 2/26/2018 WATER ug/L	RW-1 3/29/2018 WATER ug/L	RW-1 6/22/2018 WATER ug/L
VOCs																			
1,1,1-Trichloroethane	5	35	34	40	30	31	35	30	41	39	34	37	37	38	41	38	40	37	41
1,1,2,2-Tetrachloroethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	5	1.5 J	1.5 J	1.7 J	1.4 J	1.4 J	1.5 J	1.4 J	1.8 J	1.6 J	1.6 J	1.8 J	1.8 J	1.9 J	1.7 J	1.5 J	1.6 J	1.3 J	1.9 J
1,1-Dichloroethene	5	0.86 J	1.7 J	0.99 J	0.65 J	0.69 J	0.74 J	0.77 J	0.98 J	0.83 J	0.74 J	0.74 J	0.74 J	0.98 J	0.97 J	0.84 J	0.87 J	0.77 J	0.85 J
1,2-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.6	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	50	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	5.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	7	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UR-06	2.0 U
cis-1,3-Dichloropropene	0.4	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethyl Benzene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m/p-Xylenes	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methyl tert-butyl Ether		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	0.4	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs		37.4	37.2	42.7	32.1	33.1	37.2	32.2	43.8	41.4	36.3	39.5	39.5	40.9	43.7	40.3	42.5	39.1	43.8

- Concentration exceeds corresponding
Class GA Standard.
U - Not detected at the indicated concentration
J - Estimated concentration.

TABLE 3-3
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (INFLUENT - RW-2)
GLADDING CORDAGE
SOUTH OTSELIC, NEW YORK
NYSDEC Site No. 7-09-009

Sample ID Sampling Date Matrix Units	NYSDEC Class GA Standard ug/L	RW-2 1/30/2017 WATER ug/L	RW-2 2/27/2017 WATER ug/L	RW-2 3/23/2017 WATER ug/L	RW-2 4/26/2017 WATER ug/L	RW-2 5/24/2017 WATER ug/L	RW-2 6/29/2017 WATER ug/L	RW-2 7/31/2017 WATER ug/L	RW-2 8/28/2017 WATER ug/L	RW-2 9/20/2017 WATER ug/L	RW-2 10/23/2017 WATER ug/L	RW-2 10/25/2017 WATER ug/L	RW-2 11/28/2017 WATER ug/L	RW-2 12/29/2017 WATER ug/L	RW-2 1/29/2018 WATER ug/L	RW-2 2/27/2018 WATER ug/L	RW-2 3/29/2018 WATER ug/L	RW-2 6/22/2018 WATER ug/L
VOCs																		
1,1,1-Trichloroethane	5	30	29	33	26	27	31	25	41	32	28	36	30	32	30	32	29	50
1,1,2,2-Tetrachloroethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	5	0.63 J	0.66 J	0.76 J	0.63 J	0.65 J	0.75 J	0.64 J	1.0 J	0.72 J	0.66 J	0.9 J	0.82 J	0.71 J	0.63 J	0.73 J	0.64 J	1.4 J
1,1-Dichloroethene	5	0.65 J	1.1 J	0.71 J	0.51 J	0.57 J	0.55 J	0.65 J	0.92 J	0.61 J	0.6 J	0.8 J	0.66 J	0.72 J	0.61 J	0.67 J	0.57 J	1.2 J
1,2-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.6	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	50	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	2.0 U	5.0 U	5.0 U
Carbon Tetrachloride	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	7	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	0.4	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethyl Benzene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m/p-Xylenes	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methyl tert-butyl Ether		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	0.4	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total VOCs		31.3	30.8	34.5	27.1	28.2	32.3	26.3	42.9	33.3	29.3	37.7	31.5	33.4	31.2	33.4	30.2	52.6

- Concentration exceeds corresponding NYSDEC
Class GA Standard.

U - Not detected at the indicated concentration

J - Estimated concentration.

TABLE 3-4
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCs (EFFLUENT)
GLADDING CORDAGE
SOUTH OTSELIC, NEW YORK
NYSDEC Site No. 7-09-009

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	EFF(46HZ) 1/30/2017 WATER ug/L	EFF(46HZ) 2/27/2017 WATER ug/L	EFF(46HZ) 3/23/2017 WATER ug/L	EFF(46HZ) 4/26/2017 WATER ug/L	EFF(46HZ) 5/24/2017 WATER ug/L	EFF(46HZ) 6/29/2017 WATER ug/L	EFF(46HZ) 7/31/2017 WATER ug/L	EFF(46HZ) 8/28/2017 WATER ug/L	EFF(46HZ) 9/20/2017 WATER ug/L	EFF(46HZ) 10/23/2017 WATER ug/L	EFF(46HZ) 10/25/2017 WATER ug/L	EFF(46HZ) 11/28/2017 WATER ug/L	EFF(46HZ) 12/29/2017 WATER ug/L	EFF(46HZ) 1/29/2018 WATER ug/L	EFF(46HZ) 1/30/2018 WATER ug/L	EFF(46HZ) 2/26/2018 WATER ug/L	EFF(46HZ) 3/29/2018 WATER ug/L	EFF(46HZ) 6/22/2018 WATER ug/L
VOCs																			
1,1,1-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	0.22	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	0.6	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	50	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	7	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane		2.0 U	2.0 U	0.66 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	0.4	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	50	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA
Ethyl Benzene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m,p-Xylenes	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methyl tert-butyl Ether		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	0.4	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.0 U	2.0 U	5.0 U	5.0 U
Trichloroethene	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes
U - Not detected at the indicated concentration.
J - Estimated concentration.

FIGURES



Figure 2-1 Site Location

Gladding Cordage Site
South Otselic, New York
NYSDEC Site 7-09-009

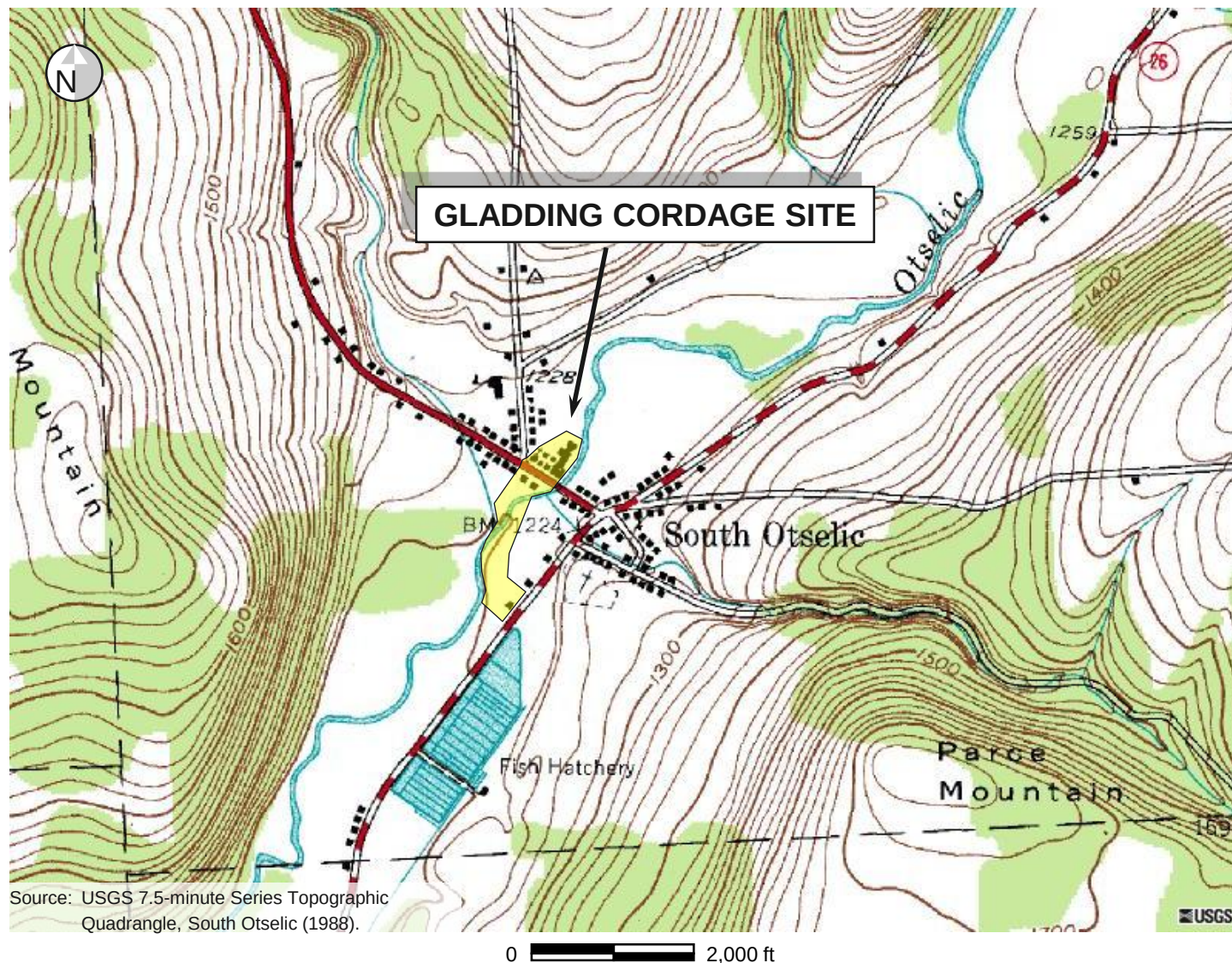
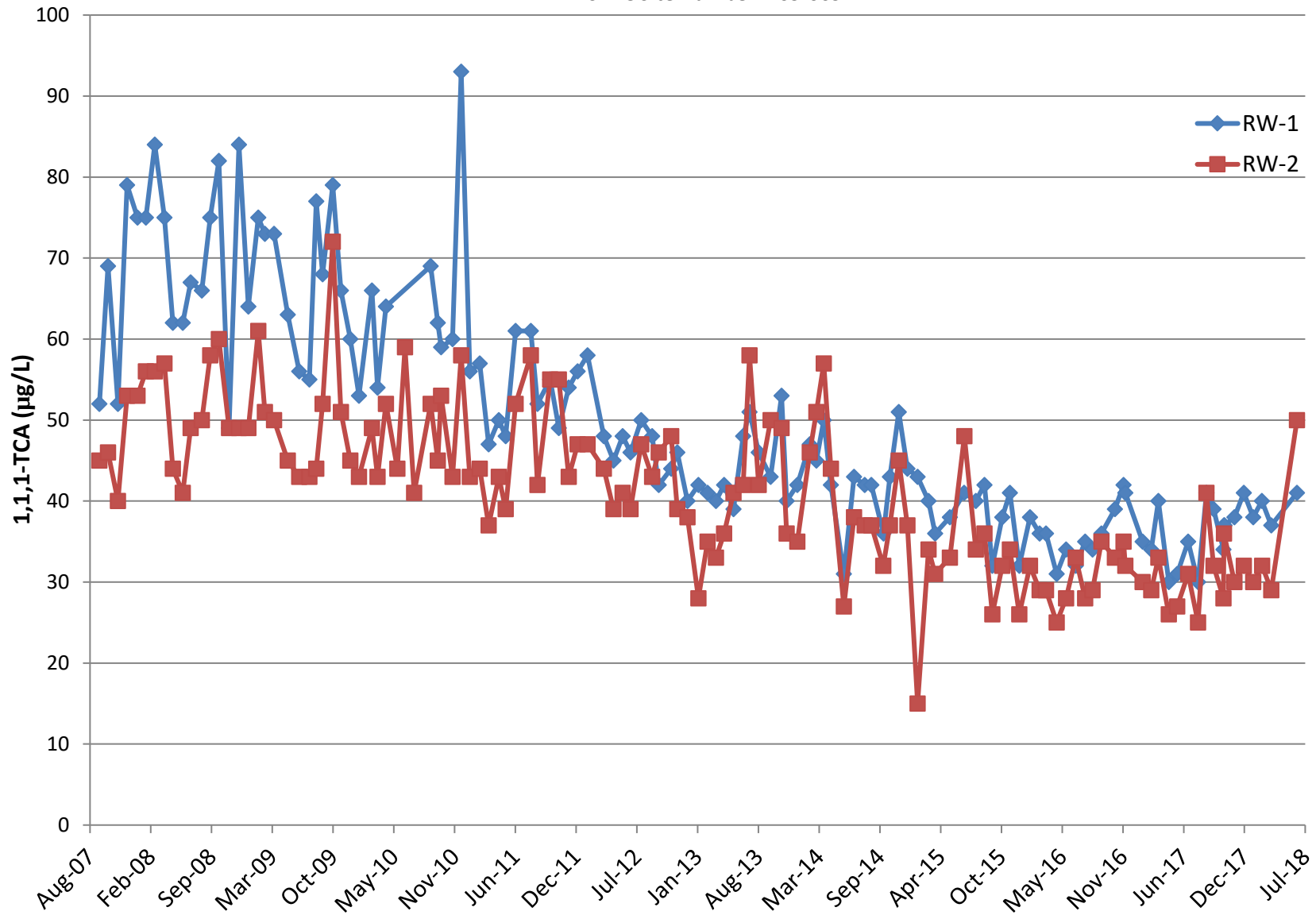


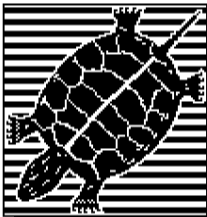
Figure 3-1
Treatment System Influent Sample Concentrations (1,1,1-TCA)
Gladding Cordage Site
NYSDEC Site Number 7-09-009



APPENDIX A

PLC Facsimile Reports





ProControl Series II+

ECOS Research Ltd. Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 04/01/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is ON	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

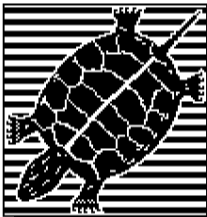
W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPO is ON	

Analog Inputs:

W1_FLO is 19.1	GPM TOTAL FLOW is 61936939	GAL	
W2_FLO is 24.3	GPM TOTAL FLOW is 60307105	GAL	
ASBPRS is 10.6	IWC LIMITS are L: 5.0	IWC	H: 30.0 IWC
HP_FLO is 2.43	GPM TOTAL FLOW is 676778	GAL	
HP_PRS is 9.6	PSI LIMITS are L: -2.0	PSI	H: 20.0 PSI
HP_AMP is 5.12	AMP LIMITS are L: 0.00	AMP	H: AMP
W1_AMP is 4.63	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W2_AMP is 4.65	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W1_LVL is 32.20	FT LIMITS are L: 8.00	FT	H: 28.00 FT
W2_LVL is 57.33	FT LIMITS are L: 9.00	FT	H: 52.00 FT
W1_PRS is 4.4	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
W2_PRS is 4.8	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
INTMP is 61.6	DEG LIMITS are L: 42.0	DEG	H: 130.0 DEG

Analog Outputs:

ASBSPD 0.0 PCT MAN



ProControl Series II+

ECOS Research Ltd. Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 04/02/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is OFF	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

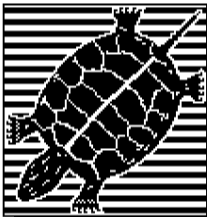
W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPO is ON	

Analog Inputs:

W1_FLO is 19.3	GPM TOTAL FLOW is 61964478	GAL	
W2_FLO is 23.7	GPM TOTAL FLOW is 60341591	GAL	
ASBPRS is 10.8	IWC LIMITS are L: 5.0	IWC	H: 30.0 IWC
HP_FLO is 0.00	GPM TOTAL FLOW is 678672	GAL	
HP_PRS is 1.2	PSI LIMITS are L: -2.0	PSI	H: 20.0 PSI
HP_AMP is 0.04	AMP LIMITS are L: 0.00	AMP	H: AMP
W1_AMP is 4.51	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W2_AMP is 4.54	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W1_LVL is 32.00	FT LIMITS are L: 8.00	FT	H: 28.00 FT
W2_LVL is 56.95	FT LIMITS are L: 9.00	FT	H: 52.00 FT
W1_PRS is 4.4	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
W2_PRS is 4.7	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
INTMP is 60.1	DEG LIMITS are L: 42.0	DEG	H: 130.0 DEG

Analog Outputs:

ASBSPD 0.0 PCT MAN



ProControl Series II+

ECOS Research Ltd. Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 04/03/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is OFF	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

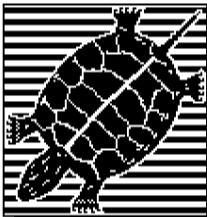
W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPO is ON	

Analog Inputs:

W1_FLO is 19.2	GPM TOTAL FLOW is 61991927	GAL	
W2_FLO is 23.7	GPM TOTAL FLOW is 60375987	GAL	
ASBPRS is 10.7	IWC LIMITS are L: 5.0	IWC	H: 30.0 IWC
HP_FLO is 0.00	GPM TOTAL FLOW is 680298	GAL	
HP_PRS is 1.2	PSI LIMITS are L: -2.0	PSI	H: 20.0 PSI
HP_AMP is 0.04	AMP LIMITS are L: 0.00	AMP	H: AMP
W1_AMP is 4.50	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W2_AMP is 4.55	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W1_LVL is 31.79	FT LIMITS are L: 8.00	FT	H: 28.00 FT
W2_LVL is 56.76	FT LIMITS are L: 9.00	FT	H: 52.00 FT
W1_PRS is 4.4	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
W2_PRS is 4.8	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
INTMP is 61.4	DEG LIMITS are L: 42.0	DEG	H: 130.0 DEG

Analog Outputs:

ASBSPD 0.0 PCT MAN



ProControl Series II+

ECOS Research Ltd. Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 04/04/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is OFF	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

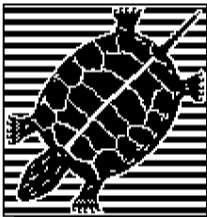
W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPO is ON	

Analog Inputs:

W1_FLO is 19.0	GPM TOTAL FLOW is 62019377	GAL	
W2_FLO is 23.5	GPM TOTAL FLOW is 60410372	GAL	
ASBPRS is 10.3	IWC LIMITS are L: 5.0	IWC	H: 30.0 IWC
HP_FLO is 0.00	GPM TOTAL FLOW is 681909	GAL	
HP_PRS is 1.4	PSI LIMITS are L: -2.0	PSI	H: 20.0 PSI
HP_AMP is 0.04	AMP LIMITS are L: 0.00	AMP	H: AMP
W1_AMP is 4.55	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W2_AMP is 4.59	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W1_LVL is 31.17	FT LIMITS are L: 8.00	FT	H: 28.00 FT
W2_LVL is 56.65	FT LIMITS are L: 9.00	FT	H: 52.00 FT
W1_PRS is 4.4	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
W2_PRS is 4.8	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
INTMP is 61.3	DEG LIMITS are L: 42.0	DEG	H: 130.0 DEG

Analog Outputs:

ASBSPD 0.0 PCT MAN



ProControl Series II+

EOS Research Ltd.

Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 06/27/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is OFF	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

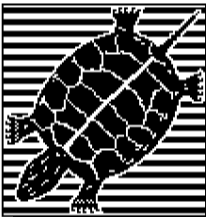
W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPO is ON	

Analog Inputs:

W1_FLO is 18.0	GPM	TOTAL FLOW is 62365293	GAL		
W2_FLO is 23.7	GPM	TOTAL FLOW is 60849209	GAL		
ASBPRS is 10.1	IWC	LIMITS are L: 5.0	IWC	H: 30.0	IWC
HP_FLO is 0.00	GPM	TOTAL FLOW is 683067	GAL		
HP_PRS is 1.2	PSI	LIMITS are L: -2.0	PSI	H: 20.0	PSI
HP_AMP is 0.09	AMP	LIMITS are L: 0.00	AMP	H:	AMP
W1_AMP is 4.49	AMP	LIMITS are L: 0.00	AMP	H: 10.00	AMP
W2_AMP is 4.57	AMP	LIMITS are L: 0.00	AMP	H: 10.00	AMP
W1_LVL is 28.72	FT	LIMITS are L: 8.00	FT	H: 28.00	FT
W2_LVL is 54.65	FT	LIMITS are L: 9.00	FT	H: 52.00	FT
W1_PRS is 4.2	PSI	LIMITS are L: 0.5	PSI	H: 100.0	PSI
W2_PRS is 4.2	PSI	LIMITS are L: 0.5	PSI	H: 100.0	PSI
INTEMP is 62.3	DEG	LIMITS are L: 42.0	DEG	H: 130.0	DEG

Analog Outputs:

ASBSPD 0.0 PCT MAN



ProControl Series II+

EOS Research Ltd.

Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 06/28/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is OFF	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

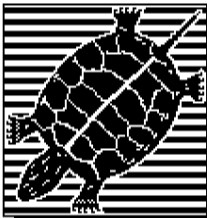
W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPO is ON	

Analog Inputs:

W1_FLO is 18.2	GPM	TOTAL FLOW is 62391044	GAL		
W2_FLO is 23.8	GPM	TOTAL FLOW is 60883173	GAL		
ASBPRS is 10.0	IWC	LIMITS are L: 5.0	IWC	H: 30.0	IWC
HP_FLO is 0.00	GPM	TOTAL FLOW is 683067	GAL		
HP_PRS is 1.2	PSI	LIMITS are L: -2.0	PSI	H: 20.0	PSI
HP_AMP is 0.08	AMP	LIMITS are L: 0.00	AMP	H:	AMP
W1_AMP is 4.47	AMP	LIMITS are L: 0.00	AMP	H: 10.00	AMP
W2_AMP is 4.53	AMP	LIMITS are L: 0.00	AMP	H: 10.00	AMP
W1_LVL is 28.74	FT	LIMITS are L: 8.00	FT	H: 28.00	FT
W2_LVL is 54.92	FT	LIMITS are L: 9.00	FT	H: 52.00	FT
W1_PRS is 4.2	PSI	LIMITS are L: 0.5	PSI	H: 100.0	PSI
W2_PRS is 4.0	PSI	LIMITS are L: 0.5	PSI	H: 100.0	PSI
INTEMP is 64.0	DEG	LIMITS are L: 42.0	DEG	H: 130.0	DEG

Analog Outputs:

ASBSPD 0.0 PCT MAN



ProControl Series II+

ECOS Research Ltd. Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 06/29/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is OFF	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

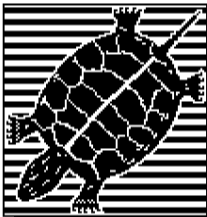
W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPEGO is ON	

Analog Inputs:

W1_FLO is 18.0	GPM	TOTAL FLOW is 62416771	GAL	
W2_FLO is 23.4	GPM	TOTAL FLOW is 60917120	GAL	
ASBPRS is 10.2	IWC	LIMITS are L: 5.0	IWC	H: 30.0
HP_FLO is 0.00	GPM	TOTAL FLOW is 683097	GAL	
HP_PRS is 1.2	PSI	LIMITS are L: -2.0	PSI	H: 20.0
HP_AMP is 0.09	AMP	LIMITS are L: 0.00	AMP	H:
W1_AMP is 4.50	AMP	LIMITS are L: 0.00	AMP	H: 10.00
W2_AMP is 4.57	AMP	LIMITS are L: 0.00	AMP	H: 10.00
W1_LVL is 28.91	FT	LIMITS are L: 8.00	FT	H: 28.00
W2_LVL is 54.94	FT	LIMITS are L: 9.00	FT	H: 52.00
W1_PRS is 4.1	PSI	LIMITS are L: 0.5	PSI	H: 100.0
W2_PRS is 3.6	PSI	LIMITS are L: 0.5	PSI	H: 100.0
INTEMP is 62.1	DEG	LIMITS are L: 42.0	DEG	H: 130.0

Analog Outputs:

ASBSPD 0.0 PCT MAN



ProControl Series II+

ECOS Research Ltd. Fax Report

To:

JEREMY WYCKOFF

From:

THE NYSDEC GLADDING SYSTEM IN SOUTH OTSELIC NY @ 06:00:00 ON 06/30/2018
SER NO 9605 : SETUP VER 1 : ROM 2.1996 : MODEL A2

System Status:

AUTO P36 : LAST SHUTDOWN @ 12:35:48 ON 03/10/2018 BY ACFAIL

Discrete Inputs:

W1_CTR is ON	W2_CTR is ON	ASBVFD is ON	SMPCTR is OFF
HP_OP is OFF	ASP_HH is OFF	ASP_LO is OFF	FLRSMP is OFF
ACFAIL is OFF	E_STOP is OFF		

Discrete Outputs:

W1_GO is ON	W2_GO is ON	ASB_GO is ON	SMP_GO is OFF
AIR_HH is OFF	ASMPHH is OFF	ASMPLL is OFF	W1_ALM is OFF
W2_ALM is OFF	ASBALM is OFF	SMPALM is OFF	AIR_LL is OFF
VEDRUN is OFF	VEDRST is OFF	HPMPO is ON	

Analog Inputs:

W1_FLO is 18.0	GPM TOTAL FLOW is 62442457	GAL	
W2_FLO is 23.8	GPM TOTAL FLOW is 60951087	GAL	
ASBPRS is 10.3	IWC LIMITS are L: 5.0	IWC	H: 30.0 IWC
HP_FLO is 0.00	GPM TOTAL FLOW is 683205	GAL	
HP_PRS is 1.2	PSI LIMITS are L: -2.0	PSI	H: 20.0 PSI
HP_AMP is 0.08	AMP LIMITS are L: 0.00	AMP	H: AMP
W1_AMP is 4.54	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W2_AMP is 4.62	AMP LIMITS are L: 0.00	AMP	H: 10.00 AMP
W1_LVL is 28.89	FT LIMITS are L: 8.00	FT	H: 28.00 FT
W2_LVL is 54.79	FT LIMITS are L: 9.00	FT	H: 52.00 FT
W1_PRS is 4.1	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
W2_PRS is 3.6	PSI LIMITS are L: 0.5	PSI	H: 100.0 PSI
INTMP is 61.4	DEG LIMITS are L: 42.0	DEG	H: 130.0 DEG

Analog Outputs:

ASBSPD 0.0 PCT MAN

APPENDIX B

O&M Checklists



Gladding Cordage
South Otselic, New York
NYSDEC Site #709009

Date 5/23/2018
Inspector J. Wyckoff
Time 7:40

Treatment System Operation

System On (Y/N) Yes
RW-1 On (Y/N) Yes
RW-2 On (Y/N) Yes
Blower On (Y/N) Yes
Sump Pump On (Y/N) No

Alarms

A/C Fail (Y/N) No
RW-1 (Y/N) No
RW-2 (Y/N) No
Blower Pressure (Y/N) No
Sump Level (Y/N) No

Recovery Wells

RW-1

RW-2

Flow Rate (GPM) 19.1 23.6
Total Flow (Gallons) Not Reported Not Reported
Water Level (Feet Above Probe) 30.16 55.70
Probe Depth (Feet BTOC) 40.00 65.00

Air Stripper

Blower VFD Setting (Hertz) 46 Intake/Exhaust Piping OK? (Y/N) Yes
System Pressure (inches water) 9.9 Water Leaks (Y/N) No
Influent/Effluent Piping OK? (Y/N) Yes Water Temperature (°F) 52°

Heat Exchanger

Heat (On/Off) Off Building Temperature (°F) 68°
Heat Exchanger Flow (GPM) 0.00 Heat Exchanger Pressure (PSI) 0.8

General Building/Site

Building Condition OK? (Y/N) Yes Circuit Breakers Checked (Y/N) Yes
Grass Mowed (Y/N) Yes Outfall Condition OK? (Y/N) Yes
Monitoring Wells OK? (Y/N) Yes Samples Collected (Y/N) No

Notes:

Utility pole repairs completed on May 21 and electrical repairs complete today.
System restarted after repairs completed.

Walked Grounds

Inspected Wells

Inspected Outfall

System Check

Gladding Cordage
South Otselic, New York
NYSDEC Site #709009

Date 6/22/2018
Inspector L. Whalen
Time 8:30

Treatment System Operation

System On (Y/N)	Yes
RW-1 On (Y/N)	Yes
RW-2 On (Y/N)	Yes
Blower On (Y/N)	Yes
Sump Pump On (Y/N)	No

Alarms

A/C Fail (Y/N)	No
RW-1 (Y/N)	No
RW-2 (Y/N)	No
Blower Pressure (Y/N)	No
Sump Level (Y/N)	No

Recovery Wells

	RW-1	RW-2
Flow Rate (GPM)	18.3	23.5
Total Flow (Gallons)	Not Reported	Not Reported
Water Level (Feet Above Probe)	28.82	54.75
Probe Depth (Feet BTOC)	40.00	65.00

Air Stripper

Blower VFD Setting (Hertz)	46	Intake/Exhaust Piping OK? (Y/N)	Yes
System Pressure (inches water)	10.3	Water Leaks (Y/N)	No
Influent/Effluent Piping OK? (Y/N)	Yes	Water Temperature (°F)	52.5°

Heat Exchanger

Heat (On/Off)	Off	Building Temperature (°F)	64°
Heat Exchanger Flow (GPM)	0.00	Heat Exchanger Pressure (PSI)	1.3

General Building/Site

Building Condition OK? (Y/N)	Yes	Circuit Breakers Checked (Y/N)	Yes
Grass Mowed (Y/N)	Yes	Outfall Condition OK? (Y/N)	Yes
Monitoring Wells OK? (Y/N)	Yes	Samples Collected (Y/N)	Yes

Notes:

Sampled: RW-1	-	0630
RW-1-MS	-	0630
RW-1-MSD	-	0630
RW-2	-	0640
EFF 46 HZ	-	0650

Walked Grounds

Inspected Wells

Inspected Outfall

System Check

APPENDIX C

Analytical Reporting Forms



July 5, 2018

Jeremy Wyckoff
Arcadis US, Inc. - Clifton Park-NY
855 Route 146, Suite 210
Clifton Park, NY 12065

Project Location: South Otselic
Client Job Number:
Project Number: 00266406.0000
Laboratory Work Order Number: 18F1190

Enclosed are results of analyses for samples received by the laboratory on June 23, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Aaron L. Benoit", with a horizontal line extending to the right.

Aaron L. Benoit
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
18F1190-01	5
18F1190-02	6
18F1190-03	7
18F1190-04	8
Sample Preparation Information	9
QC Data	10
Volatile Organic Compounds by GC/MS	10
B207173	10
Flag/Qualifier Summary	13
Certifications	14
Chain of Custody/Sample Receipt	16

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Arcadis US, Inc. - Clifton Park-NY
855 Route 146, Suite 210
Clifton Park, NY 12065
ATTN: Jeremy Wyckoff

REPORT DATE: 7/5/2018

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 00266406.0000

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 18F1190

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: South Otselic

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
RW-1 (MS/MSD)	18F1190-01	Ground Water		EPA 624.1	
RW-2	18F1190-02	Ground Water		EPA 624.1	
EFF 46 HZ	18F1190-03	Ground Water		EPA 624.1	
Trip Blank 62218	18F1190-04	Trip Blank Water		EPA 624.1	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light pink rectangular background.

Lisa A. Worthington
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: South Otselic

Sample Description:

Work Order: 18F1190

Date Received: 6/23/2018

Field Sample #: RW-1 (MS/MSD)

Sampled: 6/22/2018 06:30

Sample ID: 18F1190-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	ND	1.0	0.34	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Bromodichloromethane	ND	2.0	0.48	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Bromoform	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Bromomethane	ND	2.0	0.44	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Carbon Tetrachloride	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Chlorobenzene	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Chlorodibromomethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Chloroethane	ND	2.0	0.38	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Chloroform	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Chloromethane	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,2-Dichlorobenzene	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,3-Dichlorobenzene	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,4-Dichlorobenzene	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,2-Dichloroethane	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,1-Dichloroethane	1.9	2.0	0.33	µg/L	1	J	EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,1-Dichloroethylene	0.85	2.0	0.25	µg/L	1	J	EPA 624.1	7/2/18	7/2/18 13:41	EEH
trans-1,2-Dichloroethylene	ND	2.0	0.40	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,2-Dichloropropane	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
cis-1,3-Dichloropropene	ND	2.0	0.47	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
trans-1,3-Dichloropropene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Ethylbenzene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.24	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Methylene Chloride	ND	5.0	0.42	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,1,2,2-Tetrachloroethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Tetrachloroethylene	ND	2.0	0.32	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Toluene	ND	1.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,1,1-Trichloroethane	41	2.0	0.25	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
1,1,2-Trichloroethane	ND	2.0	0.22	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Trichloroethylene	ND	2.0	0.41	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Vinyl Chloride	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
m+p Xylene	ND	2.0	0.65	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
o-Xylene	ND	2.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 13:41	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual						
1,2-Dichloroethane-d4	85.3	70-130								
Toluene-d8	97.2	70-130								
4-Bromofluorobenzene	96.9	70-130								

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: South Otselic

Sample Description:

Work Order: 18F1190

Date Received: 6/23/2018

Field Sample #: RW-2

Sampled: 6/22/2018 06:40

Sample ID: 18F1190-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	ND	1.0	0.34	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Bromodichloromethane	ND	2.0	0.48	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Bromoform	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Bromomethane	ND	2.0	0.44	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Carbon Tetrachloride	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Chlorobenzene	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Chlorodibromomethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Chloroethane	ND	2.0	0.38	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Chloroform	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Chloromethane	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,2-Dichlorobenzene	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,3-Dichlorobenzene	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,4-Dichlorobenzene	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,2-Dichloroethane	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,1-Dichloroethane	1.4	2.0	0.33	µg/L	1	J	EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,1-Dichloroethylene	1.2	2.0	0.25	µg/L	1	J	EPA 624.1	7/2/18	7/2/18 14:12	EEH
trans-1,2-Dichloroethylene	ND	2.0	0.40	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,2-Dichloropropane	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
cis-1,3-Dichloropropene	ND	2.0	0.47	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
trans-1,3-Dichloropropene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Ethylbenzene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.24	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Methylene Chloride	ND	5.0	0.42	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,1,2,2-Tetrachloroethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Tetrachloroethylene	ND	2.0	0.32	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Toluene	ND	1.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,1,1-Trichloroethane	50	2.0	0.25	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
1,1,2-Trichloroethane	ND	2.0	0.22	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Trichloroethylene	ND	2.0	0.41	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Vinyl Chloride	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
m+p Xylene	ND	2.0	0.65	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
o-Xylene	ND	2.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 14:12	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual						
1,2-Dichloroethane-d4	87.4	70-130								
Toluene-d8	98.6	70-130								
4-Bromofluorobenzene	96.2	70-130								

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: South Otselic

Sample Description:

Work Order: 18F1190

Date Received: 6/23/2018

Field Sample #: EFF 46 HZ

Sampled: 6/22/2018 06:50

Sample ID: 18F1190-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	ND	1.0	0.34	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Bromodichloromethane	ND	2.0	0.48	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Bromoform	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Bromomethane	ND	2.0	0.44	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Carbon Tetrachloride	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Chlorobenzene	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Chlorodibromomethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Chloroethane	ND	2.0	0.38	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Chloroform	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Chloromethane	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,2-Dichlorobenzene	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,3-Dichlorobenzene	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,4-Dichlorobenzene	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,2-Dichloroethane	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,1-Dichloroethane	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,1-Dichloroethylene	ND	2.0	0.25	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
trans-1,2-Dichloroethylene	ND	2.0	0.40	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,2-Dichloropropane	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
cis-1,3-Dichloropropene	ND	2.0	0.47	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
trans-1,3-Dichloropropene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Ethylbenzene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.24	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Methylene Chloride	ND	5.0	0.42	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,1,2,2-Tetrachloroethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Tetrachloroethylene	ND	2.0	0.32	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Toluene	ND	1.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,1,1-Trichloroethane	ND	2.0	0.25	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
1,1,2-Trichloroethane	ND	2.0	0.22	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Trichloroethylene	ND	2.0	0.41	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Vinyl Chloride	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
m+p Xylene	ND	2.0	0.65	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
o-Xylene	ND	2.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 11:06	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual						
1,2-Dichloroethane-d4	85.3	70-130								
Toluene-d8	98.2	70-130								
4-Bromofluorobenzene	96.2	70-130								

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: South Otselic

Sample Description:

Work Order: 18F1190

Date Received: 6/23/2018

Field Sample #: Trip Blank 62218

Sampled: 6/22/2018 00:00

Sample ID: 18F1190-04

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	ND	1.0	0.34	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Bromodichloromethane	ND	2.0	0.48	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Bromoform	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Bromomethane	ND	2.0	0.44	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Carbon Tetrachloride	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Chlorobenzene	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Chlorodibromomethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Chloroethane	ND	2.0	0.38	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Chloroform	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Chloromethane	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,2-Dichlorobenzene	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,3-Dichlorobenzene	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,4-Dichlorobenzene	ND	2.0	0.39	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,2-Dichloroethane	ND	2.0	0.28	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,1-Dichloroethane	ND	2.0	0.33	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,1-Dichloroethylene	ND	2.0	0.25	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
trans-1,2-Dichloroethylene	ND	2.0	0.40	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,2-Dichloropropane	ND	2.0	0.31	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
cis-1,3-Dichloropropene	ND	2.0	0.47	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
trans-1,3-Dichloropropene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Ethylbenzene	ND	2.0	0.37	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.24	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Methylene Chloride	0.99	5.0	0.42	µg/L	1	J	EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,1,2,2-Tetrachloroethane	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Tetrachloroethylene	ND	2.0	0.32	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Toluene	ND	1.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,1,1-Trichloroethane	ND	2.0	0.25	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
1,1,2-Trichloroethane	ND	2.0	0.22	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Trichloroethylene	ND	2.0	0.41	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	0.27	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Vinyl Chloride	ND	2.0	0.30	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
m+p Xylene	ND	2.0	0.65	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
o-Xylene	ND	2.0	0.35	µg/L	1		EPA 624.1	7/2/18	7/2/18 10:04	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual						
1,2-Dichloroethane-d4	86.2	70-130								
Toluene-d8	98.2	70-130								
4-Bromofluorobenzene	96.5	70-130								

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: SW-846 5030B-EPA 624.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18F1190-01 [RW-1 (MS/MSD)]	B207173	5	5.00	07/02/18
18F1190-02 [RW-2]	B207173	5	5.00	07/02/18
18F1190-03 [EFF 46 HZ]	B207173	5	5.00	07/02/18
18F1190-04 [Trip Blank 62218]	B207173	5	5.00	07/02/18

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B207173 - SW-846 5030B
Blank (B207173-BLK1)

Prepared & Analyzed: 07/02/18

Benzene	ND	1.0	µg/L							
Bromodichloromethane	ND	2.0	µg/L							
Bromoform	ND	2.0	µg/L							
Bromomethane	ND	2.0	µg/L							
Carbon Tetrachloride	ND	2.0	µg/L							
Chlorobenzene	ND	2.0	µg/L							
Chlorodibromomethane	ND	2.0	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
1,2-Dichlorobenzene	ND	2.0	µg/L							
1,3-Dichlorobenzene	ND	2.0	µg/L							
1,4-Dichlorobenzene	ND	2.0	µg/L							
1,2-Dichloroethane	ND	2.0	µg/L							
1,1-Dichloroethane	ND	2.0	µg/L							
1,1-Dichloroethylene	ND	2.0	µg/L							
trans-1,2-Dichloroethylene	ND	2.0	µg/L							
1,2-Dichloropropane	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	2.0	µg/L							
trans-1,3-Dichloropropene	ND	2.0	µg/L							
Ethylbenzene	ND	2.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L							
Tetrachloroethylene	ND	2.0	µg/L							
Toluene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	2.0	µg/L							
1,1,2-Trichloroethane	ND	2.0	µg/L							
Trichloroethylene	ND	2.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	2.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	21.5		µg/L	25.0		86.0	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	24.1		µg/L	25.0		96.2	70-130			

LCS (B207173-BS1)

Prepared & Analyzed: 07/02/18

Benzene	21.4	1.0	µg/L	20.0		107	65-135			
Bromodichloromethane	20.5	2.0	µg/L	20.0		102	65-135			
Bromoform	22.9	2.0	µg/L	20.0		115	70-130			
Bromomethane	11.3	2.0	µg/L	20.0		56.6	15-185			
Carbon Tetrachloride	20.0	2.0	µg/L	20.0		99.8	70-130			
Chlorobenzene	21.7	2.0	µg/L	20.0		108	65-135			
Chlorodibromomethane	20.7	2.0	µg/L	20.0		104	70-135			
Chloroethane	19.8	2.0	µg/L	20.0		98.9	40-160			
Chloroform	20.1	2.0	µg/L	20.0		100	70-135			
Chloromethane	17.7	2.0	µg/L	20.0		88.5	20-205			
1,2-Dichlorobenzene	20.8	2.0	µg/L	20.0		104	65-135			
1,3-Dichlorobenzene	21.6	2.0	µg/L	20.0		108	70-130			
1,4-Dichlorobenzene	20.9	2.0	µg/L	20.0		105	65-135			
1,2-Dichloroethane	18.6	2.0	µg/L	20.0		93.0	70-130			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B207173 - SW-846 5030B										
LCS (B207173-BS1)				Prepared & Analyzed: 07/02/18						
1,1-Dichloroethane	20.7	2.0	µg/L	20.0		104	70-130			
1,1-Dichloroethylene	19.0	2.0	µg/L	20.0		95.2	50-150			
trans-1,2-Dichloroethylene	19.8	2.0	µg/L	20.0		98.8	70-130			
1,2-Dichloropropane	23.0	2.0	µg/L	20.0		115	35-165			
cis-1,3-Dichloropropene	20.6	2.0	µg/L	20.0		103	25-175			
trans-1,3-Dichloropropene	21.1	2.0	µg/L	20.0		105	50-150			
Ethylbenzene	22.2	2.0	µg/L	20.0		111	60-140			
Methyl tert-Butyl Ether (MTBE)	19.9	2.0	µg/L	20.0		99.6	70-130			
Methylene Chloride	16.8	5.0	µg/L	20.0		84.2	60-140			
1,1,2,2-Tetrachloroethane	22.6	2.0	µg/L	20.0		113	60-140			
Tetrachloroethylene	24.5	2.0	µg/L	20.0		122	70-130			
Toluene	21.7	1.0	µg/L	20.0		108	70-130			
1,1,1-Trichloroethane	19.4	2.0	µg/L	20.0		96.8	70-130			
1,1,2-Trichloroethane	22.4	2.0	µg/L	20.0		112	70-130			
Trichloroethylene	22.0	2.0	µg/L	20.0		110	65-135			
Trichlorofluoromethane (Freon 11)	16.9	2.0	µg/L	20.0		84.6	50-150			
Vinyl Chloride	20.9	2.0	µg/L	20.0		105	5-195			
m+p Xylene	44.0	2.0	µg/L	40.0		110	70-130			
o-Xylene	21.1	2.0	µg/L	20.0		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	20.8		µg/L	25.0		83.2	70-130			
Surrogate: Toluene-d8	24.9		µg/L	25.0		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	24.8		µg/L	25.0		99.2	70-130			
Matrix Spike (B207173-MS1)				Source: 18F1190-01		Prepared & Analyzed: 07/02/18				
Benzene	22.5	1.0	µg/L	20.0	ND	113	37-151			
Bromodichloromethane	20.4	2.0	µg/L	20.0	ND	102	35-155			
Bromoform	23.6	2.0	µg/L	20.0	ND	118	45-169			
Bromomethane	9.76	2.0	µg/L	20.0	ND	48.8	20-242			
Carbon Tetrachloride	22.0	2.0	µg/L	20.0	ND	110	70-140			
Chlorobenzene	22.8	2.0	µg/L	20.0	ND	114	37-160			
Chlorodibromomethane	20.8	2.0	µg/L	20.0	ND	104	53-149			
Chloroethane	21.1	2.0	µg/L	20.0	ND	105	14-230			
Chloroform	21.1	2.0	µg/L	20.0	ND	105	51-138			
Chloromethane	18.4	2.0	µg/L	20.0	ND	92.0	20-273			
1,2-Dichlorobenzene	21.6	2.0	µg/L	20.0	ND	108	18-190			
1,3-Dichlorobenzene	22.2	2.0	µg/L	20.0	ND	111	59-156			
1,4-Dichlorobenzene	21.4	2.0	µg/L	20.0	ND	107	18-190			
1,2-Dichloroethane	19.2	2.0	µg/L	20.0	ND	96.2	49-155			
1,1-Dichloroethane	24.1	2.0	µg/L	20.0	1.94	111	59-155			
1,1-Dichloroethylene	19.5	2.0	µg/L	20.0	0.850	93.2	20-234			
trans-1,2-Dichloroethylene	21.2	2.0	µg/L	20.0	ND	106	54-156			
1,2-Dichloropropane	23.4	2.0	µg/L	20.0	ND	117	20-210			
cis-1,3-Dichloropropene	20.1	2.0	µg/L	20.0	ND	101	20-227			
trans-1,3-Dichloropropene	20.3	2.0	µg/L	20.0	ND	101	17-183			
Ethylbenzene	23.4	2.0	µg/L	20.0	ND	117	37-162			
Methyl tert-Butyl Ether (MTBE)	20.5	2.0	µg/L	20.0	ND	103	70-130			
Methylene Chloride	17.6	5.0	µg/L	20.0	ND	88.2	20-221			
1,1,2,2-Tetrachloroethane	23.8	2.0	µg/L	20.0	ND	119	46-157			
Tetrachloroethylene	25.3	2.0	µg/L	20.0	ND	127	64-148			
Toluene	22.4	1.0	µg/L	20.0	ND	112	47-150			
1,1,1-Trichloroethane	60.1	2.0	µg/L	20.0	41.4	94.0	52-162			
1,1,2-Trichloroethane	22.3	2.0	µg/L	20.0	ND	112	52-150			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B207173 - SW-846 5030B										
Matrix Spike (B207173-MS1)	Source: 18F1190-01			Prepared & Analyzed: 07/02/18						
Trichloroethylene	22.7	2.0	µg/L	20.0	ND	114	70-157			
Trichlorofluoromethane (Freon 11)	18.0	2.0	µg/L	20.0	ND	89.8	17-181			
Vinyl Chloride	22.1	2.0	µg/L	20.0	ND	110	20-251			
m+p Xylene	46.3	2.0	µg/L	40.0	ND	116	70-130			
o-Xylene	22.3	2.0	µg/L	20.0	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	21.2		µg/L	25.0		84.9	70-130			
Surrogate: Toluene-d8	24.3		µg/L	25.0		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	24.7		µg/L	25.0		98.8	70-130			
Matrix Spike Dup (B207173-MSD1)	Source: 18F1190-01			Prepared & Analyzed: 07/02/18						
Benzene	22.8	1.0	µg/L	20.0	ND	114	37-151	1.15	61	
Bromodichloromethane	20.9	2.0	µg/L	20.0	ND	105	35-155	2.22	56	
Bromoform	23.4	2.0	µg/L	20.0	ND	117	45-169	0.809	42	
Bromomethane	11.7	2.0	µg/L	20.0	ND	58.7	20-242	18.4	61	
Carbon Tetrachloride	22.2	2.0	µg/L	20.0	ND	111	70-140	0.723	41	
Chlorobenzene	23.2	2.0	µg/L	20.0	ND	116	37-160	1.96	53	
Chlorodibromomethane	21.4	2.0	µg/L	20.0	ND	107	53-149	2.80	50	
Chloroethane	21.8	2.0	µg/L	20.0	ND	109	14-230	3.45	78	
Chloroform	21.5	2.0	µg/L	20.0	ND	107	51-138	1.93	54	
Chloromethane	19.3	2.0	µg/L	20.0	ND	96.4	20-273	4.73	60	
1,2-Dichlorobenzene	21.8	2.0	µg/L	20.0	ND	109	18-190	0.461	57	
1,3-Dichlorobenzene	22.6	2.0	µg/L	20.0	ND	113	59-156	1.96	43	
1,4-Dichlorobenzene	21.3	2.0	µg/L	20.0	ND	107	18-190	0.0469	57	
1,2-Dichloroethane	18.9	2.0	µg/L	20.0	ND	94.7	49-155	1.62	49	
1,1-Dichloroethane	24.2	2.0	µg/L	20.0	1.94	111	59-155	0.207	40	
1,1-Dichloroethylene	21.0	2.0	µg/L	20.0	0.850	101	20-234	7.32	32	
trans-1,2-Dichloroethylene	21.7	2.0	µg/L	20.0	ND	108	54-156	2.19	45	
1,2-Dichloropropane	24.0	2.0	µg/L	20.0	ND	120	20-210	2.41	55	
cis-1,3-Dichloropropene	20.5	2.0	µg/L	20.0	ND	103	20-227	1.97	58	
trans-1,3-Dichloropropene	20.7	2.0	µg/L	20.0	ND	104	17-183	2.15	86	
Ethylbenzene	23.9	2.0	µg/L	20.0	ND	119	37-162	1.82	63	
Methyl tert-Butyl Ether (MTBE)	20.5	2.0	µg/L	20.0	ND	103	70-130	0.0487	20	
Methylene Chloride	17.7	5.0	µg/L	20.0	ND	88.5	20-221	0.340	28	
1,1,2,2-Tetrachloroethane	23.7	2.0	µg/L	20.0	ND	119	46-157	0.0421	61	
Tetrachloroethylene	26.4	2.0	µg/L	20.0	ND	132	64-148	4.02	39	
Toluene	23.1	1.0	µg/L	20.0	ND	115	47-150	3.21	41	
1,1,1-Trichloroethane	60.5	2.0	µg/L	20.0	41.4	95.8	52-162	0.597	36	
1,1,2-Trichloroethane	22.8	2.0	µg/L	20.0	ND	114	52-150	2.30	45	
Trichloroethylene	23.4	2.0	µg/L	20.0	ND	117	70-157	2.91	48	
Trichlorofluoromethane (Freon 11)	18.2	2.0	µg/L	20.0	ND	91.2	17-181	1.55	84	
Vinyl Chloride	22.1	2.0	µg/L	20.0	ND	111	20-251	0.136	66	
m+p Xylene	47.1	2.0	µg/L	40.0	ND	118	70-130	1.84	20	
o-Xylene	22.4	2.0	µg/L	20.0	ND	112	70-130	0.448	20	
Surrogate: 1,2-Dichloroethane-d4	21.1		µg/L	25.0		84.2	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	24.7		µg/L	25.0		98.9	70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 624 in Water</i>	
Benzene	ME,VA
Bromodichloromethane	ME,VA
Bromoform	ME,VA
Bromomethane	ME,VA
Carbon Tetrachloride	ME,VA
Chlorobenzene	ME,VA
Chlorodibromomethane	ME,VA
Chloroethane	ME,VA
Chloroform	ME,VA
Chloromethane	ME,VA
1,2-Dichlorobenzene	ME,VA
1,3-Dichlorobenzene	ME,VA
1,4-Dichlorobenzene	ME,VA
1,2-Dichloroethane	ME,VA
1,1-Dichloroethane	ME,VA
1,1-Dichloroethylene	ME,VA
trans-1,2-Dichloroethylene	ME,VA
1,2-Dichloropropane	ME,VA
cis-1,3-Dichloropropene	ME,VA
trans-1,3-Dichloropropene	ME,VA
Ethylbenzene	ME,VA
Methylene Chloride	ME,VA
1,1,2,2-Tetrachloroethane	ME,VA
Tetrachloroethylene	ME,VA
Toluene	ME,VA
1,1,1-Trichloroethane	ME,VA
1,1,2-Trichloroethane	ME,VA
Trichloroethylene	ME,VA
Trichlorofluoromethane (Freon 11)	ME,VA
Vinyl Chloride	ME,VA
m+p Xylene	VA
o-Xylene	VA
<i>EPA 624.1 in Water</i>	
Benzene	CT,NY,RI,NC,MA,NH
Bromodichloromethane	CT,NY,RI,NC,MA,NH
Bromoform	CT,NY,RI,NC,MA,NH
Bromomethane	CT,NY,RI,NC,MA,NH
Carbon Tetrachloride	CT,NY,RI,NC,MA,NH
Chlorobenzene	CT,NY,RI,NC,MA,NH
Chlorodibromomethane	CT,NY,RI,NC,MA,NH
Chloroethane	CT,NY,RI,NC,MA,NH
Chloroform	CT,NY,RI,NC,MA,NH
Chloromethane	CT,NY,RI,NC,MA,NH
1,2-Dichlorobenzene	CT,NY,RI,NC,MA,NH
1,3-Dichlorobenzene	CT,NY,RI,NC,MA,NH
1,4-Dichlorobenzene	CT,NY,RI,NC,MA,NH

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 624.1 in Water	
1,2-Dichloroethane	CT,NY,RI,NC,MA,NH
1,1-Dichloroethane	CT,NY,RI,NC,MA,NH
1,1-Dichloroethylene	CT,NY,RI,NC,MA,NH
trans-1,2-Dichloroethylene	CT,NY,RI,NC,MA,NH
1,2-Dichloropropane	CT,NY,RI,NC,MA,NH
cis-1,3-Dichloropropene	CT,NY,RI,NC,MA,NH
trans-1,3-Dichloropropene	CT,NY,RI,NC,MA,NH
Ethylbenzene	CT,NY,RI,NC,MA,NH
Methyl tert-Butyl Ether (MTBE)	NY,NC,MA,NH
Methylene Chloride	CT,NY,RI,NC,MA,NH
1,1,2,2-Tetrachloroethane	CT,NY,RI,NC,MA,NH
Tetrachloroethylene	CT,NY,RI,NC,MA,NH
Toluene	CT,NY,RI,NC,MA,NH
1,1,1-Trichloroethane	CT,NY,RI,NC,MA,NH
1,1,2-Trichloroethane	CT,NY,RI,NC,MA,NH
Trichloroethylene	CT,NY,RI,NC,MA,NH
Trichlorofluoromethane (Freon 11)	CT,NY,RI,NC,MA,NH
Vinyl Chloride	CT,NY,RI,NC,MA,NH
m+p Xylene	CT,NY,RI,NC,MA,NH
o-Xylene	CT,NY,RI,NC,MA,NH

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2019
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2019
RI	Rhode Island Department of Health	LAO00112	12/30/2018
NC	North Carolina Div. of Water Quality	652	12/31/2018
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2018
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2018
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2018

806832457442 

Delivered
Saturday 6/23/2018 at 11:26 am

**DELIVERED**

Signed for by: P.PETRAITIS

GET STATUS UPDATES**OBTAIN PROOF OF DELIVERY****FROM**

Syracuse, NY US

TO

EAST LONGMEADOW, MA US

6/23/2018 - Saturday

11:26 am

Delivered

East Longmeadow, MA

Expand History 

6/22/2018 - Friday

9:02 am

Shipment information sent to FedEx

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 ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Aracelis

Received By My Date 6/23/18 Time 1126

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____

Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 7 Actual Temp - 3.0

By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? WA Were Samples Tampered with? WA

Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? T

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-	<u>17</u>	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

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