



January 29, 2019

Wayne Mizerak  
Project Manager  
New York State Department of Environmental Conservation  
625 Broadway  
Albany, NY 12233-7014

**RE: PERIODIC REVIEW REPORT FOR BALCHEM PLANT SITE (SITE CODE: 336032),  
ROUTE 284, WAWAYANDA, NEW YORK (HRP PROJECT #BAL6021.P2)**

Dear Mr. Mizerak,

In accordance with your request, outlined in your November 11, 2018 letter to Balchem Corporation, HRP Associates, Inc. dba HRP Engineering, P.C. (HRP) is pleased to submit this Periodic Review Report (PRR) on the status of the remedial activities at the Balchem Site (DEC Site # 336032) conducted during 2018.

**Executive Summary and Site Overview:**

**Site description and History**

According to the information available in the Record of Decision, and the NYSDEC site remediation database, The Balchem site (the Site) is included in the New York State Registry of Inactive Hazardous Waste Disposal Sites, with a Classification of 04. The Site is located at 2007 Route 284, in the Town of Wawayanda, Orange County, New York. The site is approximately three acres in size and is located on Route 284 near its intersection with County Road 6. The property is bounded on the northwest by the Middletown and New Jersey Railroad, on the southeast by Route 284, and residential properties on the remaining sides. The property is presently owned and operated by the Balchem Corporation for the production of food additives and the repackaging of ethylene oxide.

Contamination at the site was discovered in 1982 during an excavation for a proposed addition to the site, during the subsequent investigation waste containing drums were removed from the site and soil cleanup objective were met. The Site Record describes onsite geology as:

*Regionally, the geology is typically a folded shale or sandstone bedrock overlain by till. The till ranges in depth from 20ft on the ridges to over 150ft in the valleys. Joe Creek, a tributary to the Catlin Creek system, runs along the northwest boundary. In the vicinity of the drum removal, there are three distinct groundwater units: a seasonal perched water table, a weathered till (upper glacial) aquifer, and a fractured bedrock aquifer.*

Volatile organic compound (VOC) contamination was discovered in two of the aquifers on site, the seasonal perched water table and the weathered till (upper glacial) aquifer. Under a Site Management Plan, the area is monitored to confirm continued low levels of VOCs.

#### Compliance with the Site Management Plan (SMP)

The "Groundwater Monitoring Plan, Balchem Corporation, Slate Hill, New York" prepared by Remediation Technologies, Inc., dated November 1996 acts as the SMP for the site. There is only one area of non-compliance with the SMP. The SMP requires that a deed restriction to insure that the property remains an industrial property be in place. An environmental covenant was filed with the Office of the County Clerk, Orange County, New York on April 5, 2017 that restricts the use of the property to commercial or industrial use, prohibits the use of groundwater at the site as a source of drinking water and requires the property owner, and future owners to implement the SMP.

The current deed restriction at the site is not in compliance with the SMP because NYSDEC regulations require review and approval by the NYSDEC prior to the execution of a deed restriction. The current deed restriction was not reviewed or approved by the NYSDEC prior to its execution. Balchem is working with HRP Associates and the NYSDEC to resolve this issue and re-submit the deed restriction. It is anticipated that this will be remedied in 2019.

#### Recommended changes to the SMP

No changes to the SMP are required or recommended at this time.

#### **Evaluation of Remedy Performance, Effectiveness, and Protectiveness:**

The objectives of the selected and implemented remedy at the Site is to protect human health and the environment by eliminating potential exposure by humans or animals to contaminated surface soil, preventing contaminated runoff from entering surface water and monitoring groundwater to ensure that the contaminated groundwater on site does not spread to potential human receptors. These performance, effectiveness and protectiveness goals are being met by the implementation of the SMP.

Engineering controls remain in place to control the direct exposure and surface soil pathways. Groundwater is sampled for contaminants of concern at the site every three years. There was no routine groundwater sampling event during 2018. At the request of the NYSDEC select groundwater monitoring wells were sampled for "Emerging Contaminants". These are chemicals of emerging concern to the NYSDEC and NYSDOH. A report summarizing this sampling event is attached. Additionally, data generated during this sampling event will be uploaded to the NYSDEC Equis Database system.

## **Overall PRR Conclusions and Recommendations:**

### **Compliance with the SMP**

The SMP stipulates that two institutional controls be implemented at the site. The first institutional control is that a sampling plan for groundwater be in place for the Site. Groundwater monitoring is conducted every three years and was not completed during 2018. This is in compliance with the SMP.

The second institutional control is that a deed restriction to insure that the property remains an industrial property be in place. An environmental covenant was filed with the Office of the County Clerk, Orange County, New York on April 5, 2017 that restricts the use of the property to commercial or industrial use, prohibits the use of groundwater at the site as a source of drinking water and requires the property owner, and future owners to implement the SMP. The current deed restriction at the site is not in compliance with the SMP because NYSDEC regulations require review and approval by the NYSDEC prior to the execution of a deed restriction. The current deed restriction was not reviewed or approved by the NYSDEC prior to its execution. Balchem is working with HRP Associates and the NYSDEC to resolve this issue and re-submit the deed restriction. It is anticipated that this will be remedied in 2019.

One Engineering control is stipulated by the SMP; engineering controls at the site consists of the IRM groundwater interceptor trench installed to control a seasonal seep from the perched water table in the drum disposal area. This control remains in place and is functioning as intended.

### **Performance and Effectiveness of the Remedy**

The objectives of the selected and implemented remedy at the Site is to protect human health and the environment by eliminating potential exposure by humans or animals to contaminated surface soil, preventing contaminated runoff from entering surface water and monitoring groundwater to ensure that the contaminated groundwater on site does not spread to potential human receptors.

These performance, effectiveness and protectiveness goals are being met by the implementation of the SMP. Engineering controls remain in place to control the direct exposure and surface soil pathways. Groundwater is sampled for contaminants of concern at the site every three years. It should be noted that, there was no routine groundwater sampling event required during 2018.

### **Future PRR Submittals**

The schedule of PRR submittals should continue unchanged. It should be noted that Balchem is currently evaluating additional remedial measures to address the low levels of groundwater VOC contamination present in the perched aquifer onsite and the potential remaining lead contaminated soil.

If you have any questions or require additional information, please feel free to contact HRP at (518) 877-7101.

Sincerely,



Mark Wright, PG, CHMM  
Senior Project Geologist

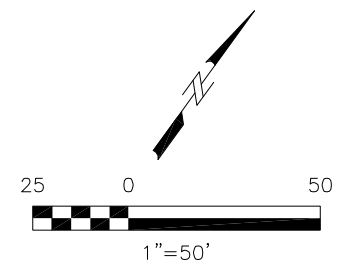
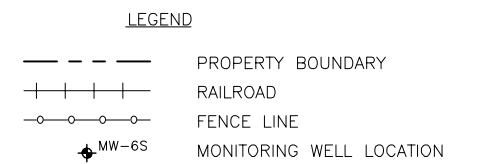
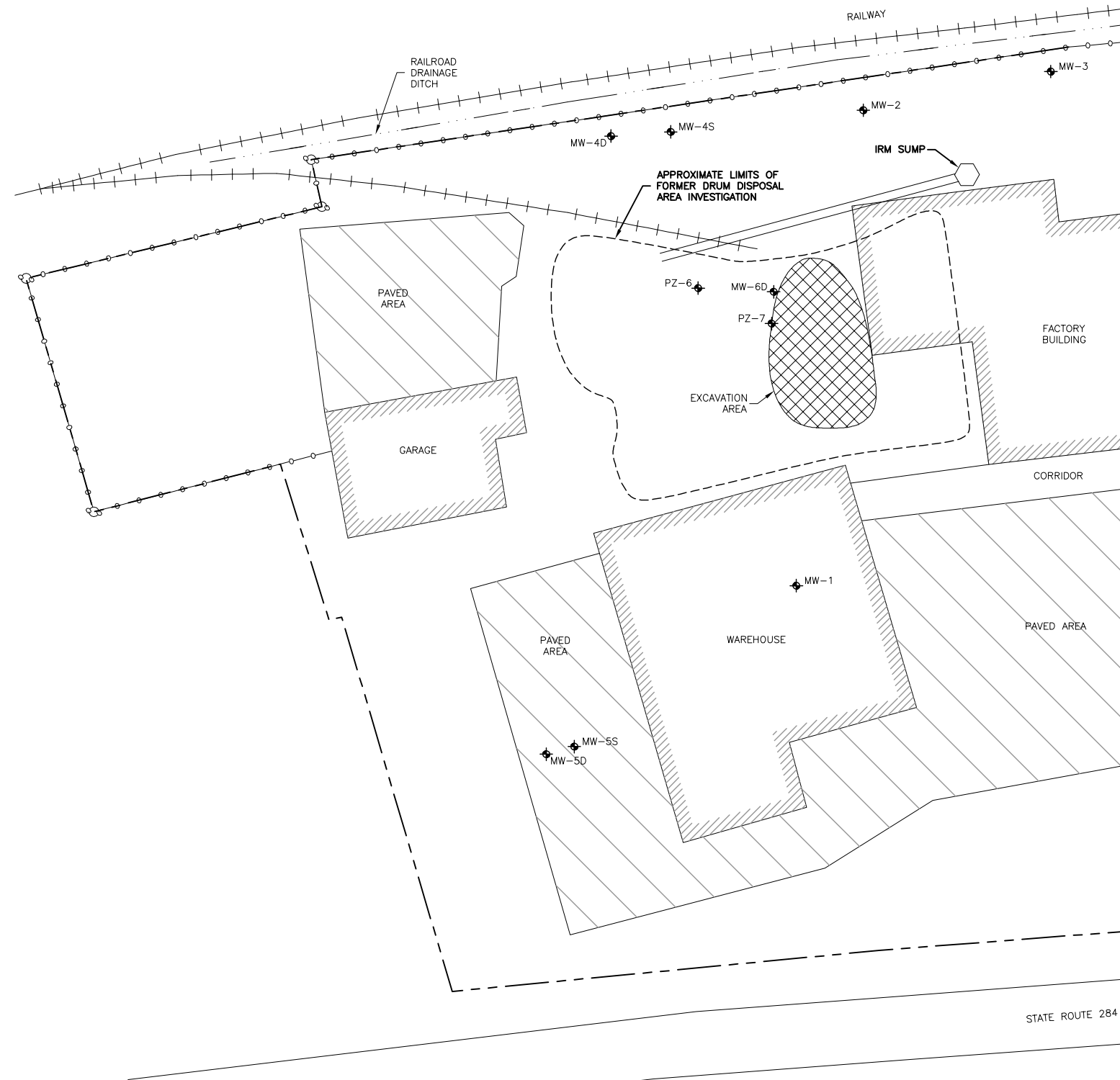


Jesse Zahn, CHMM, PG  
Regional Office Manager

Attachments

# FIGURE

File: J:\08508484\SITE1.dwg Layout: ANS\_AL-LJ User: mawilliamson Plotted: May 01, 2008 - 7:56am Xref's:



# ATTACHMENT 1

## Emerging Contaminants Sampling Report



December 19, 2018

Wayne D. Mizerak  
Remedial Bureau C  
Division of Environmental Remediation  
625 Broadway, 11th Floor  
Albany, NY 12233-7014

**RE: REPORT FOR SAMPLING EMERGING CONTAMINANTS AT BALCHEM FACILITY,  
2007 ROUTE 284, SLATE HILL, NEW YORK (DEC SITE # 336032) (HRP  
#BAL6019.P2)**

Dear Mr. Mizerak,

In accordance with your request, outlined in your June 7, 2018 letter to Balchem Corporation, HRP Associates, Inc. dba HRP Engineering, P.C. (HRP) is pleased to submit this letter report on the groundwater sampling event, conducted on October 31, 2018 for 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) at the Balchem Site (DEC Site # 336032). The sampling event was conducted in accordance with the Letter Work Plan for Sampling Emerging Contaminants for the site, dated August 1, 2018. The remainder of this letter report consists of site background, field activities, and data analysis/compulsions.

### **Background**

The Balchem site is included in the New York State Registry of Inactive Hazardous Waste Disposal Sites, with a Classification of 04. According to the NYSDEC Site Record, Contamination at the site was discovered in 1982 during an excavation for a proposed addition to the site, during the subsequent investigation waste containing drums were removed from the site and soil cleanup objective were met. The Site Record describes onsite geology as:

*Regionally, the geology is typically a folded shale or sandstone bedrock overlain by till. The till ranges in depth from 20ft on the ridges to over 150ft in the valleys. Joe Creek, a tributary to the Catlin Creek system, runs along the northwest boundary. In the vicinity of the drum removal, there are three distinct groundwater units: a seasonal perched water table, a weathered till (upper glacial) aquifer, and a fractured bedrock aquifer.*

Volatile organic compound (VOC) contamination was discovered in two of the aquifers on site, the seasonal perched water table and the weathered till (upper glacial) aquifer. Under a Site Management Plan, the area is monitored to confirm continued low levels of VOCs.

Based on the sites listing on the New York State Registry of Inactive Hazardous Waste Disposal Sites the DEC requested that sampling for emerging contaminants (1,4-dioxane and PFAS) be completed on a representative group of wells at the site. At the request of Balchem HRP developed a Letter Work Plan for Sampling Emerging Contaminants, dated August 1, 2018. This plan was submitted to the NYSDEC and was approved on September 12, 2018.



### **Field Activities**

To evaluate if 1,4-dioxane and PFAS are present in the onsite groundwater, groundwater was collected from four onsite wells. One upgradient well, one downgradient well set in the seasonal perched water table, one well set in the weathered till aquifer, and a piezometer set in the former drum disposal area. The well IDs and sampling rationale are tabulated below:

| <b>Well ID</b> | <b>Aquifer</b>               | <b>Sampling Rationale</b>  |
|----------------|------------------------------|--|
| MW-5D          | Weathered till               | Well location is upgradient of impacted area onsite, serves as a background sample.  |
| MW-6D          | Weathered till               | Well location is downgradient of impacted area onsite, this sample evaluates if 1,4-dioxane and PFAS are present in groundwater leaving the site |
| MW-2           | Seasonal perched water table | Well location is downgradient of impacted area onsite, this sample evaluates if 1,4-dioxane and PFAS are present in groundwater leaving the site |
| PZ-7           | Seasonal perched water table | Well location is downgradient of impacted area onsite, this sample evaluates if 1,4-dioxane and PFAS are present in groundwater onsite           |

A map showing sample locations is attached as Figure 1.

### **Sample Collection and Analysis**

The four onsite monitoring wells were sampled using USEPA low-flow techniques. During sampling the groundwater was monitored every three minutes for pH, temperature, conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential. These readings were recorded on field sampling sheets which are included as Attachment #1. Once the readings of these parameters remained stable over three consecutive measurements groundwater samples were collected into laboratory-provided containers, labeled, and placed in an iced cooler for shipment to a New York State certified laboratory (Con-Test Laboratory located in Ease Meadow, MA) for analysis.

Due to the low detection limits required and the pervasiveness of PFAS in industrial materials, special precautions were implemented during sampling to prevent false positive results. These precautions included but are not limited to the following:

- Tubing used during sample collection was high density polyethylene (HDPE) and silicone;
- Sampling personnel did not wear GORE-TEX or other waterproofed clothing;
- All clothing worn by sampling personnel was laundered multiple times;
- Nitrile gloves were used during sample collection;
- Samples were collected into pre-cleaned sample bottles that do not use a PFTE or Teflon bottle cap liner or seal.

To ensure data quality, one equipment blank, one field duplicate and one MS/MSD sample were collected. All samples were collected in accordance with the sampling guidance provided by the NYSDEC, as attached to the June 7, 2018 letter and communicated by NYSDEC personnel onsite during the sampling event.

Samples for PFAS were analyzed for the full PFAS target analyte list by Modified EPA Method 537. Samples for 1,4-dioxane were analyzed by EPA method 8270 SIM.

## **Findings**

### **Groundwater Sampling Observations**

HRP did not observe non-aqueous phase liquid (NAPL) or a sheen on any of the groundwater samples collected at the site.

### **Analytical Results**

The groundwater samples were analyzed for PFAS and 1,4-dioxane. The results are discussed below and presented on Table 1. The laboratory report forms are included in Attachment #2.

### **PFAS**

As detailed on Table 1, one or more PFAS compound was detected at concentrations exceeding laboratory detection limits (2 parts per trillion) in each of the groundwater samples collected at the site. Total PFAS concentrations ranged for 2.4 parts per trillion in MW-5D to 58.7 parts per trillion in MW-7. PFAS were not detected in the field blank.

### **1,4-Dioxane**

As detailed on Table 1, 1,4-dioxane was detected at concentrations exceeding laboratory detection limits (0.21 parts per billion) in three of the four groundwater samples collected at the site. Detected concentrations ranged from 0.27 parts per billion in MW-5D to 1.2 parts per billion in MW-2. 1,4-dioxane was not detected in the field blank.

## **Conclusions**

Based upon the data collected to date, HRP has the following conclusions:

- PFAS were detected at concentrations exceeding laboratory detection limits in both the weathered till and the seasonal perched aquifers. Additionally, PFAS were detected in both the upgradient and downgradient wells. Based on the low concentrations and presence in the upgradient groundwater it is likely that the drum disposal area is not a source for PFAS in the groundwater onsite.
- 1,4-dioxane was detected at concentrations exceeding laboratory detection limits in both the weathered till and the seasonal perched aquifers. Additionally, 1,4-dioxane were detected in both the upgradient and downgradient groundwater. Based on the

low concentrations and presence in the upgradient groundwater it is likely that the drum disposal area is not a source for 1,4-dioxane in the groundwater onsite.


Closing

If you have any questions or require additional information, please feel free to contact HRP at (518) 877-7101.

Sincerely,




Mark Wright, CHMM, PG  
Senior Project Geologist



Thomas Seguljic, PG, PE  
Vice President

Figure





MOVE YOUR ENVIRONMENT FORWARD

1 FAIRCHILD SQUARE  
SUITE 110  
CLIFTON PARK, NY 12065  
(518) 877-7101  
hrpassociates.com

|  |         |  |             |            |  |
|--|---------|--|-------------|------------|--|
| Revisions  | Date    |  |             |            |  |
|  | N       |  |             |            |  |
| Designed By:   | MEW     |  | Drawn By:   | MEW        |  |
| Issue Date:  | 7/31/18 |  | Project No: | BAL6019.P2 |  |
|  |         |  | Sheet Size: | 11 x 17    |  |
| Balchem Facility<br>2007 Route 284<br>Slate Hill, New York |         |  |             |            |  |
| FIGURE NO.<br><br>1  |         |  |             |            |  |

# Table

**Table 1**  
**Balchem Facility-DEC Site # 336032**  
**2007 Route 284**  
**Slate Hill, New York**  
**Samples Collected on October 31, 2018**  
**Groundwater - Analyzed for polyfluoroalky substances (PFAS) and 1,4-dioxane**

| CAS #  | Analyte Name                          | Duplicate<br>(MW-2) | MW-2        | MW-5D       | MW-6       | PZ-7        | Field Blank |
|--|---------------------------------------|---------------------|-------------|-------------|------------|-------------|-------------|
| <b>PFAS by EPA Method 537 Modified (ng/L)</b>    |                                       |                     |             |             |            |             |             |
|  | 6:2 Fluorotelomersulfonate (6:2 FTS)  | ND<2                | <b>4.0</b>  | ND<2        | ND<2       | <b>39</b>   | ND<2        |
|  | 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
|  | NEtFOSAA                              | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
|  | NMeFOSAA                              | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 375-73-5   | Perfluorobutanesulfonic acid (PFBS)   | ND<2                | <b>3.0</b>  | ND<2        | ND<2       | ND<2        | ND<2        |
| 375-22-4   | Perfluorobutanoic acid (PFBA)         | <b>2.8</b>          | <b>2.8</b>  | ND<2        | ND<2       | ND<2        | ND<2        |
| 335-77-3   | Perfluorodecanesulfonic acid (PFDS)   | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 335-76-2   | Perfluorodecanoic acid (PFDA)         | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 307-55-1   | Perfluorododecanoic acid (PFDoA)      | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 375-92-8   | Perfluoroheptanesulfonic acid (PFHpS) | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 375-85-9   | Perfluoroheptanoic acid (PFHpA)       | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 355-46-4   | Perfluorohexanesulfonic acid (PFHxS)  | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 307-24-4   | Perfluorohexanoic acid (PFHxA)        | <b>3.6</b>          | <b>3.8</b>  | ND<2        | <b>2.2</b> | <b>2.5</b>  | ND<2        |
| 375-95-1   | Perfluorononanoic acid (PFNA)         | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 75491-6  | Perfluorooctanesulfonamide (FOSA)     | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 1763-23-1  | Perfluorooctanesulfonic acid (PFOS)   | <b>4.4</b>          | <b>3.8</b>  | ND<2        | ND<2       | <b>3.2</b>  | ND<2        |
| 335-67-1   | Perfluorooctanoic acid (PFOA)         | <b>8.2</b>          | <b>8.9</b>  | ND<2        | <b>4.0</b> | <b>14</b>   | ND<2        |
| 2706-90-3  | Perfluoropentanoic acid (PFPeA)       | ND<2                | <b>2.6</b>  | <b>2.4</b>  | ND<2       | ND<2        | ND<2        |
| 376-06-7   | Perfluorotetradecanoic acid (PFTA)    | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 72629-94-8                                       | Perfluorotridecanoic acid (PFTrDA)    | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
| 2058-94-8  | Perfluoroundecanoic acid (PFUnA)      | ND<2                | ND<2        | ND<2        | ND<2       | ND<2        | ND<2        |
|  | Total PFAS                            | <b>19</b>           | <b>28.9</b> | <b>2.4</b>  | <b>6.2</b> | <b>58.7</b> | ND<2        |
| <b>1,4-Dioxane by EPA Method 8270 SIM (µg/L)</b> |                                       |                     |             |             |            |             |             |
| 123-91-1   | 1,4-Dioxane                           | <b>1.2</b>          | <b>1.2</b>  | <b>0.27</b> | ND<0.21    | <b>0.76</b> | ND<0.20     |

ND<2      Not Detected less than the detection limit of 2  
ng/L        nanograms per liter  
µg/L        micrograms per liter

# ATTACHMENT 1

## Field Sampling Forms



# HRP ASSOCIATES, INC.

PAGE 1 OF 1

SAMPLE DATE: 10/31/14

## LOW-FLOW SAMPLING LOG

TOTAL # WELLS: 4

Client Name: Balchman

Sample Pump: Per

Project Location: Slater Hill

Tubing Type: LDPE-HDPE

Sampler(s): M. WINGW

Monitoring Equipment: Hyman

Well I.D. MW-50

Screen Setting (ft btoc): \_\_\_\_\_ to \_\_\_\_\_

Well Diameter (inches): 2

Tubing Intake (ft btoc): 25

Total Depth (ft btoc): \_\_\_\_\_

Comments: \_\_\_\_\_

Depth to Water (ft btoc): 14.49

Well Condition: \_\_\_\_\_

| Time<br>(hours) | Depth to<br>Water<br>(ft btoc) | Evacuation<br>Rate<br>(ml/min) | Water Quality Monitoring Parameters |                       |                    |                               |                     |             |
|-----------------|--------------------------------|--------------------------------|-------------------------------------|-----------------------|--------------------|-------------------------------|---------------------|-------------|
|                 |                                |                                | pH                                  | Conductivity<br>µs/cm | Turbidity<br>(NTU) | Dissolved<br>oxygen<br>(mg/l) | Temperature<br>(°C) | ORP<br>(mv) |
| <del>9:12</del> | <del>10.2</del>                |                                | 7.7                                 | 665                   | 16.3               | 16.12                         | 50.1                | 60          |
| <del>9:15</del> |                                |                                | 7.7                                 | 73                    | 15.2               | 16.02                         | 5.29                | 6           |
| 9:18            |                                |                                | 7.45                                | 667                   | 20.7               | 8.35                          | 8.71                | 83          |
| 9:21            |                                |                                | 9.43                                | 706                   | 17.7               | 8.2                           | 7.27                | 40          |
| 9:24            |                                |                                | 9.33                                | 723                   | 12.2               | 8.54                          | 8.54                | 64          |
| 9:27            |                                |                                | 9.30                                | 896                   | 2.1                | 7.94                          | 6.63                | 69          |
| 9:30            |                                |                                | 9.31                                | 896                   | 2.0                | 7.96                          | 6.64                |             |
| 9:33            |                                |                                | 9.32                                | 899                   | 2.0                | 7.81                          | 6.64                |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |

Stabilization of Parameters (stabilization achieved for three consecutive measurements)

| Time |    | Depth to<br>Water<br>(ft btoc) | Evacuation<br>Rate<br>(ml/min) | pH | Conductivity<br>(ms/cm) | Turbidity<br>(NTU) | Dissolved<br>oxygen<br>(mg/l) | Temperature<br>(°C) | ORP<br>(mv) |
|------|----|--------------------------------|--------------------------------|----|-------------------------|--------------------|-------------------------------|---------------------|-------------|
| FROM | TO |                                |                                |    |                         |                    |                               |                     |             |
|      |    |                                |                                |    |                         |                    |                               |                     |             |
|      |    |                                |                                |    |                         |                    |                               |                     |             |
|      |    |                                |                                |    |                         |                    |                               |                     |             |
|      |    |                                |                                |    |                         |                    |                               |                     |             |

Recommended Stabilization: 100-500 +/- 0.2 +/- 3% +/- 10%/<10 +/- 10% +/- 5 +/- 20

Stabilization: (Yes/No)

Sample Time: 9:35

Reviewed by: MW

ft btoc feet below top of casing  
ml/min milliliters per minute  
µs/cm microseimens per centimeter

NTU Nephelometric Turbidity Units  
mg/l milligrams per liter

°C degrees Celsius  
mv millivolts

# HRP ASSOCIATES, INC.

PAGE 1 OF 1

SAMPLE DATE: 10/31/18

## LOW-FLOW SAMPLING LOG

TOTAL # WELLS: 4

Client Name: Baldwin

Sample Pump: Per

Project Location: Slate Hill

Tubing Type: LDPE HOPE

Sampler(s): M. WINGLES

Monitoring Equipment: \_\_\_\_\_

Well I.D.: MW-6

Screen Setting (ft btoc): \_\_\_\_\_ to \_\_\_\_\_

Well Diameter (inches): \_\_\_\_\_

Tubing Intake (ft btoc): \_\_\_\_\_

Total Depth (ft btoc): 2

Comments: 1202 Pinner

Depth to Water (ft btoc): 24.32

Well Condition: \_\_\_\_\_

| Time<br>(hours) | Depth to<br>Water<br>(ft btoc) | Evacuation<br>Rate<br>(ml/min) | Water Quality Monitoring Parameters |                       |                    |                               |                     |             |
|-----------------|--------------------------------|--------------------------------|-------------------------------------|-----------------------|--------------------|-------------------------------|---------------------|-------------|
|                 |                                |                                | pH                                  | Conductivity<br>µs/cm | Turbidity<br>(NTU) | Dissolved<br>oxygen<br>(mg/l) | Temperature<br>(°C) | ORP<br>(mv) |
| 1206            |                                |                                | 8.44                                | 1730                  | 19.5               | 2.2                           | 15.66               | 87          |
| 1209            |                                |                                | 8.49                                | 1770                  | 14.7               | 1.21                          | 16.30               | 83          |
| 1212            |                                |                                | 8.62                                | 1779                  | 12.0               | 0                             | 16.66               | 80          |
| 1215            |                                |                                | 8.01                                | 1803                  | 11.9               | 0                             | 17.00               | 77          |
| 1218            |                                |                                | 8.71                                | 1790                  | 10.3               | 0                             | 17.30               | 74          |
| 1221            |                                |                                | 8.74                                | 1780                  | 9.5                | 0                             | 17.77               | 713         |
| 1224            | 25.03                          |                                | 8.76                                | 1570                  | 9.2                | 0                             | 18.11               | 72          |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |

Stabilization of Parameters (stabilization achieved for three consecutive measurements)

| Time                         |    | Depth to<br>Water<br>(ft btoc) | Evacuation<br>Rate<br>(ml/min) | pH      | Conductivity<br>(µs/cm) | Turbidity<br>(NTU) | Dissolved<br>oxygen<br>(mg/l) | Temperature<br>(°C) | ORP<br>(mv) |
|------------------------------|----|--------------------------------|--------------------------------|---------|-------------------------|--------------------|-------------------------------|---------------------|-------------|
| FROM                         | TO |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
| Recommended<br>Stabilization |    |                                | 100-500                        | +/- 0.2 | +/- 3%                  | +/- 10% < 10       | +/- 10%                       | +/- 5               | +/- 20      |
| Stabilization:<br>(Yes/No)   |    |                                |                                |         |                         |                    |                               |                     |             |

Sample Time: 1225

Reviewed by: MW

ft btoc feet below top of casing  
ml/min milliliters per minute  
µs/cm microseimens per centimeter

NTU Nephelometric Turbidity Units  
mg/l milligrams per liter

°C degrees Celsius  
mv millivolts





# HRP ASSOCIATES, INC.

PAGE 1 OF 1

SAMPLE DATE: 10/31/14

## LOW-FLOW SAMPLING LOG

TOTAL # WELLS: 4

Client Name: BALCHAM

Sample Pump: Peri

Project Location: \_\_\_\_\_

Tubing Type: LDPE HDPE/SILICON

Sampler(s): \_\_\_\_\_

Monitoring Equipment: YORK

Well I.D. MW-2

Screen Setting (ft btoc): \_\_\_\_\_ to \_\_\_\_\_

Well Diameter (inches): 2

Tubing Intake (ft btoc): 14

Total Depth (ft btoc): 15

Comments: \_\_\_\_\_

Depth to Water (ft btoc): 3.4

Well Condition: \_\_\_\_\_

| Time<br>(hours) | Depth to<br>Water<br>(ft btoc) | Evacuation<br>Rate<br>(ml/min) | Water Quality Monitoring Parameters |                       |                    |                               |                     |             |
|-----------------|--------------------------------|--------------------------------|-------------------------------------|-----------------------|--------------------|-------------------------------|---------------------|-------------|
|                 |                                |                                | pH                                  | Conductivity<br>µs/cm | Turbidity<br>(NTU) | Dissolved<br>oxygen<br>(mg/l) | Temperature<br>(°C) | ORP<br>(mv) |
| 1029            | DUAPOL                         |                                | 7.00                                | 1,330                 | 230                | 2.41                          | 10.66               | -90         |
| 1033            |                                |                                | 7.06                                | 1,330                 | 236                | 2.41                          | 10.66               | -89         |
| 1036            |                                |                                | 7.44                                | 1,330                 | 303                | 0                             | 12.85               | -89         |
| 1039            |                                |                                | 7.41                                | 1,330                 | 317                | 0                             | 12.45               | -88         |
| 1042            | 352                            |                                | 7.37                                | 1,320                 | 292                | 0                             | 12.43               | -88         |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |
|                 |                                |                                |                                     |                       |                    |                               |                     |             |

Stabilization of Parameters (stabilization achieved for three consecutive measurements)

| Time                         |    | Depth to<br>Water<br>(ft btoc) | Evacuation<br>Rate<br>(ml/min) | pH      | Conductivity<br>(µs/cm) | Turbidity<br>(NTU) | Dissolved<br>oxygen<br>(mg/l) | Temperature<br>(°C) | ORP<br>(mv) |
|------------------------------|----|--------------------------------|--------------------------------|---------|-------------------------|--------------------|-------------------------------|---------------------|-------------|
| FROM                         | TO |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
|                              |    |                                |                                |         |                         |                    |                               |                     |             |
| Recommended<br>Stabilization |    |                                | 100-500                        | +/- 0.2 | +/- 3%                  | +/- 10%/<10        | +/- 10%                       | +/- 5               | +/- 20      |
| Stabilization:<br>(Yes/No)   |    |                                |                                |         |                         |                    |                               |                     |             |

Sample Time: 1045

Reviewed by: [Signature]

ft btoc feet below top of casing  
ml/min milliliters per minute  
µs/cm microseimens per centimeter

NTU Nephelometric Turbidity Units  
mg/l milligrams per liter

°C degrees Celsius  
mv millivolts

# ATTACHMENT 2

## Laboratory Report Forms

November 16, 2018

Mark Wright  
HRP Associates - NY  
1 Fairchild Square, Suite 110  
Clifton Park, NY 12065

Project Location: Slate Hill, NY  
Client Job Number:  
Project Number: BAL6019P2  
Laboratory Work Order Number: 18K0081

Enclosed are results of analyses for samples received by the laboratory on November 2, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive style with a large, flowing "y" at the end.

Meghan E. Kelley  
Project Manager

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

HRP Associates - NY  
1 Fairchild Square, Suite 110  
Clifton Park, NY 12065  
ATTN: Mark Wright

REPORT DATE: 11/16/2018

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BAL6019P2

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 18K0081

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

PROJECT LOCATION: Slate Hill, NY

| FIELD SAMPLE # | LAB ID:    | MATRIX       | SAMPLE DESCRIPTION | TEST                          | SUB LAB |
|----------------|------------|--------------|--------------------|-------------------------------|---------|
| MW-5D          | 18K0081-01 | Ground Water |                    | SOP 434-PFAAS<br>SW-846 8270D |         |
| MW-2           | 18K0081-02 | Ground Water |                    | SOP 434-PFAAS<br>SW-846 8270D |         |
| PZ-7           | 18K0081-03 | Ground Water |                    | SOP 434-PFAAS<br>SW-846 8270D |         |
| MW-6           | 18K0081-04 | Ground Water |                    | SOP 434-PFAAS<br>SW-846 8270D |         |
| Duplicate      | 18K0081-05 | Ground Water |                    | SOP 434-PFAAS<br>SW-846 8270D |         |
| Field Blank    | 18K0081-06 | Field Blank  |                    | SOP 434-PFAAS                 |         |



**CASE NARRATIVE SUMMARY**

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

**SOP 434-PFAAS****Qualifications:****MS-12**

Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

**Analyte & Samples(s) Qualified:****6:2 Fluorotelomersulfonate (6:2 FT)**

B216958-MS1, B216958-MSD1

**8:2 Fluorotelomersulfonate (8:2 FT)**

B216958-MS1, B216958-MSD1

**Perfluorobutanesulfonic acid (PFB)**

B216958-MS1, B216958-MSD1

**Perfluorodecanesulfonic acid (PFD)**

B216958-MS1, B216958-MSD1

**Perfluoroheptanesulfonic acid (PF1)**

B216958-MS1, B216958-MSD1

**Perfluorohexanesulfonic acid (PFH)**

B216958-MS1, B216958-MSD1

**Perfluorononanoic acid (PFNA)**

B216958-MS1, B216958-MSD1

**MS-22**

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

**Analyte & Samples(s) Qualified:****NEtFOSAA**

B216958-MSD1

**Perfluoroheptanoic acid (PFHpA)**

B216958-MSD1

**Perfluorooctanesulfonic acid (PFO)**

B216958-MSD1

**Perfluorooctanoic acid (PFOA)**

B216958-MSD1

**S-26**

Surrogate outside of control limits.

**Analyte & Samples(s) Qualified:****13C-PFDA**

B216958-MSD1

**d5-NEtFOSAA**

B216958-MSD1

**V-20**

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**Analyte & Samples(s) Qualified:****Perfluoroheptanesulfonic acid (PF1)**

S029451-CCV1

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: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: MW-5D

Sampled: 10/31/2018 09:35

Sample ID: 18K0081-01

Sample Matrix: Ground Water

## 1,4-Dioxane by isotope dilution GC/MS

| Analyte        | Results    | RL   | Units           | Dilution | Flag/Qual | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|----------------|------------|------|-----------------|----------|-----------|--------------|---------------|--------------------|---------|
| 1,4-Dioxane    | 0.27       | 0.24 | µg/L            | 1        |           | SW-846 8270D | 11/5/18       | 11/14/18 15:20     | IMR     |
| Surrogates     | % Recovery |      | Recovery Limits |          | Flag/Qual |              |               |                    |         |
| 1,4-Dioxane-d8 | 25.8       |      | 15-110          |          |           |              |               | 11/14/18 15:20     |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: MW-5D

Sampled: 10/31/2018 09:35

Sample ID: 18K0081-01

Sample Matrix: Ground Water

## Semivolatile Organic Compounds by - GC/MS-MS

| Analyte                               | Results    | RL              | Units     | Dilution | Flag/Qual | Method        | Date Prepared | Date/Time Analyzed | Analyst |
|---------------------------------------|------------|-----------------|-----------|----------|-----------|---------------|---------------|--------------------|---------|
| Perfluorobutanesulfonic acid (PFBS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorohexanoic acid (PFHxA)        | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluoroheptanoic acid (PFHpA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorobutanoic acid (PFBA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorodecanesulfonic acid (PFDS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluoroheptanesulfonic acid (PFHpS) | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorooctanesulfonamide (FOSA)     | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluoropentanoic acid (PFPeA)       | 2.4        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorohexanesulfonic acid (PFHxS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorooctanoic acid (PFOA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorooctanesulfonic acid (PFOS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorononanoic acid (PFNA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorodecanoic acid (PFDA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| NMeFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluoroundecanoic acid (PFUnA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| NEtFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorododecanoic acid (PFDoA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorotridecanoic acid (PFTrDA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Perfluorotetradecanoic acid (PFTA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:45     | BLM     |
| Surrogates                            | % Recovery | Recovery Limits | Flag/Qual |          |           |               |               |                    |         |
| 13C-PFHxA                             | 106        | 70-130          |           |          |           |               |               |                    |         |
| 13C-PFDA                              | 101        | 70-130          |           |          |           |               |               |                    |         |
| d5-NEtFOSAA                           | 98.8       | 70-130          |           |          |           |               |               |                    |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: MW-2

Sampled: 10/31/2018 10:45

Sample ID: 18K0081-02

Sample Matrix: Ground Water

## 1,4-Dioxane by isotope dilution GC/MS

| Analyte        | Results    | RL   | Units           | Dilution | Flag/Qual | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|----------------|------------|------|-----------------|----------|-----------|--------------|---------------|--------------------|---------|
| 1,4-Dioxane    | 1.2        | 0.20 | µg/L            | 1        |           | SW-846 8270D | 11/5/18       | 11/14/18 15:39     | IMR     |
| Surrogates     | % Recovery |      | Recovery Limits |          | Flag/Qual |              |               |                    |         |
| 1,4-Dioxane-d8 | 23.2       |      | 15-110          |          |           |              |               | 11/14/18 15:39     |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: MW-2

Sampled: 10/31/2018 10:45

Sample ID: 18K0081-02

Sample Matrix: Ground Water

## Semivolatile Organic Compounds by - GC/MS-MS

| Analyte                               | Results    | RL              | Units     | Dilution | Flag/Qual | Method        | Date Prepared | Date/Time Analyzed | Analyst |
|---------------------------------------|------------|-----------------|-----------|----------|-----------|---------------|---------------|--------------------|---------|
| Perfluorobutanesulfonic acid (PFBS)   | 3.0        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorohexanoic acid (PFHxA)        | 3.8        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluoroheptanoic acid (PFHpA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorobutanoic acid (PFBA)         | 2.8        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorodecanesulfonic acid (PFDS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluoroheptanesulfonic acid (PFHpS) | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorooctanesulfonamide (FOSA)     | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluoropentanoic acid (PFPeA)       | 2.6        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | 4.0        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorohexanesulfonic acid (PFHxS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorooctanoic acid (PFOA)         | 8.9        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorooctanesulfonic acid (PFOS)   | 3.8        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorononanoic acid (PFNA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorodecanoic acid (PFDA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| NMeFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluoroundecanoic acid (PFUnA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| NEtFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorododecanoic acid (PFDoA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorotridecanoic acid (PFTrDA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Perfluorotetradecanoic acid (PFTA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 22:58     | BLM     |
| Surrogates                            | % Recovery | Recovery Limits | Flag/Qual |          |           |               |               |                    |         |
| 13C-PFHxA                             | 99.1       | 70-130          |           |          |           |               |               |                    |         |
| 13C-PFDA                              | 92.6       | 70-130          |           |          |           |               |               |                    |         |
| d5-NEtFOSAA                           | 94.8       | 70-130          |           |          |           |               |               |                    |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: PZ-7

Sampled: 10/31/2018 13:00

Sample ID: 18K0081-03

Sample Matrix: Ground Water

## 1,4-Dioxane by isotope dilution GC/MS

| Analyte        | Results    | RL   | Units           | Dilution | Flag/Qual | Method       | Date Prepared  | Date/Time Analyzed | Analyst |
|----------------|------------|------|-----------------|----------|-----------|--------------|----------------|--------------------|---------|
| 1,4-Dioxane    | 0.76       | 0.20 | µg/L            | 1        |           | SW-846 8270D | 11/5/18        | 11/14/18 15:59     | IMR     |
| Surrogates     | % Recovery |      | Recovery Limits |          | Flag/Qual |              |                |                    |         |
| 1,4-Dioxane-d8 | 23.6       |      | 15-110          |          |           |              | 11/14/18 15:59 |                    |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: PZ-7

Sampled: 10/31/2018 13:00

Sample ID: 18K0081-03

Sample Matrix: Ground Water

## Semivolatile Organic Compounds by - GC/MS-MS

| Analyte                               | Results    | RL              | Units     | Dilution | Flag/Qual | Method        | Date Prepared | Date/Time Analyzed | Analyst |
|---------------------------------------|------------|-----------------|-----------|----------|-----------|---------------|---------------|--------------------|---------|
| Perfluorobutanesulfonic acid (PFBS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorohexanoic acid (PFHxA)        | 2.5        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluoroheptanoic acid (PFHpA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorobutanoic acid (PFBA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorodecanesulfonic acid (PFDS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluoroheptanesulfonic acid (PFHpS) | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorooctanesulfonamide (FOSA)     | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluoropentanoic acid (PFPeA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | 39         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorohexanesulfonic acid (PFHxS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorooctanoic acid (PFOA)         | 14         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorooctanesulfonic acid (PFOS)   | 3.2        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorononanoic acid (PFNA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorodecanoic acid (PFDA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| NMeFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluoroundecanoic acid (PFUnA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| NEtFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorododecanoic acid (PFDoA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorotridecanoic acid (PFTrDA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Perfluorotetradecanoic acid (PFTA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:49     | BLM     |
| Surrogates                            | % Recovery | Recovery Limits | Flag/Qual |          |           |               |               |                    |         |
| 13C-PFHxA                             | 90.2       | 70-130          |           |          |           |               |               |                    |         |
| 13C-PFDA                              | 84.0       | 70-130          |           |          |           |               |               |                    |         |
| d5-NEtFOSAA                           | 114        | 70-130          |           |          |           |               |               |                    |         |



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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: MW-6

Sampled: 10/31/2018 12:25

Sample ID: 18K0081-04

Sample Matrix: Ground Water

## 1,4-Dioxane by isotope dilution GC/MS

| Analyte        | Results    | RL              | Units | Dilution | Flag/Qual | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|----------------|------------|-----------------|-------|----------|-----------|--------------|---------------|--------------------|---------|
| 1,4-Dioxane    | ND         | 0.21            | µg/L  | 1        |           | SW-846 8270D | 11/5/18       | 11/14/18 16:18     | IMR     |
| Surrogates     | % Recovery | Recovery Limits |       |          | Flag/Qual |              |               |                    |         |
| 1,4-Dioxane-d8 | 24.5       | 15-110          |       |          |           |              |               | 11/14/18 16:18     |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: MW-6

Sampled: 10/31/2018 12:25

Sample ID: 18K0081-04

Sample Matrix: Ground Water

## Semivolatile Organic Compounds by - GC/MS-MS

| Analyte                               | Results    | RL              | Units     | Dilution | Flag/Qual | Method        | Date Prepared | Date/Time Analyzed | Analyst |
|---------------------------------------|------------|-----------------|-----------|----------|-----------|---------------|---------------|--------------------|---------|
| Perfluorobutanesulfonic acid (PFBS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorohexanoic acid (PFHxA)        | 2.2        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluoroheptanoic acid (PFHpA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorobutanoic acid (PFBA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorodecanesulfonic acid (PFDS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluoroheptanesulfonic acid (PFHpS) | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorooctanesulfonamide (FOSA)     | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluoropentanoic acid (PFPeA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorohexanesulfonic acid (PFHxS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorooctanoic acid (PFOA)         | 4.0        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorooctanesulfonic acid (PFOS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorononanoic acid (PFNA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorodecanoic acid (PFDA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| NMeFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluoroundecanoic acid (PFUnA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| NEtFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorododecanoic acid (PFDoA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorotridecanoic acid (PFTrDA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Perfluorotetradecanoic acid (PFTA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:11     | BLM     |
| Surrogates                            | % Recovery | Recovery Limits | Flag/Qual |          |           |               |               |                    |         |
| 13C-PFHxA                             | 108        | 70-130          |           |          |           |               |               |                    |         |
| 13C-PFDA                              | 101        | 70-130          |           |          |           |               |               |                    |         |
| d5-NEtFOSAA                           | 109        | 70-130          |           |          |           |               |               |                    |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: Duplicate

Sampled: 10/31/2018 00:00

Sample ID: 18K0081-05

Sample Matrix: Ground Water

## 1,4-Dioxane by isotope dilution GC/MS

| Analyte        | Results    | RL   | Units           | Dilution | Flag/Qual | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|----------------|------------|------|-----------------|----------|-----------|--------------|---------------|--------------------|---------|
| 1,4-Dioxane    | 1.2        | 0.21 | µg/L            | 1        |           | SW-846 8270D | 11/5/18       | 11/14/18 16:37     | IMR     |
| Surrogates     | % Recovery |      | Recovery Limits |          | Flag/Qual |              |               |                    |         |
| 1,4-Dioxane-d8 | 23.6       |      | 15-110          |          |           |              |               | 11/14/18 16:37     |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: Duplicate

Sampled: 10/31/2018 00:00

Sample ID: 18K0081-05

Sample Matrix: Ground Water

## Semivolatile Organic Compounds by - GC/MS-MS

| Analyte                               | Results    | RL              | Units     | Dilution | Flag/Qual | Method        | Date Prepared | Date/Time Analyzed | Analyst |
|---------------------------------------|------------|-----------------|-----------|----------|-----------|---------------|---------------|--------------------|---------|
| Perfluorobutanesulfonic acid (PFBS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorohexanoic acid (PFHxA)        | 3.6        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluoroheptanoic acid (PFHpA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorobutanoic acid (PFBA)         | 2.8        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorodecanesulfonic acid (PFDS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluoroheptanesulfonic acid (PFHpS) | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorooctanesulfonamide (FOSA)     | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluoropentanoic acid (PFPeA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorohexanesulfonic acid (PFHxS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorooctanoic acid (PFOA)         | 8.2        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorooctanesulfonic acid (PFOS)   | 4.4        | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorononanoic acid (PFNA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorodecanoic acid (PFDA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| NMeFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluoroundecanoic acid (PFUnA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| NEtFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorododecanoic acid (PFDoA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorotridecanoic acid (PFTrDA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Perfluorotetradecanoic acid (PFTA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:24     | BLM     |
| Surrogates                            | % Recovery | Recovery Limits | Flag/Qual |          |           |               |               |                    |         |
| 13C-PFHxA                             | 101        | 70-130          |           |          |           |               |               |                    |         |
| 13C-PFDA                              | 99.2       | 70-130          |           |          |           |               |               |                    |         |
| d5-NEtFOSAA                           | 93.6       | 70-130          |           |          |           |               |               |                    |         |

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

Project Location: Slate Hill, NY

Sample Description:

Work Order: 18K0081

Date Received: 11/2/2018

Field Sample #: Field Blank

Sampled: 10/31/2018 00:00

Sample ID: 18K0081-06

Sample Matrix: Field Blank

## Semivolatile Organic Compounds by - GC/MS-MS

| Analyte                               | Results    | RL              | Units     | Dilution | Flag/Qual | Method        | Date Prepared | Date/Time Analyzed | Analyst |
|---------------------------------------|------------|-----------------|-----------|----------|-----------|---------------|---------------|--------------------|---------|
| Perfluorobutanesulfonic acid (PFBS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorohexanoic acid (PFHxA)        | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluoroheptanoic acid (PFHpA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorobutanoic acid (PFBA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorodecanesulfonic acid (PFDS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluoroheptanesulfonic acid (PFHpS) | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorooctanesulfonamide (FOSA)     | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluoropentanoic acid (PFPeA)       | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorohexanesulfonic acid (PFHxS)  | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorooctanoic acid (PFOA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorooctanesulfonic acid (PFOS)   | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorononanoic acid (PFNA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorodecanoic acid (PFDA)         | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| NMeFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluoroundecanoic acid (PFUnA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| NEtFOSAA                              | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorododecanoic acid (PFDoA)      | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorotridecanoic acid (PFTrDA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Perfluorotetradecanoic acid (PFTA)    | ND         | 2.0             | ng/L      | 1        |           | SOP 434-PFAAS | 11/12/18      | 11/15/18 23:36     | BLM     |
| Surrogates                            | % Recovery | Recovery Limits | Flag/Qual |          |           |               |               |                    |         |
| 13C-PFHxA                             | 102        | 70-130          |           |          |           |               |               |                    |         |
| 13C-PFDA                              | 86.4       | 70-130          |           |          |           |               |               |                    |         |
| d5-NEtFOSAA                           | 94.9       | 70-130          |           |          |           |               |               |                    |         |

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**Sample Extraction Data****Prep Method: EPA 537-SOP 434-PFAAS**

| Lab Number [Field ID]    | Batch   | Initial [mL] | Final [mL] | Date     |
|--------------------------|---------|--------------|------------|----------|
| 18K0081-01 [MW-5D]       | B216958 | 250          | 1.00       | 11/12/18 |
| 18K0081-02 [MW-2]        | B216958 | 250          | 1.00       | 11/12/18 |
| 18K0081-03 [PZ-7]        | B216958 | 250          | 1.00       | 11/12/18 |
| 18K0081-04 [MW-6]        | B216958 | 250          | 1.00       | 11/12/18 |
| 18K0081-05 [Duplicate]   | B216958 | 250          | 1.00       | 11/12/18 |
| 18K0081-06 [Field Blank] | B216958 | 250          | 1.00       | 11/12/18 |

**Prep Method: SW-846 3510C-SW-846 8270D**

| Lab Number [Field ID]  | Batch   | Initial [mL] | Final [mL] | Date     |
|------------------------|---------|--------------|------------|----------|
| 18K0081-01 [MW-5D]     | B216438 | 830          | 1.00       | 11/05/18 |
| 18K0081-02 [MW-2]      | B216438 | 1000         | 1.00       | 11/05/18 |
| 18K0081-03 [PZ-7]      | B216438 | 1000         | 1.00       | 11/05/18 |
| 18K0081-04 [MW-6]      | B216438 | 950          | 1.00       | 11/05/18 |
| 18K0081-05 [Duplicate] | B216438 | 940          | 1.00       | 11/05/18 |

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

**QUALITY CONTROL**
**1,4-Dioxane by isotope dilution GC/MS - Quality Control**

| Analyte                                | Result | Reporting Limit | Units | Spike Level                           | Source Result | %REC                                  | %REC Limits | RPD   | RPD Limit | Notes |
|--|--------|-----------------|-------|---------------------------------------|---------------|---------------------------------------|-------------|-------|-----------|-------|
| <b>Batch B216438 - SW-846 3510C</b>    |        |                 |       |                                       |               |                                       |             |       |           |       |
| <b>Blank (B216438-BLK1)</b>            |        |                 |       | Prepared: 11/05/18 Analyzed: 11/06/18 |               |                                       |             |       |           |       |
| 1,4-Dioxane                            | ND     | 0.20            | µg/L  |                                       |               |                                       |             |       |           |       |
| Surrogate: 1,4-Dioxane-d8              | 4.06   |                 | µg/L  | 10.0                                  |               | 40.6                                  | 15-110      |       |           |       |
| <b>LCS (B216438-BS1)</b>               |        |                 |       | Prepared: 11/05/18 Analyzed: 11/06/18 |               |                                       |             |       |           |       |
| 1,4-Dioxane                            | 10.1   | 0.20            | µg/L  | 10.0                                  |               | 101                                   | 40-140      |       |           |       |
| Surrogate: 1,4-Dioxane-d8              | 3.79   |                 | µg/L  | 10.0                                  |               | 37.9                                  | 15-110      |       |           |       |
| <b>LCS Dup (B216438-BSD1)</b>          |        |                 |       | Prepared: 11/05/18 Analyzed: 11/06/18 |               |                                       |             |       |           |       |
| 1,4-Dioxane                            | 10.3   | 0.20            | µg/L  | 10.0                                  |               | 103                                   | 40-140      | 2.02  | 30        |       |
| Surrogate: 1,4-Dioxane-d8              | 3.69   |                 | µg/L  | 10.0                                  |               | 36.9                                  | 15-110      |       |           |       |
| <b>Matrix Spike (B216438-MS1)</b>      |        |                 |       | <b>Source: 18K0081-02</b>             |               | Prepared: 11/05/18 Analyzed: 11/14/18 |             |       |           |       |
| 1,4-Dioxane                            | 12.2   | 0.21            | µg/L  | 10.4                                  | 1.19          | 106                                   | 40-140      |       |           |       |
| Surrogate: 1,4-Dioxane-d8              | 2.72   |                 | µg/L  | 10.4                                  |               | 26.1                                  | 15-110      |       |           |       |
| <b>Matrix Spike Dup (B216438-MSD1)</b> |        |                 |       | <b>Source: 18K0081-02</b>             |               | Prepared: 11/05/18 Analyzed: 11/14/18 |             |       |           |       |
| 1,4-Dioxane                            | 12.2   | 0.21            | µg/L  | 10.4                                  | 1.19          | 105                                   | 40-140      | 0.538 | 20        |       |
| Surrogate: 1,4-Dioxane-d8              | 2.55   |                 | µg/L  | 10.4                                  |               | 24.5                                  | 15-110      |       |           |       |

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

## QUALITY CONTROL

## Semivolatile Organic Compounds by - GC/MS-MS - Quality Control

| Analyte                               | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------------------------------------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
| <b>Batch B216958 - EPA 537</b>        |        |                 |       |             |               |      |             |     |           |       |
| <b>Blank (B216958-BLK1)</b>           |        |                 |       |             |               |      |             |     |           |       |
| Prepared: 11/12/18 Analyzed: 11/15/18 |        |                 |       |             |               |      |             |     |           |       |
| Perfluorobutanesulfonic acid (PFBS)   | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorohexanoic acid (PFHxA)        | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluoroheptanoic acid (PFHpA)       | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorobutanoic acid (PFBA)         | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorodecanesulfonic acid (PFDS)   | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluoroheptanesulfonic acid (PFHpS) | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorooctanesulfonamide (FOSA)     | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluoropentanoic acid (PFPeA)       | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorohexanesulfonic acid (PFHxS)  | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorooctanoic acid (PFOA)         | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorooctanesulfonic acid (PFOS)   | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorononanoic acid (PFNA)         | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorodecanoic acid (PFDA)         | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| NMeFOSAA                              | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluoroundecanoic acid (PFUnA)      | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| NEtFOSAA                              | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorododecanoic acid (PFDoA)      | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorotridecanoic acid (PFTrDA)    | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Perfluorotetradecanoic acid (PFTA)    | ND     | 2.0             | ng/L  |             |               |      |             |     |           |       |
| Surrogate: 13C-PFHxA                  | 43.6   |                 | ng/L  | 40.0        |               | 109  | 70-130      |     |           |       |
| Surrogate: 13C-PFDA                   | 42.5   |                 | ng/L  | 40.0        |               | 106  | 70-130      |     |           |       |
| Surrogate: d5-NEtFOSAA                | 143    |                 | ng/L  | 160         |               | 89.2 | 70-130      |     |           |       |
| <b>LCS (B216958-BS1)</b>              |        |                 |       |             |               |      |             |     |           |       |
| Prepared: 11/12/18 Analyzed: 11/15/18 |        |                 |       |             |               |      |             |     |           |       |
| Perfluorobutanesulfonic acid (PFBS)   | 19.5   | 2.0             | ng/L  | 17.7        |               | 110  | 70-130      |     |           |       |
| Perfluorohexanoic acid (PFHxA)        | 22.0   | 2.0             | ng/L  | 20.0        |               | 110  | 70-130      |     |           |       |
| Perfluoroheptanoic acid (PFHpA)       | 22.2   | 2.0             | ng/L  | 20.0        |               | 111  | 70-130      |     |           |       |
| Perfluorobutanoic acid (PFBA)         | 11.4   | 2.0             | ng/L  | 20.0        |               | 57.1 | 30-110      |     |           |       |
| Perfluorodecanesulfonic acid (PFDS)   | 20.6   | 2.0             | ng/L  | 19.3        |               | 107  | 70-130      |     |           |       |
| Perfluoroheptanesulfonic acid (PFHpS) | 23.4   | 2.0             | ng/L  | 19.0        |               | 123  | 70-130      |     |           |       |
| Perfluorooctanesulfonamide (FOSA)     | 9.99   | 2.0             | ng/L  | 20.0        |               | 49.9 | 30-110      |     |           |       |
| Perfluoropentanoic acid (PFPeA)       | 24.8   | 2.0             | ng/L  | 20.0        |               | 124  | 70-130      |     |           |       |
| 6:2 Fluorotelomersulfonate (6:2 FTS)  | 24.3   | 2.0             | ng/L  | 19.0        |               | 128  | 70-130      |     |           |       |
| 8:2 Fluorotelomersulfonate (8:2 FTS)  | 24.4   | 2.0             | ng/L  | 19.2        |               | 127  | 70-130      |     |           |       |
| Perfluorohexanesulfonic acid (PFHxS)  | 23.2   | 2.0             | ng/L  | 18.2        |               | 128  | 70-130      |     |           |       |
| Perfluorooctanoic acid (PFOA)         | 23.2   | 2.0             | ng/L  | 20.0        |               | 116  | 70-130      |     |           |       |
| Perfluorooctanesulfonic acid (PFOS)   | 20.1   | 2.0             | ng/L  | 18.5        |               | 109  | 70-130      |     |           |       |
| Perfluorononanoic acid (PFNA)         | 24.4   | 2.0             | ng/L  | 20.0        |               | 122  | 70-130      |     |           |       |
| Perfluorodecanoic acid (PFDA)         | 24.1   | 2.0             | ng/L  | 20.0        |               | 120  | 70-130      |     |           |       |
| NMeFOSAA                              | 20.7   | 2.0             | ng/L  | 20.0        |               | 103  | 70-130      |     |           |       |
| Perfluoroundecanoic acid (PFUnA)      | 22.3   | 2.0             | ng/L  | 20.0        |               | 111  | 70-130      |     |           |       |
| NEtFOSAA                              | 20.8   | 2.0             | ng/L  | 20.0        |               | 104  | 70-130      |     |           |       |
| Perfluorododecanoic acid (PFDoA)      | 21.2   | 2.0             | ng/L  | 20.0        |               | 106  | 70-130      |     |           |       |
| Perfluorotridecanoic acid (PFTrDA)    | 19.9   | 2.0             | ng/L  | 20.0        |               | 99.6 | 70-130      |     |           |       |
| Perfluorotetradecanoic acid (PFTA)    | 23.8   | 2.0             | ng/L  | 20.0        |               | 119  | 70-130      |     |           |       |
| Surrogate: 13C-PFHxA                  | 40.6   |                 | ng/L  | 40.0        |               | 101  | 70-130      |     |           |       |
| Surrogate: 13C-PFDA                   | 36.5   |                 | ng/L  | 40.0        |               | 91.4 | 70-130      |     |           |       |
| Surrogate: d5-NEtFOSAA                | 136    |                 | ng/L  | 160         |               | 84.8 | 70-130      |     |           |       |



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

## QUALITY CONTROL

## Semivolatile Organic Compounds by - GC/MS-MS - Quality Control

| Analyte                                      | Result                    | Reporting Limit | Units | Spike Level                           | Source Result | %REC          | %REC Limits | RPD  | RPD Limit | Notes |
|--|---------------------------|-----------------|-------|---------------------------------------|---------------|---------------|-------------|------|-----------|-------|
| <b>Batch B216958 - EPA 537</b>               |                           |                 |       |                                       |               |               |             |      |           |       |
| <b>Matrix Spike (B216958-MS1)</b>            | <b>Source: 18K0081-02</b> |                 |       | Prepared: 11/12/18 Analyzed: 11/15/18 |               |               |             |      |           |       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>   | 28.8                      | 2.0             | ng/L  | 17.7                                  | 3.05          | <b>145</b> *  | 70-130      |      |           | MS-12 |
| Perfluorohexanoic acid (PFHxA)               | 25.4                      | 2.0             | ng/L  | 20.0                                  | 3.82          | 108           | 70-130      |      |           |       |
| Perfluoroheptanoic acid (PFHpA)              | 23.3                      | 2.0             | ng/L  | 20.0                                  | ND            | 117           | 70-130      |      |           |       |
| Perfluorobutanoic acid (PFBA)                | 12.0                      | 2.0             | ng/L  | 20.0                                  | 2.82          | 46.0          | 30-110      |      |           |       |
| <b>Perfluorodecanesulfonic acid (PFDS)</b>   | 25.9                      | 2.0             | ng/L  | 19.3                                  | ND            | <b>134</b> *  | 70-130      |      |           | MS-12 |
| <b>Perfluoroheptanesulfonic acid (PFHpS)</b> | 29.3                      | 2.0             | ng/L  | 19.0                                  | ND            | <b>154</b> *  | 70-130      |      |           | MS-12 |
| Perfluorooctanesulfonamide (FOSA)            | 11.1                      | 2.0             | ng/L  | 20.0                                  | ND            | 55.3          | 30-110      |      |           |       |
| Perfluoropentanoic acid (PFPeA)              | 24.7                      | 2.0             | ng/L  | 20.0                                  | 2.60          | 110           | 70-130      |      |           |       |
| <b>6:2 Fluorotelomersulfonate (6:2 FTS)</b>  | 41.7                      | 2.0             | ng/L  | 19.0                                  | 4.03          | <b>198</b> *  | 70-130      |      |           | MS-12 |
| <b>8:2 Fluorotelomersulfonate (8:2 FTS)</b>  | 40.1                      | 2.0             | ng/L  | 19.2                                  | ND            | <b>209</b> *  | 70-130      |      |           | MS-12 |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>  | 26.0                      | 2.0             | ng/L  | 18.2                                  | ND            | <b>143</b> *  | 70-130      |      |           | MS-12 |
| Perfluorooctanoic acid (PFOA)                | 32.5                      | 2.0             | ng/L  | 20.0                                  | 8.85          | 118           | 70-130      |      |           |       |
| Perfluorooctanesulfonic acid (PFOS)          | 25.8                      | 2.0             | ng/L  | 18.5                                  | 3.83          | 119           | 70-130      |      |           |       |
| <b>Perfluorononanoic acid (PFNA)</b>         | 28.0                      | 2.0             | ng/L  | 20.0                                  | ND            | <b>140</b> *  | 70-130      |      |           | MS-12 |
| Perfluorodecanoic acid (PFDA)                | 24.7                      | 2.0             | ng/L  | 20.0                                  | ND            | 123           | 70-130      |      |           |       |
| NMeFOSAA                                     | 23.1                      | 2.0             | ng/L  | 20.0                                  | ND            | 116           | 70-130      |      |           |       |
| Perfluoroundecanoic acid (PFUnA)             | 24.4                      | 2.0             | ng/L  | 20.0                                  | ND            | 122           | 70-130      |      |           |       |
| NEtFOSAA                                     | 21.8                      | 2.0             | ng/L  | 20.0                                  | ND            | 109           | 70-130      |      |           |       |
| Perfluorododecanoic acid (PFDoA)             | 23.3                      | 2.0             | ng/L  | 20.0                                  | ND            | 117           | 70-130      |      |           |       |
| Perfluorotridecanoic acid (PFTrDA)           | 21.4                      | 2.0             | ng/L  | 20.0                                  | ND            | 107           | 70-130      |      |           |       |
| Perfluorotetradecanoic acid (PFTA)           | 21.8                      | 2.0             | ng/L  | 20.0                                  | ND            | 109           | 70-130      |      |           |       |
| Surrogate: 13C-PFHxA                         | 39.4                      |                 | ng/L  | 40.0                                  |               | 98.4          | 70-130      |      |           |       |
| Surrogate: 13C-PFDA                          | 38.3                      |                 | ng/L  | 40.0                                  |               | 95.6          | 70-130      |      |           |       |
| Surrogate: d5-NEtFOSAA                       | 161                       |                 | ng/L  | 160                                   |               | 100           | 70-130      |      |           |       |
| <b>Matrix Spike Dup (B216958-MSD1)</b>       | <b>Source: 18K0081-02</b> |                 |       | Prepared: 11/12/18 Analyzed: 11/15/18 |               |               |             |      |           |       |
| <b>Perfluorobutanesulfonic acid (PFBS)</b>   | 28.1                      | 2.0             | ng/L  | 17.7                                  | 3.05          | <b>142</b> *  | 70-130      | 2.35 | 30        | MS-12 |
| Perfluorohexanoic acid (PFHxA)               | 28.2                      | 2.0             | ng/L  | 20.0                                  | 3.82          | 122           | 70-130      | 10.6 | 30        |       |
| <b>Perfluoroheptanoic acid (PFHpA)</b>       | 27.0                      | 2.0             | ng/L  | 20.0                                  | ND            | <b>135</b> *  | 70-130      | 14.6 | 30        | MS-22 |
| Perfluorobutanoic acid (PFBA)                | 14.0                      | 2.0             | ng/L  | 20.0                                  | 2.82          | 55.9          | 30-110      | 15.2 | 30        |       |
| <b>Perfluorodecanesulfonic acid (PFDS)</b>   | 25.2                      | 2.0             | ng/L  | 19.3                                  | ND            | <b>131</b> *  | 70-130      | 2.81 | 30        | MS-12 |
| <b>Perfluoroheptanesulfonic acid (PFHpS)</b> | 29.7                      | 2.0             | ng/L  | 19.0                                  | ND            | <b>156</b> *  | 70-130      | 1.32 | 30        | MS-12 |
| Perfluorooctanesulfonamide (FOSA)            | 14.7                      | 2.0             | ng/L  | 20.0                                  | ND            | 73.7          | 30-110      | 28.5 | 30        |       |
| Perfluoropentanoic acid (PFPeA)              | 27.7                      | 2.0             | ng/L  | 20.0                                  | 2.60          | 125           | 70-130      | 11.5 | 30        |       |
| <b>6:2 Fluorotelomersulfonate (6:2 FTS)</b>  | 40.5                      | 2.0             | ng/L  | 19.0                                  | 4.03          | <b>192</b> *  | 70-130      | 3.00 | 30        | MS-12 |
| <b>8:2 Fluorotelomersulfonate (8:2 FTS)</b>  | 34.4                      | 2.0             | ng/L  | 19.2                                  | ND            | <b>179</b> *  | 70-130      | 15.2 | 30        | MS-12 |
| <b>Perfluorohexanesulfonic acid (PFHxS)</b>  | 30.3                      | 2.0             | ng/L  | 18.2                                  | ND            | <b>166</b> *  | 70-130      | 15.2 | 30        | MS-12 |
| <b>Perfluorooctanoic acid (PFOA)</b>         | 35.4                      | 2.0             | ng/L  | 20.0                                  | 8.85          | <b>133</b> *  | 70-130      | 8.62 | 30        | MS-22 |
| <b>Perfluorooctanesulfonic acid (PFOS)</b>   | 28.6                      | 2.0             | ng/L  | 18.5                                  | 3.83          | <b>134</b> *  | 70-130      | 10.3 | 30        | MS-22 |
| <b>Perfluorononanoic acid (PFNA)</b>         | 32.0                      | 2.0             | ng/L  | 20.0                                  | ND            | <b>160</b> *  | 70-130      | 13.3 | 30        | MS-12 |
| Perfluorodecanoic acid (PFDA)                | 23.8                      | 2.0             | ng/L  | 20.0                                  | ND            | 119           | 70-130      | 3.67 | 30        |       |
| NMeFOSAA                                     | 25.2                      | 2.0             | ng/L  | 20.0                                  | ND            | 126           | 70-130      | 8.64 | 30        |       |
| Perfluoroundecanoic acid (PFUnA)             | 25.9                      | 2.0             | ng/L  | 20.0                                  | ND            | 129           | 70-130      | 5.84 | 30        |       |
| <b>NEtFOSAA</b>                              | 27.7                      | 2.0             | ng/L  | 20.0                                  | ND            | <b>139</b> *  | 70-130      | 24.1 | 30        | MS-22 |
| Perfluorododecanoic acid (PFDoA)             | 24.9                      | 2.0             | ng/L  | 20.0                                  | ND            | 124           | 70-130      | 6.40 | 30        |       |
| Perfluorotridecanoic acid (PFTrDA)           | 23.8                      | 2.0             | ng/L  | 20.0                                  | ND            | 119           | 70-130      | 10.6 | 30        |       |
| Perfluorotetradecanoic acid (PFTA)           | 24.1                      | 2.0             | ng/L  | 20.0                                  | ND            | 120           | 70-130      | 9.73 | 30        |       |
| Surrogate: 13C-PFHxA                         | 28.6                      |                 | ng/L  | 40.0                                  |               | 71.6          | 70-130      |      |           |       |
| Surrogate: 13C-PFDA                          | 20.6                      |                 | ng/L  | 40.0                                  |               | <b>51.6</b> * | 70-130      |      |           | S-26  |
| Surrogate: d5-NEtFOSAA                       | 109                       |                 | ng/L  | 160                                   |               | <b>68.3</b> * | 70-130      |      |           | S-26  |

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**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.   |
| MS-12 | Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated. |
| MS-22 | Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.   |
| S-26  | Surrogate outside of control limits.  |
| V-20  | Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.  |

# CERTIFICATIONS

## Certified Analyses included in this Report

| Analyte                              | Certifications |
|--------------------------------------|----------------|
| <b><i>SOP 434-PFAAS in Water</i></b> |                |
| Perfluorobutanesulfonic acid (PFBS)  | NH-P           |
| Perfluorohexanoic acid (PFHxA)       | NH-P           |
| Perfluoroheptanoic acid (PFHpA)      | NH-P           |
| Perfluorobutanoic acid (PFBA)        | NH-P           |
| Perfluoropentanoic acid (PFPeA)      | NH-P           |
| 6:2 Fluorotelomersulfonate (6:2 FTS) | NH-P           |
| 8:2 Fluorotelomersulfonate (8:2 FTS) | NH-P           |
| Perfluorohexanesulfonic acid (PFHxS) | NH-P           |
| Perfluorooctanoic acid (PFOA)        | NH-P           |
| Perfluorooctanesulfonic acid (PFOS)  | NH-P           |
| Perfluorononanoic acid (PFNA)        | NH-P           |
| Perfluorodecanoic acid (PFDA)        | NH-P           |
| NMeFOSAA                             | NH-P           |
| Perfluoroundecanoic acid (PFUnA)     | NH-P           |
| NEtFOSAA                             | NH-P           |
| Perfluorododecanoic acid (PFDoA)     | NH-P           |
| Perfluorotridecanoic acid (PFTrDA)   | NH-P           |
| Perfluorotetradecanoic acid (PFTA)   | NH-P           |

## ***SW-846 8270D in Water***

|             |    |
|-------------|----|
| 1,4-Dioxane | NY |
|-------------|----|

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    | 09/6/2019  |
| VT-DW | Vermont Department of Health Drinking Water  | VT-255716     | 06/12/2019 |
| NC-DW | North Carolina Department of Health          | 25703         | 07/31/2019 |



I Have Not Confirmed Sample Container  
Numbers With Lab Staff Before Relinquishing  
Over Samples \_\_\_\_\_



**con-test®**  
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 HRP

Received By LR Date 11-2-18 Time 1300

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 # 572 Actual Temp - 2.0, 2.6  
By Blank # \_\_\_\_\_ Actual Temp - \_\_\_\_\_

Was Custody Seal Intact? NA Were Samples Tampered with? NA  
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 Client T Analysis T Sampler Name T  
pertinent Information? 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? NA 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.  | <u>12</u> | 1 Liter Plastic |           | 16 oz Amb.    |
| HCL-         |   | 500 mL Amb.   |           | 500 mL Plastic  |           | 8oz Amb/Clear |
| Meoh-        |   | 250 mL Amb.   |           | 250 mL Plastic  | <u>13</u> | 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:

# ATTACHMENT 2

## Institutional and Engineering Controls Certification Form



Enclosure 2  
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
Site Management Periodic Review Report Notice  
Institutional and Engineering Controls Certification Form



| Site Details  |        | Box 1  |
|---|--------|--|
| Site No.  | 336032 |  |
| Site Name Balchem Plant   |        |  |
| Site Address: Route 284      Zip Code: 10973  |        |  |
| City/Town: Wawayanda  |        |  |
| County: Orange  |        |  |
| Site Acreage: 3.000   |        |  |
| Reporting Period: May 05, 2012 to December 30, 2018   |        |  |
|   |        | YES    NO  |
| 1. Is the information above correct?  |        | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| If NO, include handwritten above or on a separate sheet.  |        |  |
| 2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?                       |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| 3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?  |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| 4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?               |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form. |        |  |
| 5. Is the site currently undergoing development?  |        | <input type="checkbox"/> <input checked="" type="checkbox"/> |

| Box 2  |  |
|--|--|
|  | YES    NO  |
| 6. Is the current site use consistent with the use(s) listed below?<br>Commercial and Industrial | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 7. Are all ICs/ECs in place and functioning as designed?   | <input type="checkbox"/> <input checked="" type="checkbox"/> |

**IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

**A Corrective Measures Work Plan must be submitted along with this form to address these issues.**

Representative for Balchem  
Signature of Owner, Remedial Party or Designated Representative

1.29.19  
Date