

de maximis, inc.

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Via Fedex

July 31, 2020

Ms. Patricia Pierre
Central New York Remedial Section
New York Remediation Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region II
20th Floor, 290 Broadway
New York, New York 10007

***Subject: Annual Progress Report for July 2019 through June 2020
Operations, Maintenance and Long Term-Monitoring Activities
Pollution Abatement Services (PAS) Site, Oswego, NY***

Dear Patricia:

This Annual Progress Report (Annual Report) is submitted pursuant to *Consent Decree 98-CV0112-NPMGJD (Consent Decree)* and details the operation, maintenance, and long-term monitoring activities at the Pollution Abatement Services (PAS) Site (Site) in Oswego, NY. This Annual Report covers the period July 1, 2019 through June 30, 2020 and is consistent with the requirements of Paragraph 30 of the Consent Decree. Our next annual progress report will be submitted on or before July 31, 2021 and will document work completed between the period July 1, 2020 and June 30, 2021.

The data for this report are presented in three attachments as discussed below. Attachment I presents graphs, figures and tables documenting long-term monitoring trends for the Site. Figures showing the Site, the Long Term Monitoring wells, the groundwater potentiometric surface contours and vertical hydraulic gradients are included in (Section I-A). Graphs showing groundwater elevations at the slurry wall well pairs are presented in (Section I-B). Semi-annual groundwater and leachate sampling results are included in (Section I-C). Tables showing the leachate volume removed from the Site LCW wells, the performance standards and additional Site well sample results are provided in (Section I-D). Attachment II of this report contains a description of the actions completed under the Consent Decree for each quarter of this reporting period. Site maintenance and monitoring records and leachate removal and disposal records for each quarter of the reporting period are also included in Attachment II. The PAS Site Institutional Control Implementation Plan Annual Certification is provided in Section B-6 of Attachment II and documents that the requirements of the Institutional Control Plan were satisfied during this reporting period. Finally, Attachment III of this report provides a description and schedule of the actions planned during the next reporting period (July 2020 - June 2021).

Allentown, PA • Clinton, NJ • Knoxville, TN • Farmington Hills, MI • Riverside, CA
St. Charles, IL • Sarasota, FL • Jacksonville, FL • Houston, TX • Simsbury, CT • Waltham, MA

SUMMARY OF LEACHATE REMOVAL ACTIVITIES

During this reporting period (July 2019 – June 2020) PAS leachate was treated and disposed at the City of Oswego POTW. A total of 180,000 gallons were removed from the containment system and discharged to the City of Oswego POTW. (Attachment I-D, Table 1).

HYDRAULIC CONTROL OF SLURRY WALL CONTAINMENT SYSTEM

The effectiveness of the hydraulic control of the slurry wall containment system is evaluated based on a review of water level elevations used to determine hydraulic gradients, both horizontal and vertical, around and beneath the containment system. Its effectiveness is also evaluated by determining whether the water level elevations are maintained below the top of the slurry wall at its downgradient extent. Horizontal gradients around the containment system are calculated using quarterly water level elevations recorded at the SWW-series monitoring wells which are located around the perimeter of the slurry wall as shown in Attachment I-B. Vertical gradients beneath the containment system are calculated based on the difference in the water level potentiometric surface in the overburden and the bedrock monitoring wells located in the vicinity of the containment system. Figures showing the potentiometric water surfaces for both the bedrock and overburden monitoring wells for each of the quarterly water level monitoring events are presented in Attachment I-A (Set 3).

The water level data for the upgradient SWW wells SWW1/2 and SWW3/4 show the regional groundwater is consistent with the past few years. The horizontal gradients at well pairs SWW-5/6 and SWW-11/12 are influenced by both leachate pumping and seasonal regional water level elevations, while horizontal gradients at other SWW well pairs are primarily affected by regional water level elevations outside the containment system. During the reporting period, the water levels at SWW-5 and SWW-11, the two interior SWW wells at the downgradient extent of the slurry wall, remained stable and showed the continued inward gradient pattern of recent years. Generally, the charts indicate that leachate pumping at the rates prescribed effectively maintains hydraulic control to the degree practicable, although seasonal levels outside the containment system influence the gradients.

The vertical gradient figures shown in Attachment I-A indicate that vertical gradients are also seasonally affected by the regional water levels outside the containment system. The vertical hydraulic gradient plots presented show upward gradient trends over most of the Site during the summer and fall, and upward gradients over the downgradient portion of the site including the LCW4 and LCW2 areas during the winter and spring periods. This is due to stable water levels inside the containment system. Vertical gradients typically trend downward during late summer when regional water levels are relatively low. This summer experienced shift from that pattern indicating the success of pumping.

The routine elevation monitoring conducted during this reporting period indicates hydraulic control of the slurry wall containment system is maintained through routine operation of the leachate collection system. This observation remains consistent with the observations reported in

previous annual reports.

LONG-TERM GROUNDWATER MONITORING RESULTS

The long-term groundwater quality monitoring results and trends for the downgradient monitoring wells LR-8 and M-21 are presented graphically for the period from May 2000 to May 2020 in Attachment I-C. LR-6 was last sampled in 2017 and indicated concentrations continued to be below the performance standards with only 1,1 dichloroethane detected consistent with historical concentrations in LR-6. The historical VOC concentrations at these wells are also presented in tabular format in Figure 2 in Attachment I-A. Semi-annual groundwater quality monitoring results indicate that VOC-concentrations (mainly chlorobenzene showing highest results) continue to fluctuate at low part per billion levels at the downgradient monitoring wells LR-8 and M-21. In accordance with the prior annual reports, LR-6 was not sampled during this reporting period and will be sampled again in 2022 prior to the next EPA 5-year review. Monitoring results at LR-8, the long-term monitoring well located closest to the downgradient extent of the slurry wall, remained low during the 2019-2020 period. Chlorobenzene concentrations fluctuated from ND to 10.1 ug/L in May 2020 above the performance standard of 5 ug/L. The other performance parameters were at or near ND levels. Monitoring results for downgradient well M-21, which is located south of Mitchell Street and north of the slurry wall containment system, were near ND for all performance parameters except chlorobenzene which was detected at 5.91 ug/L in May 2020. Recent trends for VOC constituents in the two monitoring wells show chlorobenzene as the parameter of highest concentration in both wells, and a seasonal variation of slightly higher concentrations for chlorobenzene in the fall versus the spring for LR-8 with the exception of fall 2019 and slightly higher concentrations for chlorobenzene in the spring versus the fall for M-21.

Well OD-3 was sampled for the Consent Decree performance standards in November 2019. Chlorobenzene was detected at 10.5 ug/L versus 16.3 ug/L observed in 2019. This was the only performance parameter detected above the performance standard of 5 ug/L. The 2019 observation is consistent with the historical gradually declining observations at OD-3. The current data along with historic data is provided in Table 3.

Graphs showing leachate concentrations at LCW-2 and LCW-4 during the period May 2000 to May 2020 are also included in Attachment I-C. Leachate VOC concentrations in leachate collection well LCW-2, located in the downgradient collection trench, and well LCW-4, located in the central collection trench, showed leachate quality results consistent with historic concentrations. LCW-4 VOC concentrations continued to be higher than VOC concentrations reported at LCW-2. Consistent with historical trends, Xylene continued to be the performance parameter with the highest concentration in the LCW-4 location. Chlorobenzene was the constituent with the highest concentration in LCW-2 over the period. Concentrations at both LCW locations, inside the containment area, remained above the concentrations of wells outside the containment area and the performance standards. The concentrations seen at LCW-4 were consistently an order of magnitude higher than the concentrations at LCW-2.

Although some constituents including chlorobenzene fluctuated near the performance standard in the downgradient wells, the long-term monitoring results continued to support the findings that

hydraulic control of the containment system controls VOC concentrations downgradient of the slurry wall containment system and that the Site remedies continue to be protective of human health and the environment.

If you have any questions, please call me at (865) 691-5052.

Sincerely,
de maximis, inc

dsr for

Clay McClarnon

CMC/dsr

Attachments

cc: PAS Oswego Steering Committee
Marla Weider, Esq. USEPA
Payson Long, NYSDEC, Div. of Hazardous Waste Remediation
Brian Rogers, NYSDEC Region 7 Office
Ian Ushe, NYDOH, Office of Public Health

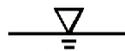
ANNUAL PROGRESS REPORT

PAS OSWEGO SUPERFUND SITE

OSWEGO, NEW YORK

July 2020

Submitted By:



de maximis, inc.

*450 Montbrook Lane
Knoxville, TN 37919
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PAS Oswego Superfund Site – 2020 Annual Report

LIST OF ATTACHMENTS

ATTACHMENT I – FIGURES, TABLES AND GRAPHS

I – A Figure 1 – Existing Site Wells

Figure 2 – Historical VOC Concentrations

Figure Set 3 -

Potentiometric Surfaces and Inferred Vertical Hydraulic Gradient Figures

Figure 2019-Q3-A - Potentiometric Surfaces – 8/6/2019

Figure 2019-Q3-B - Inferred Vertical Hydraulic Gradient – 8/6/2019

Figure 2019-Q4-A - Potentiometric Surfaces – 11/5/2019

Figure 2019-Q4-B - Inferred Vertical Hydraulic Gradient – 11/5/2019

Figure 2020-Q1-A - Potentiometric Surfaces – 2/11/2020

Figure 2020-Q1-B - Inferred Vertical Hydraulic Gradient – 2/11/2020

Figure 2020-Q2-A - Potentiometric Surfaces – 5/4/2020

Figure 2020-Q2-B - Inferred Vertical Hydraulic Gradient – 5/4/2020

I – B Slurry Wall Groundwater Elevation Charts

I – C Long Term Monitoring Groundwater and Leachate Quality Graphs

I – D Table 1 – Historical Leachate Removal Summary

Table 2 – Consent Decree Performance Standards

Table 3 – Additional Bedrock Groundwater Monitoring Results

ATTACHMENT II – ACTIONS COMPLETED

II – A 3rd Quarter 2019

A-1 Groundwater Elevation Data

A-2 Site Inspection Checklist

A-3 Leachate Disposal Checklist

A-4 Quarterly POTW Discharge Reports – 3rd Quarter 2019

II – B 4th Quarter 2019

B-1 Groundwater Elevation Data

B-2 Site Inspection Checklist

B-3 Leachate Disposal Checklist

B-4 Semi-Annual Leachate and Groundwater Monitoring Data (November 2019)

B-5 Quarterly POTW Discharge Reports – 4th Quarter 2019

B-6 Institutional Controls Certification Memorandum

B-7 Emerging Contaminant Report (Data Collected November 2020)

II – C 1st Quarter 2020

C-1 Groundwater Elevation Data

C-2 Site Inspection Checklist

C-3 Leachate Disposal Checklist

C-4 Quarterly POTW Discharge Reports – 1st Quarter 2020

II – D 2nd Quarter 2020

D-1 Groundwater Elevation Data

D-2 Site Inspection Checklist

D-3 Leachate Disposal Checklist

D-4 Semi-Annual Leachate and Groundwater Monitoring Data (May 2020)

D-5 Quarterly POTW Discharge Reports – 2nd Quarter 2020

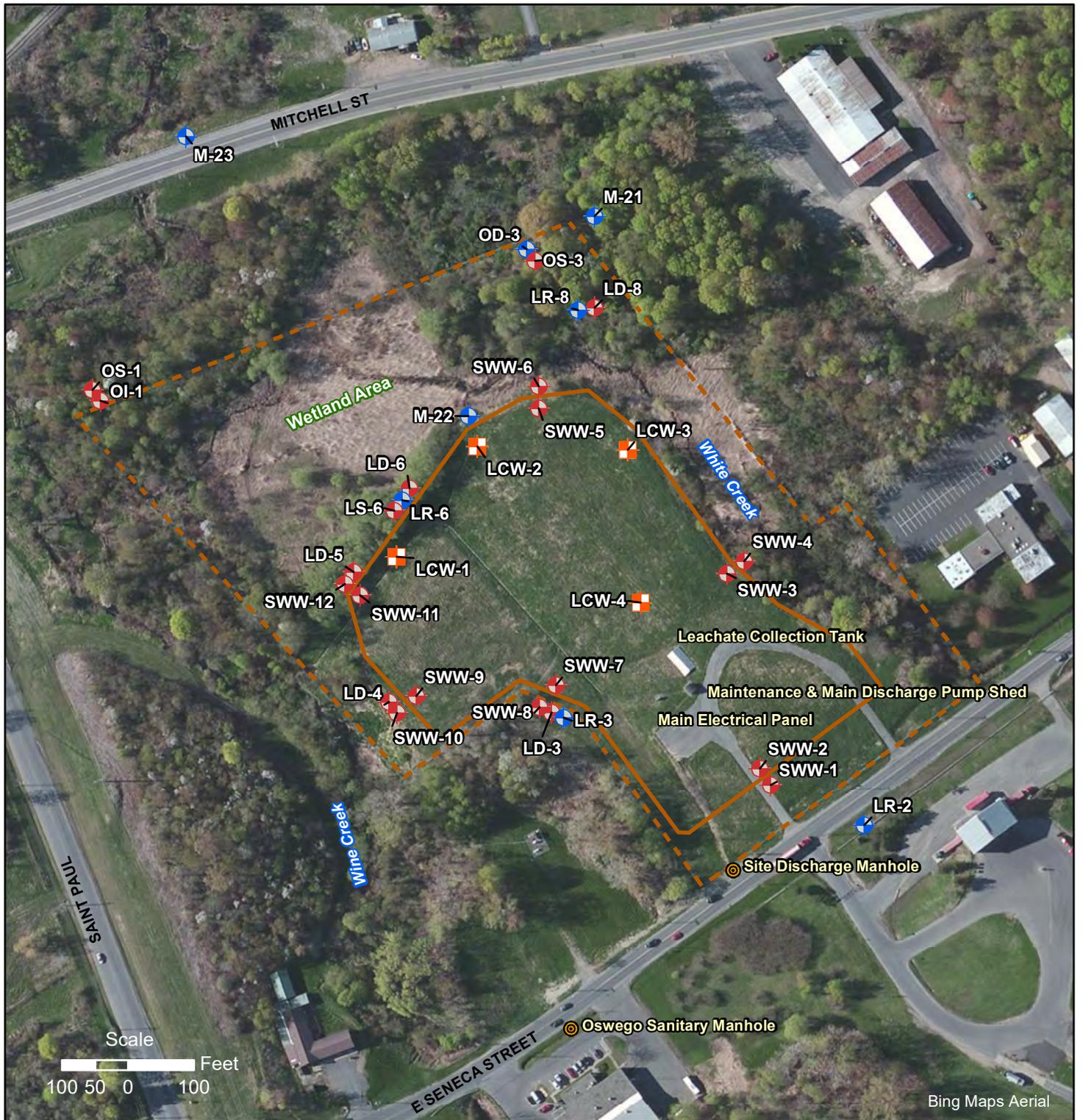
ATTACHMENT III – ACTIONS PLANNED

III – Future Report

ATTACHMENT I

FIGURES, TABLES AND GRAPHS

I-A
FIGURES



LEGEND

Sample Locations

- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- Manhole
- Fence (Site Boundary)
- Slurry Wall

EXISTING SITE WELLS

PAS Site, Oswego, New York



Project No.: 3131
 Plot Date: 4 May 2012
 Arc Operator: BJAR
 Reviewed by:

Figure 1



LR-8	May 1998	Nov 1998	May 1999	Nov 1999	May 2000	Nov 2000	May 2001	Nov 2001	May 2002	Nov 2002	May 2003	Nov 2003	May 2004	Nov 2004	May 2005	Nov 2005	May 2006	Nov 2006	May 2007	Nov 2007	May 2008	Nov 2008	May 2009	Nov 2009	May 2010	Nov 2010	May 2011	Nov 2011	May 2012	Nov 2012	May 2013	Nov 2013	May 2014	Nov 2014	May 2015	Nov 2015	May 2016	Nov 2016	May 2017	Nov 2017	May 2018	Nov 2018	May 2019	Nov 2019	May 2020		
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	1.9	0.15J	0.10J	ND	0.10J	0.10J	ND	ND	ND	0.10J	ND	ND	0.14J	0.16J	ND	ND	1.55	0.33J	ND	0.11J	0.9	ND	0.46J	ND	0.15J	ND	0.13J	ND	0.14J	ND	0.17J	ND									
Benzene	30	23	29	34	22	33	21	21	8.8	14	16	21	0.33J	0.31J	10	ND	9	0.31J	2.21	14.2	4.39	4.83	0.12J	12.6	6.65	12.5	1.53	5.88	ND	5.6	3.24	2.65	0.78	4.31	1.51	1.51	0.39J	2.95	0.33J	0.26J	0.48J	2.49	0.35J	ND	0.33J		
Chlorobenzene	6.4	6	7	8	7	8.2	7.3	6.3	6.5	4.9	7.5	9.7	ND	ND	12	ND	7.87	ND	5.35	14.6	12.5	7.82	ND	15.8	9.64	18	12.6	18.3	ND	21.2	13.1	19.9	12.9	17.6	13.2	11.9	4.1	17.3	8.48	12.1	11.6J+	14.4	11.1	ND	10.1		
Ethylbenzene	ND	0.12J	ND	ND	ND	0.12J	ND	ND	ND	0.14J	ND	0.16J	ND	0.15J	ND	ND	ND	0.26J	ND	ND	ND																										
Toluene	0.51J	ND	ND	ND	ND	ND	0.35J	0.41J	0.25J	0.35J	0.44J	0.47J	ND	ND	ND	ND	0.32J	ND	0.23J	0.49J	0.35J	0.29J	ND	0.61	0.39J	0.76	0.37J	ND	0.78	0.44J	0.61	0.35J	ND	0.32J	0.37J	0.17J	0.42J	0.18J	0.26J	0.28J	0.31J	0.26J	ND	0.29J			
Xylenes, Total	1.4J	ND	1J	ND	ND	1.1	0.96	1.2	0.18J	1.2	40J	1.4	ND	ND	ND	ND	0.35J	ND	0.16J	1.31	ND	ND	ND	0.34J	ND	ND	ND	0.36J	ND	0.58J	0.40J	0.40J	0.36J	0.34J	0.41J	0.39J	1.52	0.5J	ND	0.35J	ND	1.01J	0.38J	ND	0.36J		

M-21	May 1998	Nov 1998	May 1999	Nov 1999	May 2000	Nov 2000	May 2001	Nov 2001	May 2002	Nov 2002	May 2003	Nov 2003	May 2004	Nov 2004	May 2005	Nov 2005	May 2006	Nov 2006	May 2007	Nov 2007	May 2008	Nov 2008	May 2009	Nov 2009	May 2010	Nov 2010	May 2011	Nov 2011	May 2012	Nov 2012	May 2013	Nov 2013	May 2014	Nov 2014	May 2015	Nov 2015	May 2016	Nov 2016	May 2017	Nov 2017	May 2018	Nov 2018	May 2019	Nov 2019	May 2020			
1,1-Dichloroethane	ND	1.3	0.19J	0.32J	ND	0.13J	ND	0.13J	0.10J	ND	0.11J	ND	ND	0.10J	ND	ND	ND																															
Benzene	8.1	10	27	19	21	26	14	18	18	13	9.9	4.2	5.5	4	4.7	2.9	0.31J	2.1	3.2	0.63	0.68	0.89	0.43J	0.13J	0.20J	ND	ND	0.22J	ND	0.24J	ND	0.19J	ND	0.15J	ND	0.15J	ND	0.27J	0.22J	0.17J	0.83	4.19	3.25	5.91	0.23J			
Chlorobenzene	3.4J	3J	9	6	8	9.8	4.2	6.1	6.5	4.3	3.1	1.8	2.1	1.2	2.2	1	0.53	1.5	7.9	4.4	7.13	6.69	7.94	2.91	8.07	3.75	8.08	1.77	3.38	1.57	6.9	4.15	7.94	1.98	5.64	1.7	4.49	1.4	7.47	5.68	5.75J+	0.83	4.19	3.25	5.91			
Ethylbenzene	ND	ND	ND	ND																																												
Toluene	ND	ND	ND	ND	ND	ND	0.36J	0.48J	0.43J	0.34J	0.25J	0.14J	0.27J	ND	0.44J	0.26J	0.34J	0.36J	0.11J	0.39J	ND	0.37J	ND	0.13J	ND	0.33J	0.15J	0.34J	ND	0.25J	ND	0.19J	ND	0.26J	0.21J	0.21J	0.19J	0.12J	0.26J									
Xylenes, Total	0.6J	ND	1J	ND	ND	ND	0.47J	0.91	0.3J	0.33J	0.17J	0.15J	ND	0.31J	0.35J	ND	ND	0.58J	ND	ND	ND																											



LR-6	May 1998	Nov 1998	May 1999	Nov 1999	May 2000	Nov 2000	May 2001	Nov 2001	May 2002	Nov 2002	May 2003	Nov 2003	May 2004	Nov 2004	May 2005	Nov 2005	May 2006	Nov 2006	May 2007	Nov 2007	May 2008	Nov 2008	May 2009	Nov 2009	May 2010	Nov 2010	May 2011	Nov 2011	May 2012	Nov 2012	May 2013	Nov 2013	May 2014	Nov 2014	May 2015	Nov 2015	May 2016	Nov 2016	May 2017	Nov 2017	May 2018	Nov 2018	May 2019	Nov 2019	May 2020			
1,1-Dichloroethane	4.2J	6	3	9	2	4.2	ND	4.1	1.6	0.16J	1.6	2.1	2.1	2.9	2.2	2.66	3.28	2.83	1.88	11.4	2.26	3.21	2.09	3.43	1.65	2.2	1.66	2.55	1.83	3.19	0.95	1.98	1.1	1.75	0.68	1.21	0.6	1.35	NS	0.85	NS	NS	NS	NS				
Benzene	ND	NS	NS	NS																																												
Chlorobenzene	ND	NS	NS	NS																																												
Ethylbenzene	ND	NS	NS	NS																																												
Toluene	ND	NS	NS	NS	NS																																											
Xylenes, Total	ND	NS	NS	NS	NS																																											

Map Legend:

- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- Fence (Site Boundary)
- Slurry Wall

Notes:
VOC concentration values displayed in tables are measured in ug/L.

Data Qualifier Definitions:
 ND = Not detected
 NS = Not Sampled
 J = Estimated concentration (less than sample quantitation limit)
 J+ = Estimated, may be biased high

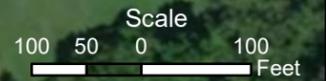
Basemap Source: esri World Imagery

Spatial Projection:
 Coordinate System:
 UTM Zone 18N
 Units: Meters
 Datum: NAD83

Plot Info:
 Created For: PAS
 Project No.: 1547-3131
 Plot Date: 7/27/2020
 Arc Operator: JNR
 Reviewed by: BF

Figure 2
Historical Concentrations of VOCs of Concern Detected in Consent Decree Wells (1998-2020)

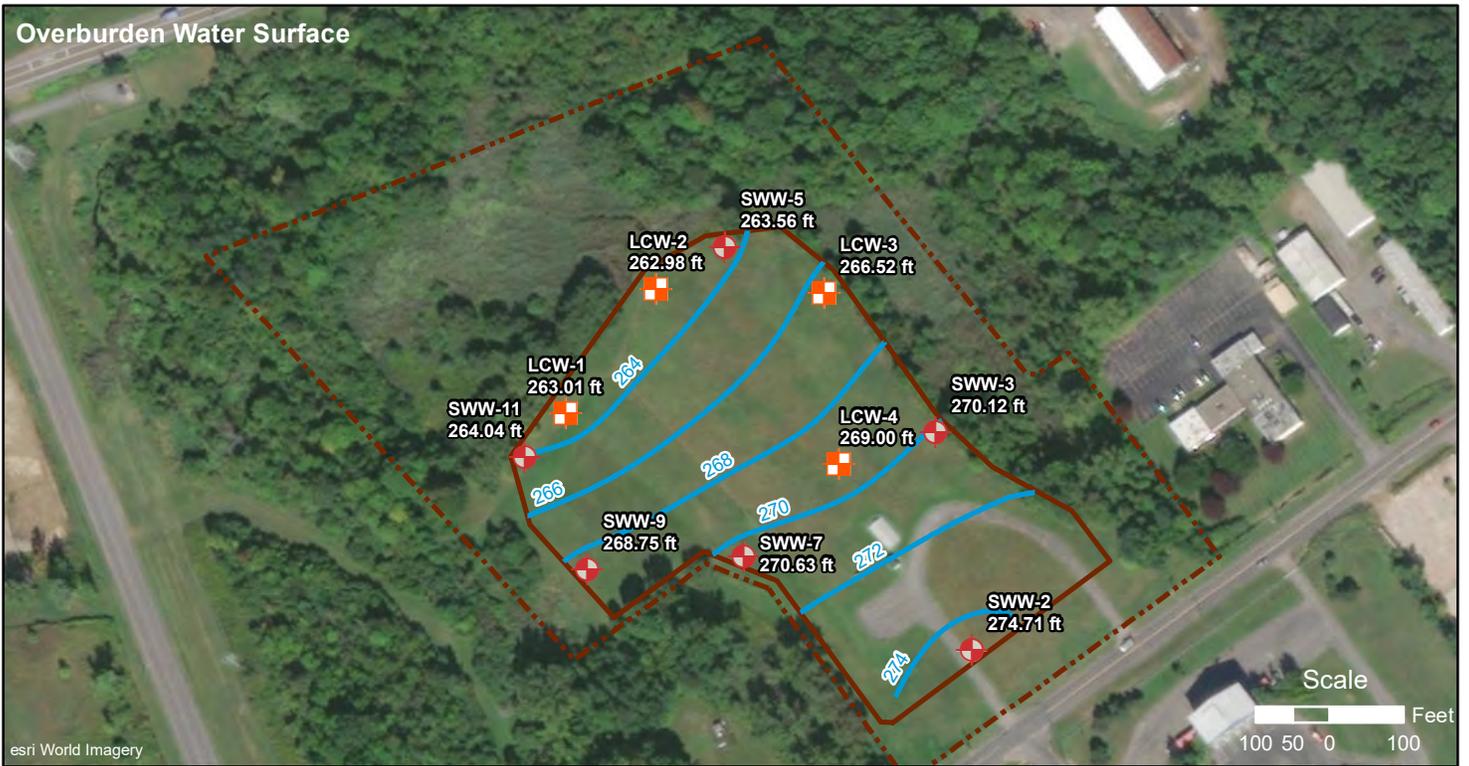
Pollution Abatement Services Site
 Oswego, New York



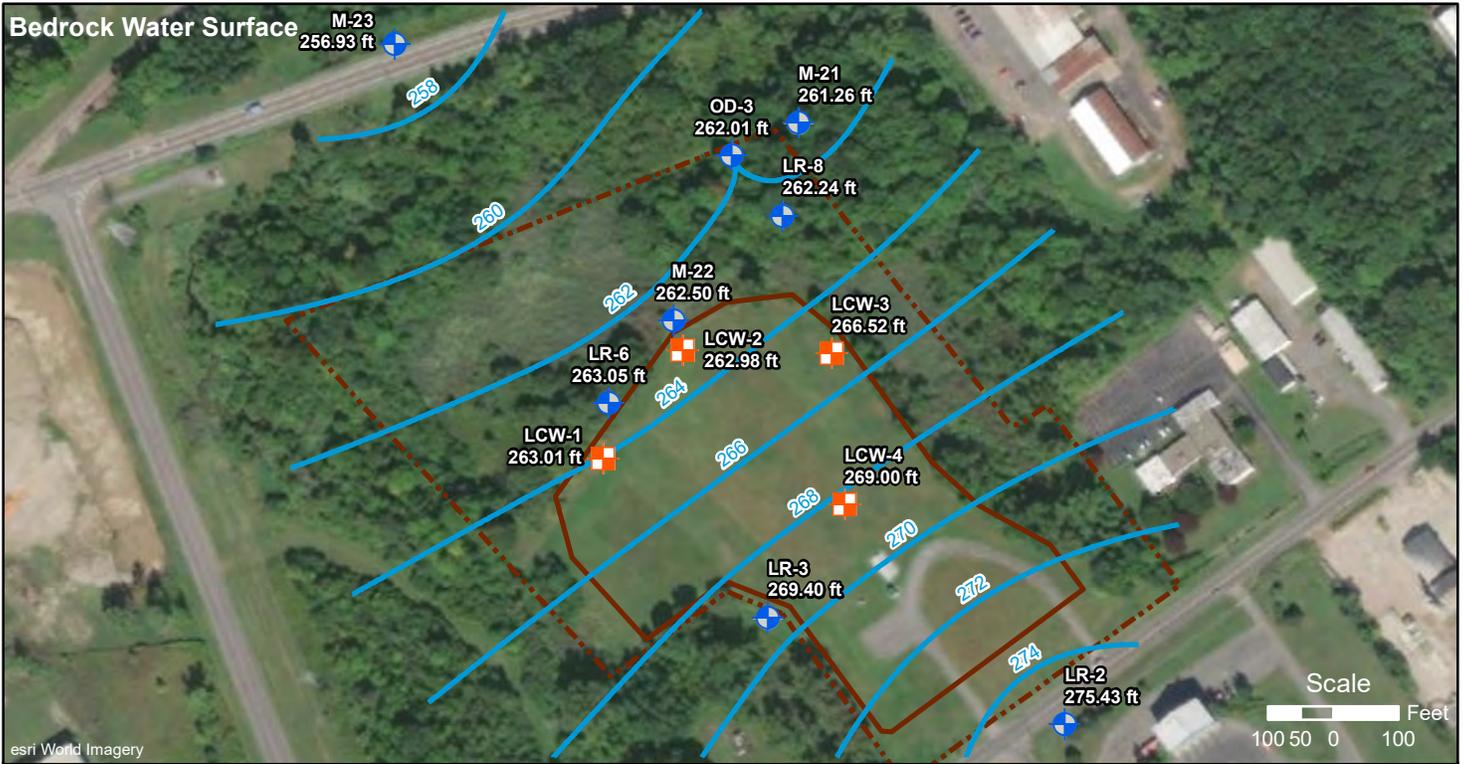
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FIGURE SET 3
HYDRAULIC GRADIENT

Overburden Water Surface



Bedrock Water Surface



LEGEND

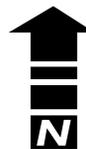
- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- Potentiometric Surface Contours (ft)
- Fence (Site Boundary)
- Slurry Wall

Notes: LCW wells labeled on Bedrock Water Surface map for reference only and were not used in creation of the potentiometric surface.

Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.

POTENTIOMETRIC SURFACES August 6th, 2019

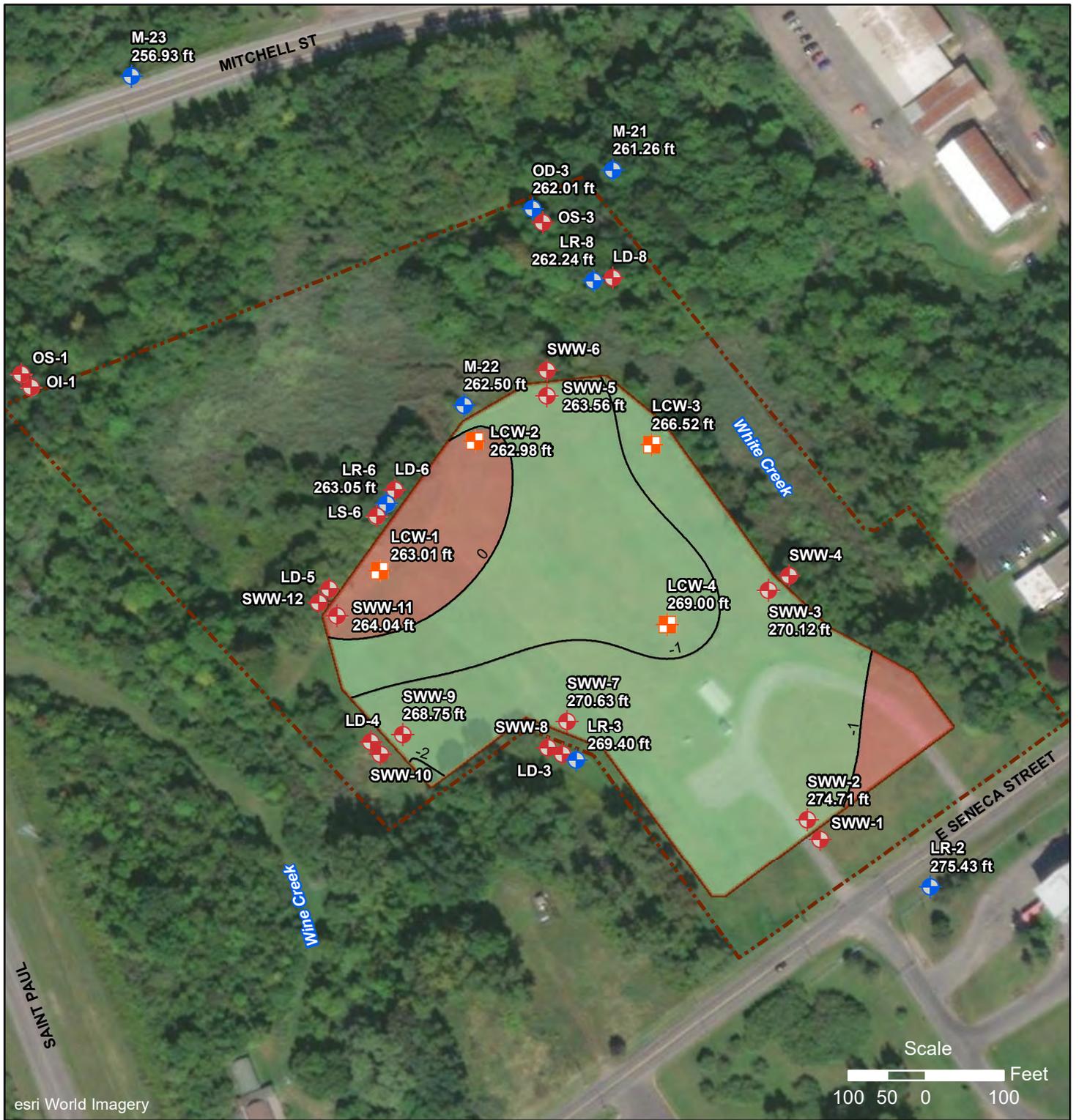
PAS Site, Oswego, New York



Project No.: 3131
Plot Date: 22 August 2020
Arc Operator: JNR
Reviewed by: BF

Figure 2019-Q3-A

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60 Plato Boulevard East, Suite 150
Saint Paul, Minnesota 55107
Main Phone: (651) 842-4224
www.ddmsinc.com



LEGEND

- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- Fence (Site Boundary)
- Line of Potentiometric Surface Difference (ft)
- Upward Vertical Hydraulic Gradient
- Downward Vertical Hydraulic Gradient
- Slurry Wall

Notes:
 Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.
 Negative gradient values indicate an upward hydraulic gradient.

INFERRED VERTICAL HYDRAULIC GRADIENT - August 6th, 2019

PAS Site, Oswego, New York



Project No.: 3131
 Plot Date: 22 July 2020
 Arc Operator: JNR
 Reviewed by: BF

Figure 2019-Q3-B

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LEGEND

- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- Fence (Site Boundary)
- Slurry Wall

Notes: LCW wells labeled on Bedrock Water Surface map for reference only and were not used in creation of the potentiometric surface.

Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.

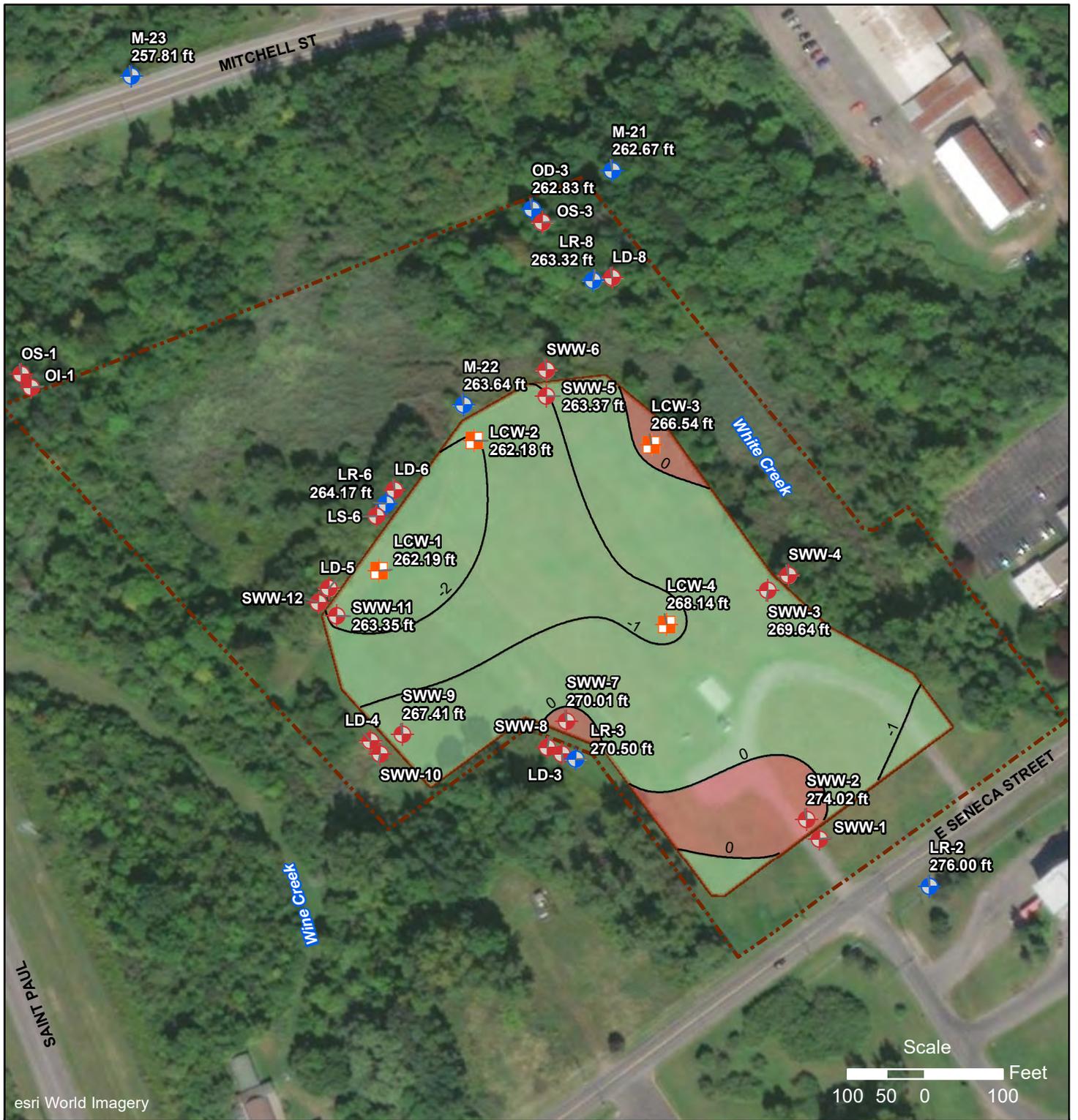
POTENTIOMETRIC SURFACES
November 5, 2019
 PAS Site, Oswego, New York



Project No.: 3131
 Plot Date: 7/5/2019
 Arc Operator: JNR
 Reviewed by: BF

Figure 2019-Q4-A





LEGEND

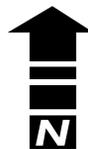
- Fence (Site Boundary)
- Line of Potentiometric Surface Difference (ft)
- Upward Vertical Hydraulic Gradient
- Downward Vertical Hydraulic Gradient
- Slurry Wall

Notes:
 Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.

Negative gradient values indicate an upward hydraulic gradient.

INFERRED VERTICAL HYDRAULIC GRADIENT - November 5, 2019

PAS Site, Oswego, New York



Project No.: 3131
 Plot Date: 5 July 2019
 Arc Operator: JNR
 Reviewed by: BF

Figure 2019-Q4-B



Overburden Water Surface



Bedrock Water Surface



LEGEND

- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- Fence (Site Boundary)
- Slurry Wall

Notes: LCW wells labeled on Bedrock Water Surface map for reference only and were not used in creation of the potentiometric surface.

Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.

POTENTIOMETRIC SURFACES

February 11, 2020

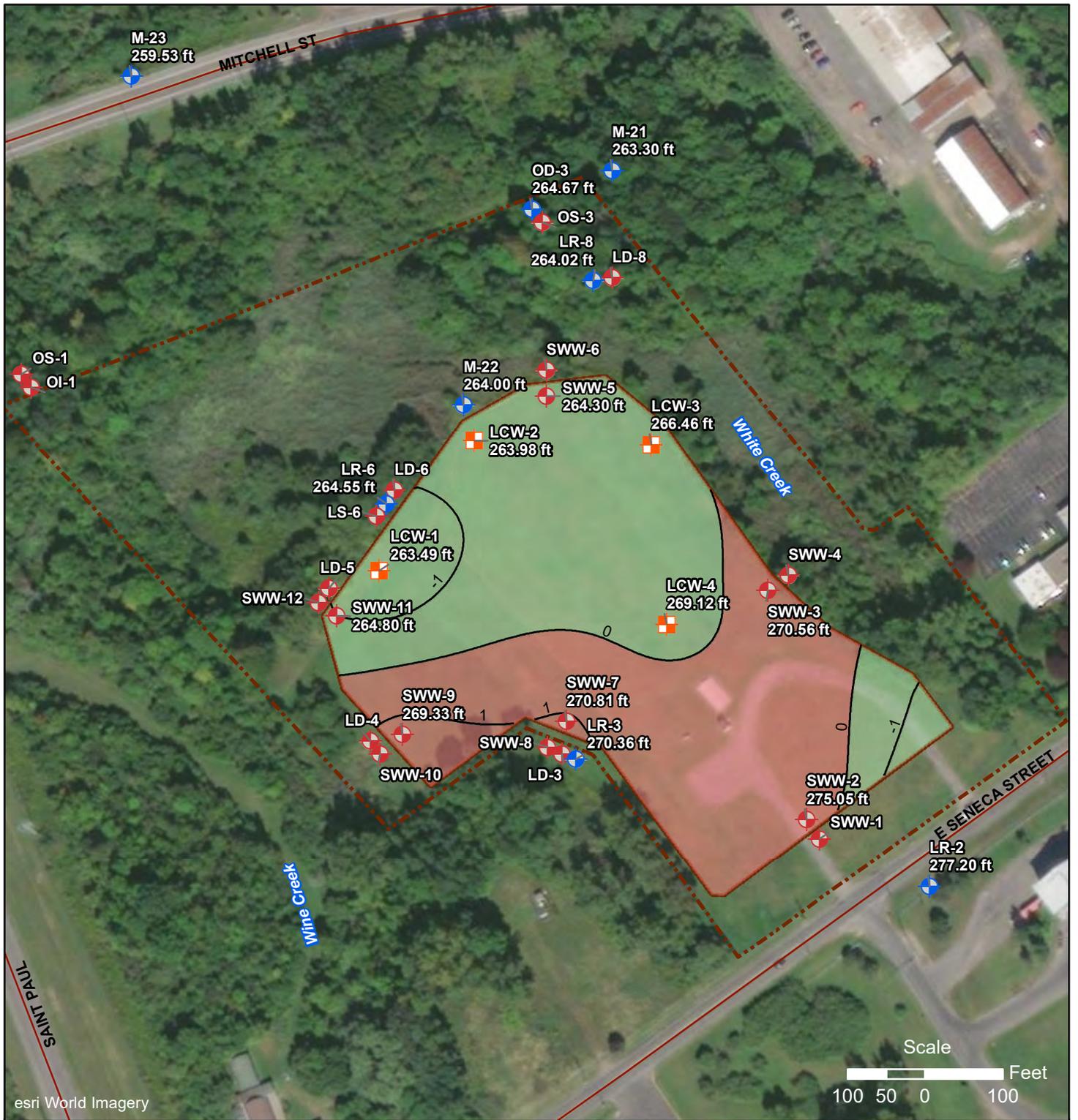
PAS Site, Oswego, New York



Project No.: 3131
 Plot Date: 7/5/2019
 Arc Operator: JNR
 Reviewed by: BF

Figure 2020-Q1-A

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LEGEND

- Fence (Site Boundary)
- StreetSegmentPublic_CUT
- Line of Potentiometric Surface Difference (ft)
- Upward Vertical Hydraulic Gradient
- Downward Vertical Hydraulic Gradient
- Slurry Wall

Notes:
 Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.

Negative gradient values indicate an upward hydraulic gradient.

INFERRED VERTICAL HYDRAULIC GRADIENT - February 11, 2020

PAS Site, Oswego, New York



Project No.: 3131
 Plot Date: 5 July 2019
 Arc Operator: JNR
 Reviewed by: BF

Figure 2020-Q1-B



Overburden Water Surface



Bedrock Water Surface



LEGEND

-  Bedrock Monitoring Well
-  Leachate Collection Well (Overburden)
-  Overburden Monitoring Well
-  Fence (Site Boundary)
-  Slurry Wall

Notes: LCW wells labeled on Bedrock Water Surface map for reference only and were not used in creation of the potentiometric surface.

Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.

POTENTIOMETRIC SURFACES
May 4, 2020

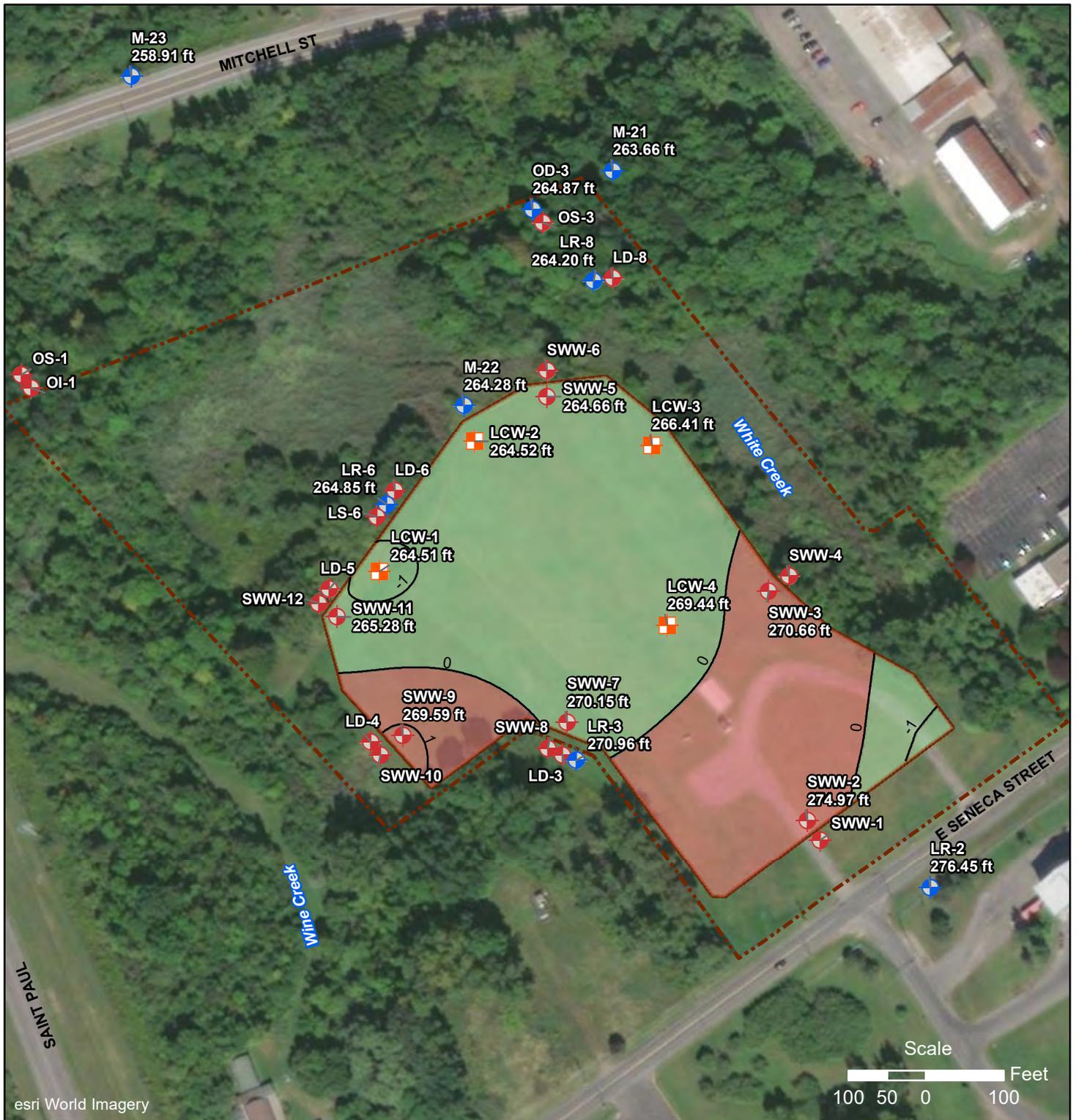
PAS Site, Oswego, New York



Project No.: 3131
Plot Date: 7/20/2020
Arc Operator: JNR
Reviewed by: BF

Figure 2020-Q2-A


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Saint Paul, Minnesota 55107
Main Phone: (651) 842-4224
www.ddmsinc.com



LEGEND

- Fence (Site Boundary)
- Line of Potentiometric Surface Difference (ft)
- Upward Vertical Hydraulic Gradient
- Downward Vertical Hydraulic Gradient
- Slurry Wall

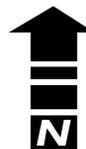
Notes:

Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.

Negative gradient values indicate an upward hydraulic gradient.

INFERRED VERTICAL HYDRAULIC GRADIENT - May 4th, 2020

PAS Site, Oswego, New York



Project No.: 3131
Plot Date: 20 August 2020
Arc Operator: JNR
Reviewed by: RF

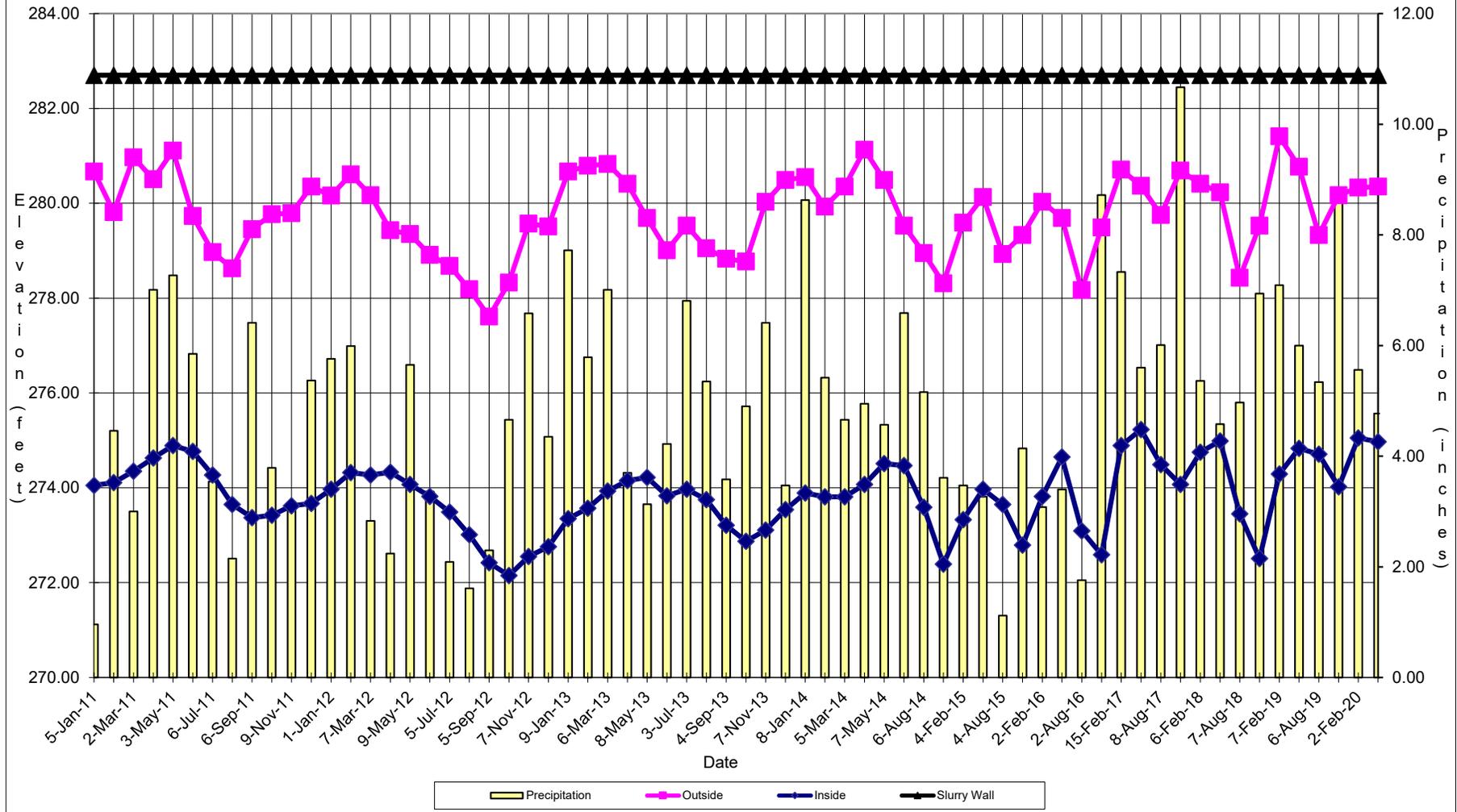
Figure 2020-Q2-B

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60 Plato Boulevard East, Suite 150
Saint Paul, Minnesota 55107
Main Phone: (651) 842-4224
www.ddmsinc.com

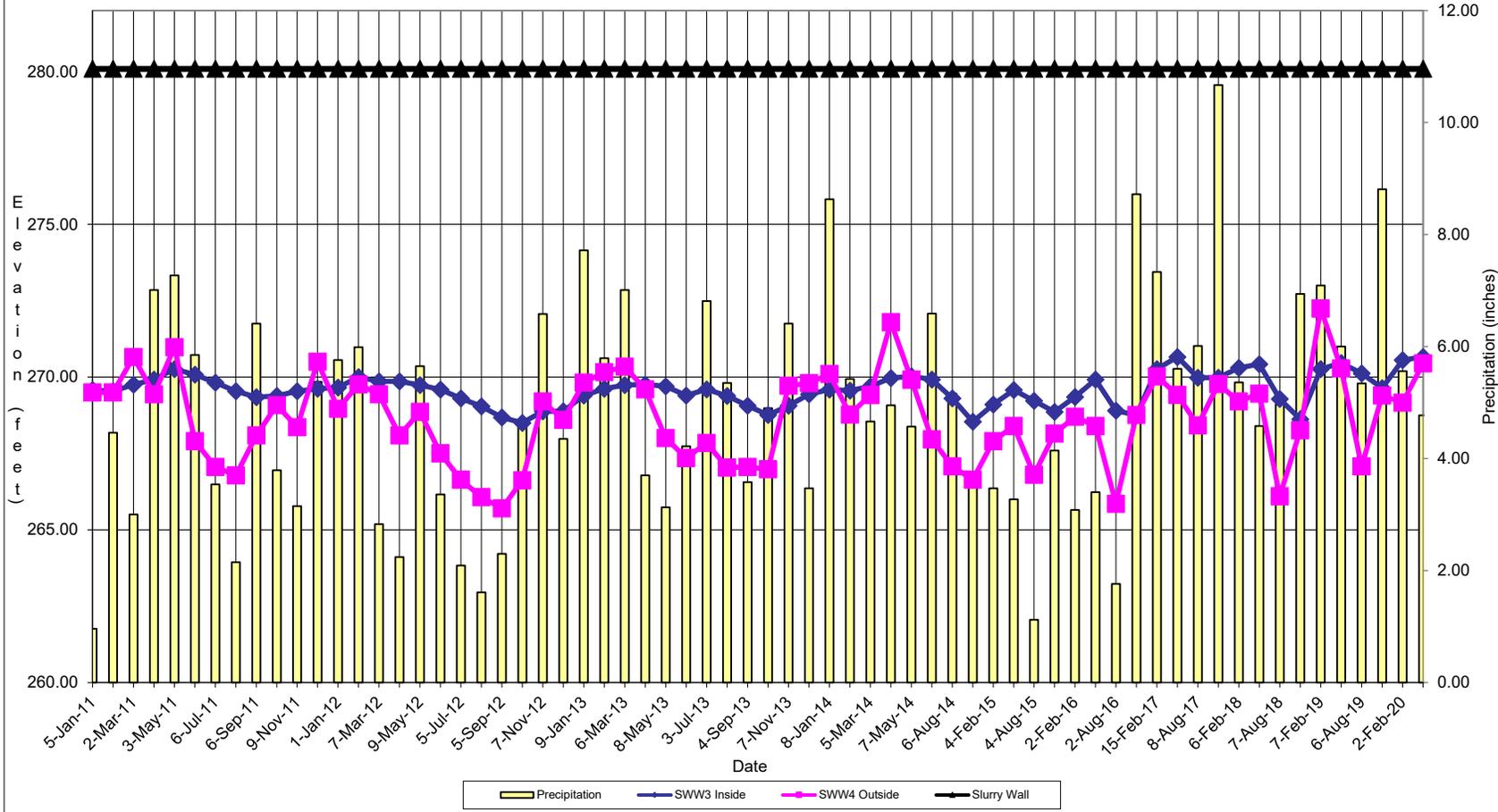
I-B

SLURRY WALL

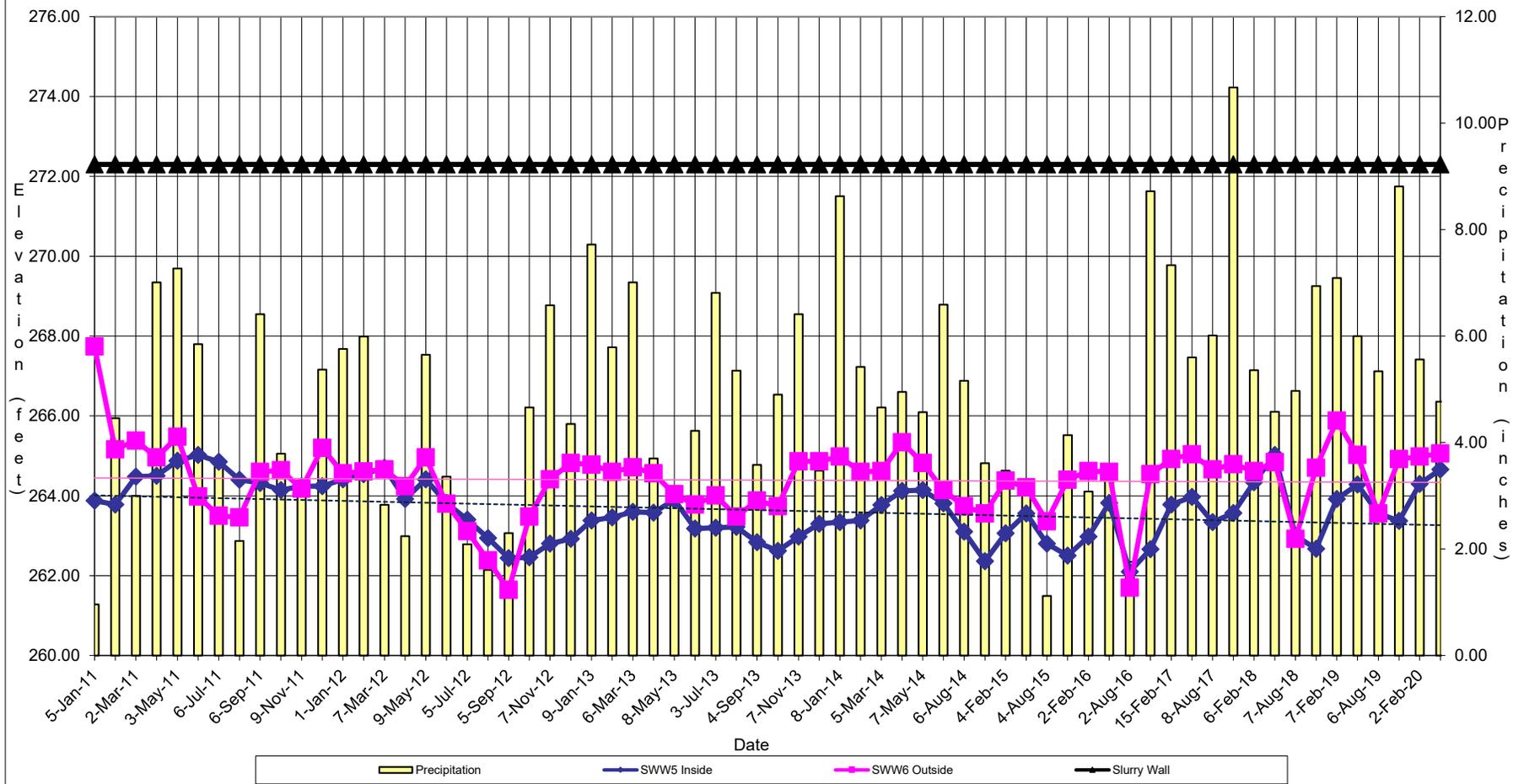
PAS - OSWEGO GROUNDWATER ELEVATIONS (SWW1 and SWW2)



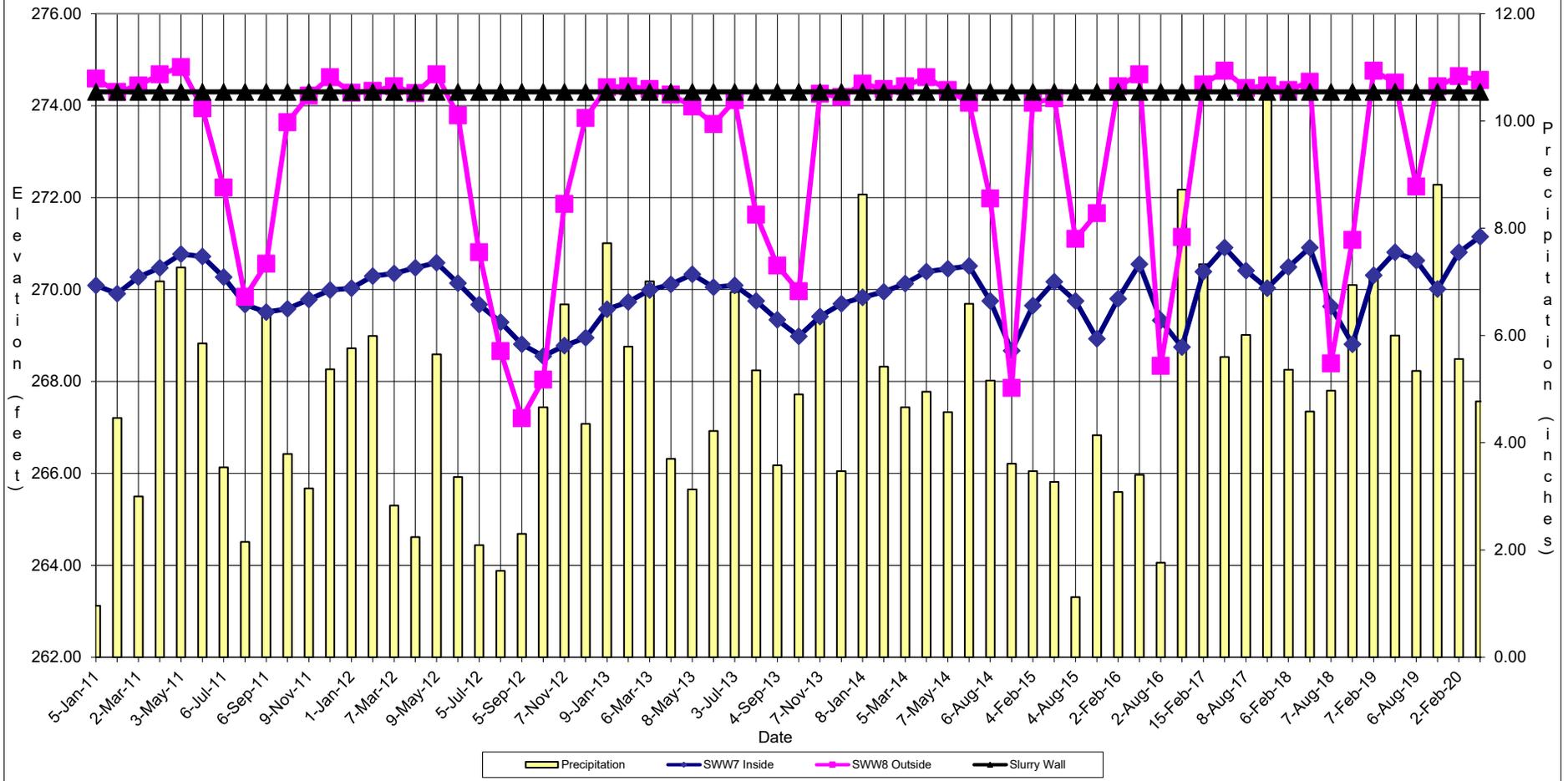
PAS - OSWEGO GROUNDWATER ELEVATIONS (SWW3 and SWW4)



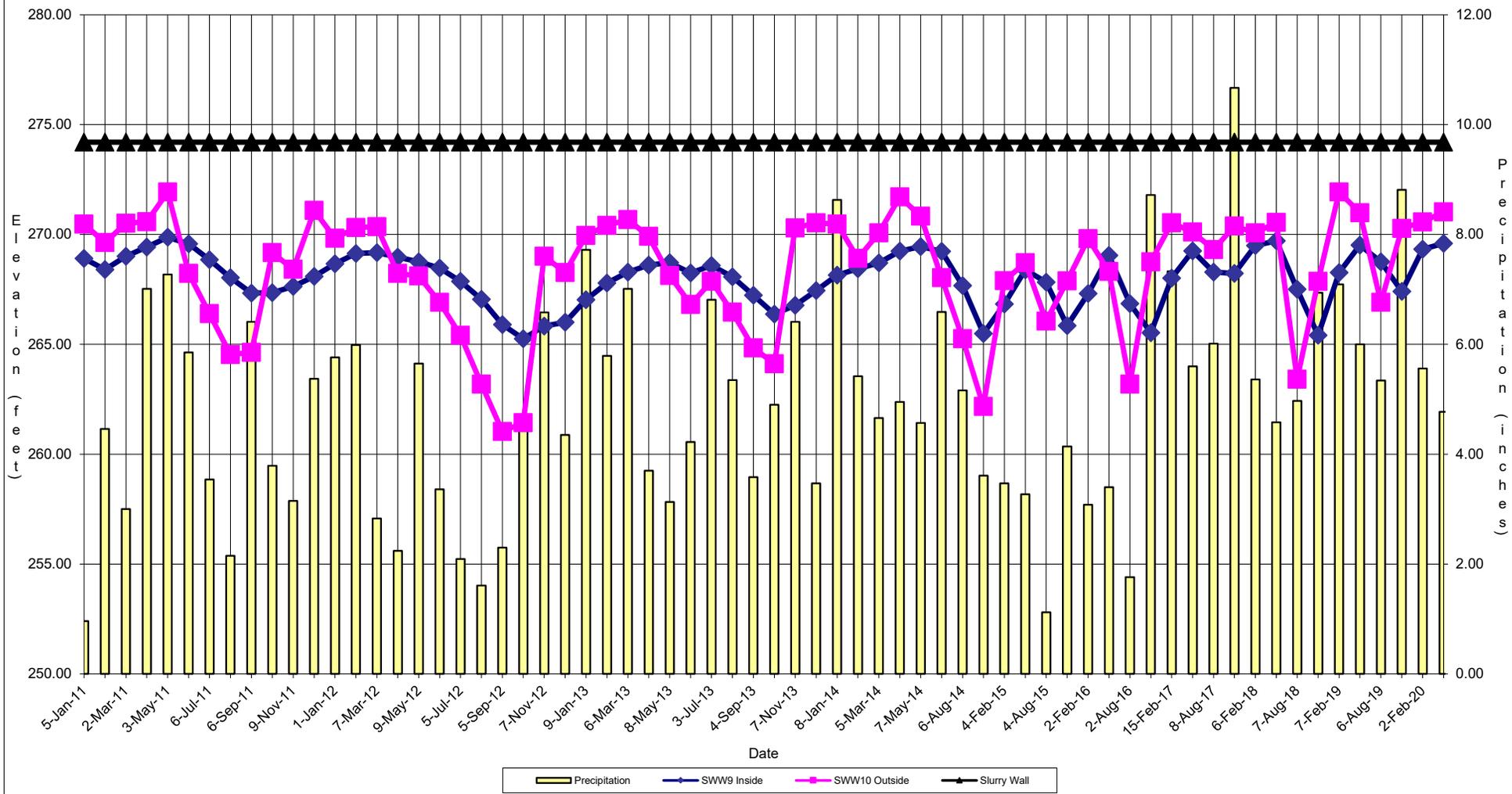
PAS - OSWEGO GROUNDWATER ELEVATIONS (SWW5 & SWW6)



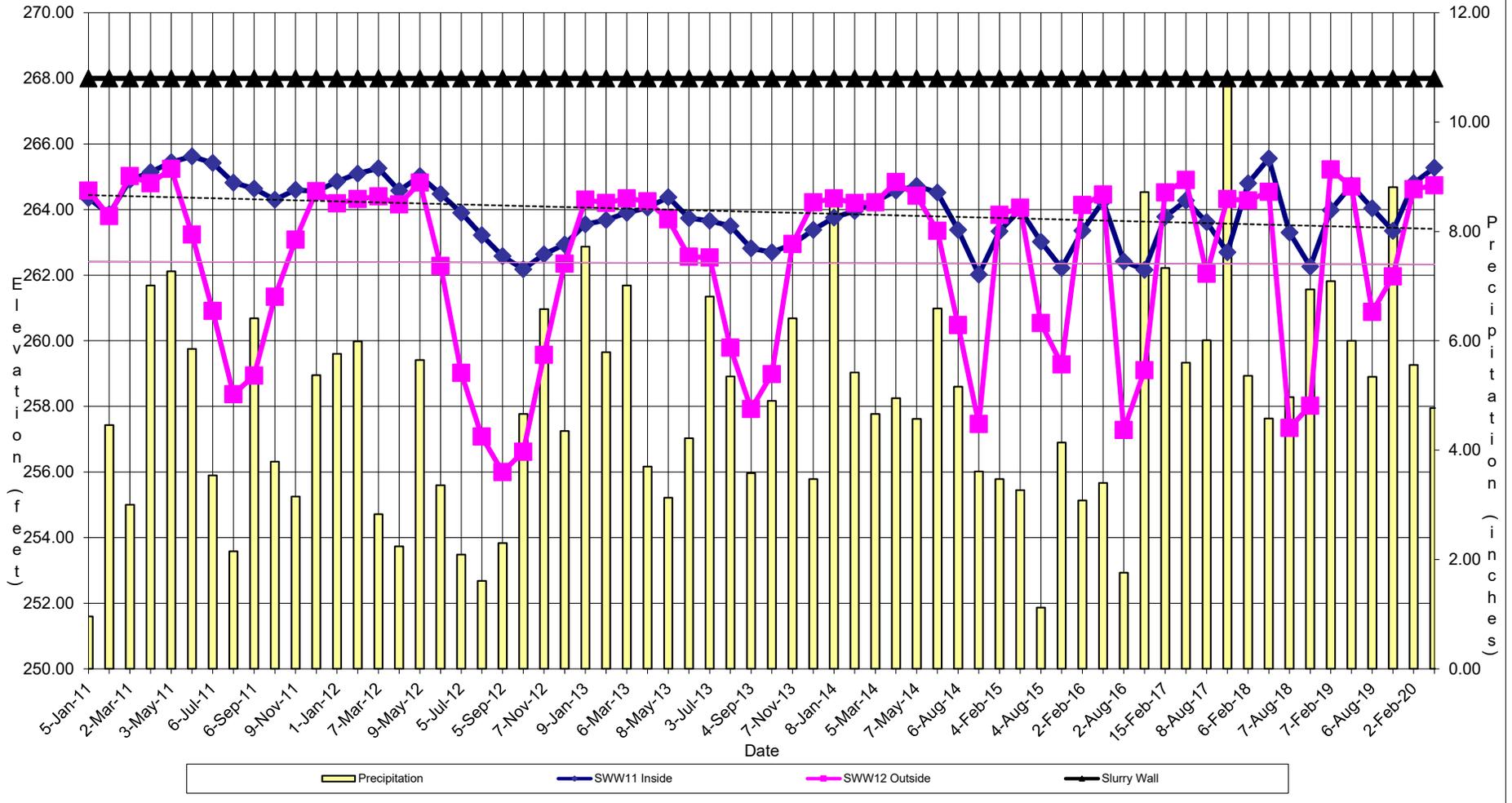
PAS - OSWEGO GROUNDWATER ELEVATIONS (SWW7 and SWW8)



PAS - OSWEGO GROUNDWATER ELEVATIONS (SWW9 and SWW10)

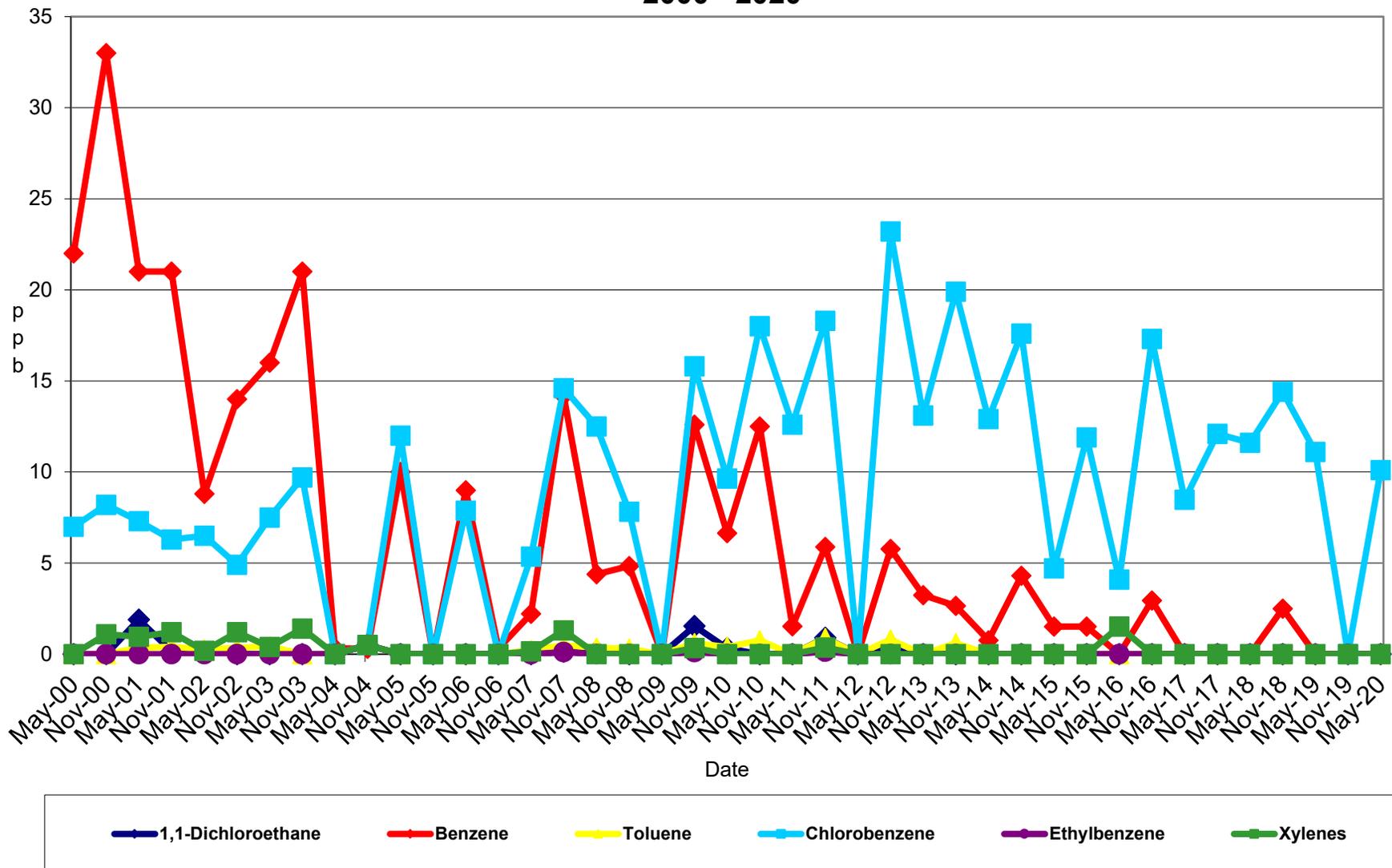


PAS - OSWEGO GROUNDWATER ELEVATIONS (SWW11 & SWW12)

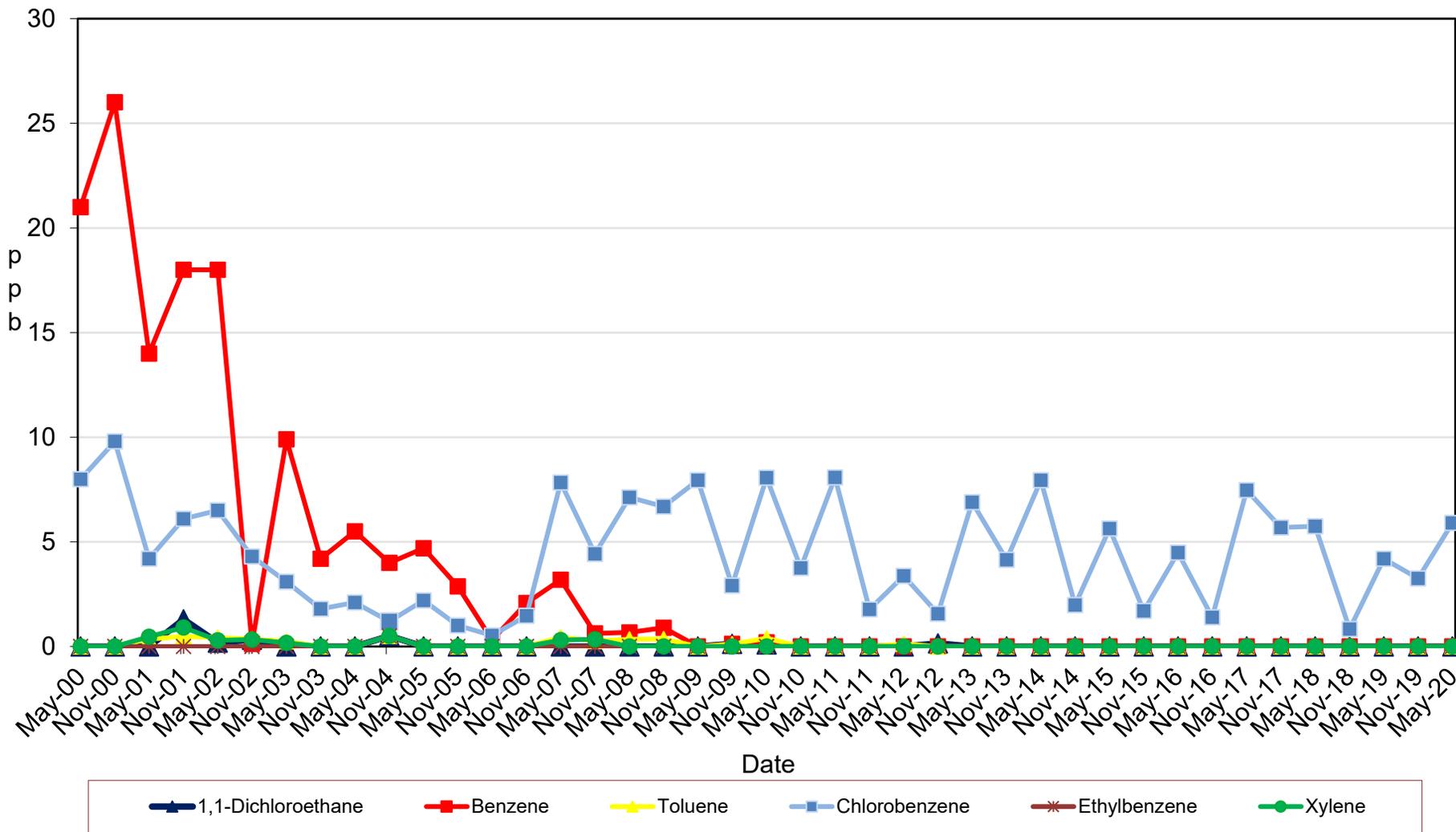


I-C
GRAPHS

Long Term Groundwater Monitoring at LR-8 PAS Oswego Superfund Site Groundwater 2000 - 2020

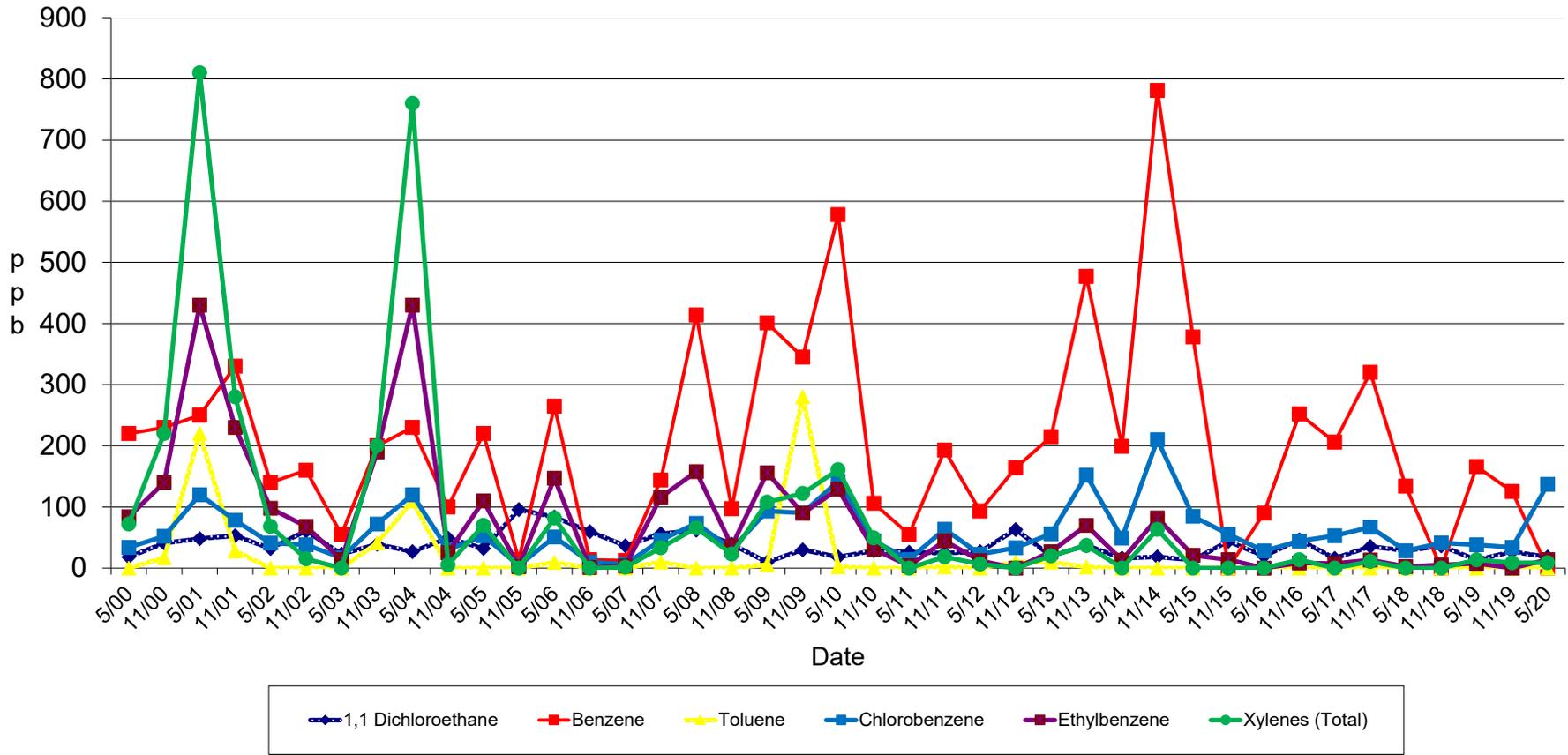


Long Term Groundwater Monitoring at M-21 PAS Oswego Superfund Site Groundwater 2000 - 2020

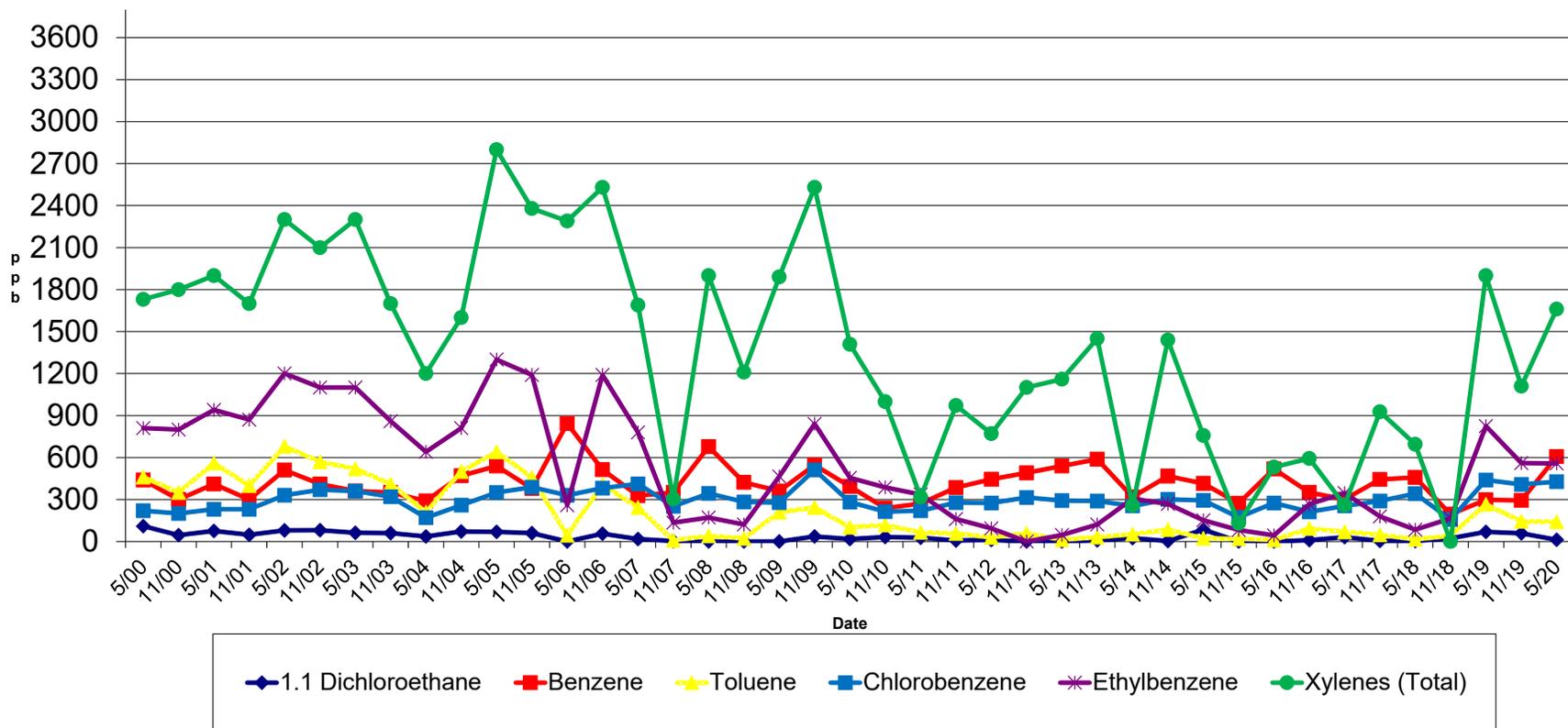


LCW
GRAPHS

LCW2
PAS Oswego Superfund Site Leachate Concentrations (ppb)
2000 - 2020



LCW4
PAS Oswego Superfund Site Leachate Concentrations (ppb)
2000 - 2020



I - D
TABLES

TABLE 1
HISTORICAL LEACHATE REMOVAL SUMMARY (Gallons)
Pollution Abatement Services Superfund Site
Oswego, New York

Month	91 IGR Order			94 IGR Order				98 Consent Decree																							
	1992	1993	1994	1994	1995	1996	1997	1998	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Jan		20,170	30,067		25,445	25,441	25,972	21,485		9,979	15,706	10,506	9,751	10,537	9,962	10,472	9,972	9,683	9,503	20,184	10,918	10,000	10,005	10,000	10,000	10,000	10,000	10,000	10,500	10,000	
Feb	18,937	20,283	29,661		25,830	23,457	22,316	12,924		16,056	9,687	10,294	10,444	9,904	9,899	10,300	10,030	9,620	9,656	11,200	11,293	10,010	10,000	10,000	10,000	10,000	10,005	10,000	10,500	10,000	
Mar	20,314	20,347	29,602		24,852	25,098	24,257	25,455		15,785	8,927	10,484	10,307	9,896	10,573	10,149	9,812	0	9,500	20,125	11,000	10,000	10,000	10,000	10,000	10,000	10,005	10,000	10,500	10,000	
Apr	20,140	30,403	29,051		22,815	22,187	26,793	26,009		28,110	9,352	19,609	8,463	10,211	9,765	9,947	9,795	10,058	8,575	19,600	10,995	10,010	10,000	10,000	10,000	10,125	10,000	10,005	10,000	10,000	
May	20,620	30,803	29,199		23,690	23,718	24,840	23,935		13,566	26,160	10,158	8,868	10,117	10,503	10,215	9,743	9,693	7,712	20,047	11,000	10,020	20,000	20,000	20,000	20,200	20,000	20,005	20,000	20,000	
Jun	20,030	30,244	20,481		24,586	23,924	23,830	20,052		20,685	25,292	10,055	9,822	10,518	10,105	10,193	9,885	10,110	9,474	19,000	10,950	10,005	20,000	20,000	20,000	20,400	20,000	20,005	20,000	20,000	
Jul	20,270	31,069	20,655		23,450	25,402	25,340	20,411		10,121	20,416	10,470	10,255	10,197	10,292	10,100	9,902	9,472	10,144	18,873	0	10,000	20,000	20,000	20,000	20,130	20,700	20,000	20,005	20,500	20,000
Aug	20,363	31,404	25,690		24,188	25,129	19,677	20,292		21,832	23,597	9,368	10,254	10,403	10,306	10,025	9,839	9,781	10,200	19,600	19,000	10,020	20,000	20,000	20,000	20,200	20,130	20,005	20,500	20,000	
Sep	20,807	31,232	25,677		18,343	21,514	20,417	20,520		10,255	20,407	10,473	9,907	10,566	10,456	9,672	9,499	9,616	10,000	19,000	12,800	20,005	20,000	20,000	20,000	20,700	20,000	19,895	20,500	20,000	
Oct	19,421	31,114	14,815	0	23,288	24,541	17,867	16,458		10,255	17,563	10,226	10,400	8,196	10,717	9,773	9,802	0	10,871	18,806	20,000	20,005	20,000	20,000	20,000	20,000	20,000	20,005	20,500	20,000	
Nov	20,409	30,239		25,562	20,133	20,589	18,564		8,185	10,250	9,042	9,355	10,435	9,908	10,486	9,987	9,692	9,497	10,750	19,068	20,000	20,005	10,000	10,000	10,100	10,000	10,005	10,500	10,000		
Dec	20,497	30,311		25,121	22,544	22,347	19,498		10,238	10,816	10,463	9,214	9,686	10,130	10,359	9,833	9,779	9,603	10,900	11,009	20,000	10,010	10,000	10,000	10,000	10,000	10,000	10,000	10,500	10,000	
Totals	221,808	337,619	254,898	50,683	279,164	283,347	269,371	207,541	18,423	177,710	196,613	130,212	118,592	120,583	123,423	120,666	117,750	97,133	117,285	216,512	157,956	150,090	180,005	180,000	180,130	182,425	180,130	179,950	183,000	182,000	80,000
Average Removal Per Month	20,164	28,135	25,490	16,894	23,264	23,612	22,448	20,754	9,212	14,809	16,384	10,851	9,883	10,049	10,285	10,056	9,813	8,094	9,774	18,043	13,163	12,508	15,000	15,000	15,011	15,202	15,011	14,996	15,250	15,167	13,333

SUMMARY:	TOTALS (GAL)	AVG RATE (GAL/MO)
1991 IGR Order:	814,325	23,951
1994 IGR Order:	1,090,106	22,710
1998 C D:	3,390,588	12,908 (11/98 to present)
Total (To Date):	5,295,019	

- 1) Used CECOS - Niagara Falls for leachate treatment/disposal beginning in May 1996 - DuPont Deepwater used for treatment/disposal prior to May 96.
- 2) BBLES completed removal work at the end of July 2000; OBG began in August 2000.
- 3) Leachate collection well LCW4 pumped per 11/15/99 LCW4 pumping protocol as approved by EPA.
- 4) Leachate disposed at Clean Harbors facilities at Bristol CT from Mar05 to Oct07 and Baltimore MD from Nov07 to Jun07.
- 5) Leachate disposed at the Auburn Wastewater Treatment Plant in Auburn, NY starting Jul 31 2008 to present.
- 6) Leachate disposed at the City of Oswego Wastewater Treatment Plant in Oswego, NY starting October 28, 2010 to present.

Table 2

PAS Site
Oswego, New York

Consent Decree
Performance Standards

Volatile Organic Compounds in Ground Water and Leachate		
Constituent	Analysis	Performance Standard ug/L
Benzene	8260B	0.7
Chlorobenzene	8260B	5
1,1-Dichloroethane	8260B	5
Ethylbenzene	8260B	5
Toluene	8260B	5
Xylenes	8260B	5

Notes:

1. ug/L = micrograms per liter which equates to parts per billion (ppb).

**TABLE 3
PAS OSWEGO SUPERFUND SITE
ADDITIONAL BEDROCK GROUNDWATER MONITORING RESULTS**

LTM CONSTITUENT	Perf Sto (ug/l)	Additional monitoring well MW-22											Additional mon well MW-23			Additional monitoring well OD-3												
		Apr 06	May 06	May 09	May 14	Nov 14	May 15	Nov 15	May 16	Nov 16	Nov 17	Apr 18	Apr 06	May 06	May 09	Apr 06	May 06	May 14	Nov 14	May 15	Nov 15	May 16	Nov 16	May 17	Apr 17	Nov 17	May-18	Nov-18	Nov-19
Benzene	0.7	0.12J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	1.25	ND	0.85	ND	ND	ND	ND	1.27	0.29J
Chlorobenzene	5	1J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11J	ND	ND	26.3	ND	19.2	ND	16.5	ND	ND	ND	ND	16.3	10.5
1,1-Dichloroethane	5	ND	0.14J	ND	1.27	ND	0.12J	0.30J	0.30J	0.30J	0.30J	0.30J	0.86	0.9	0.82	ND	ND	ND	ND	0.13J	ND	0.5	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16J	ND	ND	ND	0.31	ND	0.26J	ND	ND	ND	ND	0.28	0.13J
Xylenes	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11J	ND	0.31J	ND	0.39J	ND	ND	ND	ND	ND	ND	0.96	ND

NOTES:
1. Additional downgradient bedrock wells M-22, M-23 and OD-3 monitored during April and May 2006 pursuant to January 25, 2006 letter to EPA and EPA approval letter dated February 2, 2006. M-22 and OD-3 sampled in 2014 and 2015 pursuant to March 21, 2014 letter and EPA approval. Sampling of MW-22, LR-6 and OD-3 will be sampled in Fall 2022 to allow for use in EPA 5 yr review.
2. All results ug/L

ATTACHMENT II

ACTIONS COMPLETED

II - A

3RD QUARTER REPORT 2019

QUARTERLY PROGRESS REPORT – 3rd QUARTER 2019
Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: *Pollution Abatement Services Site*
 Oswego, New York

PERIOD COVERED: July – September (3rd Quarter) 2019

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 60,000 gallons of leachate were removed from the Site during the period of July, August, and September 2019. The specific quantities removed are 20,000 gallons in July, 20,000 gallons in August and 20,000 gallons in September. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of July – September 2019, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on August 6, 2019. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment A-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment A-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. No discrepancies were reported at the time of the inspection.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected and cleared of grass. No discrepancies were reported at the time of the inspection.
 - Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. A woodchuck was reported under the shed during July and August inspections but was absent in September.
 - Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control

systems were generally free of rodents, insects, and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof and wood structure.

- The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure, and main power distribution panel were inspected. No discrepancies were reported at the time of the inspection.
- On July 3, August 6, and September 11, 2019, OBG performed the monthly pre-pumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment A-2)
- Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. (Attachment A-3)
- During the months of July, August, and September 2019, OBG pumped a combined total of 60,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated in this period. (Attachment A-3)
- Upon completing each monthly leachate discharge the tank suction hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
- The PAS Oswego Site quarterly discharge report for the 3rd quarter of 2019 for the City of Oswego was submitted on October 7, 2019 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on October 2, 2019. The quarterly reports for Auburn do not follow annual quarters. Therefore, the quarterly report for Auburn included June, July, and August 2019. (Attachment A-4)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER

- The Groundwater Pre-Pumping Well Monitoring Level Form for August 6, 2019 is attached to this report. (Attachment A-1)
- The Site Inspection Checklist for July 3, August 6 and September 11, 2019 are attached to this report. (Attachment A-2)
- The Leachate Disposal Checklist for the July 3, August 6 and September 11, 2019 are attached to this report. (Attachment A-3)
- The PAS POTW Quarterly Discharge reports submitted on October 2, 2019 to the City of Auburn and the report submitted to the City of Oswego on October 7, 2019 are attached to this report. (Attachment A-4)

A – 1

**GROUNDWATER ELEVATION
DATA**

O'Brien & Gere Operation (O'Brien & Gere)
 PAS Oswego Site
 Oswego, New York
 Pre-Pumping Well Monitoring Levels

Date - 8-6-19

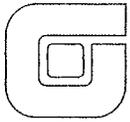
Technician - MARTIN KOENNECKE

Month - August 2019

Well Number	Riser Elevation	Well Range Verification			Monthly Onsite Field Measurements				NOTES
		Average Well Level	Low Well Level	High Well Level	Well Level (1st) Check	Well Level (2nd) Check	Well Within Range (based on historical well range data) YES NO	Well Level Check (3rd) (if "NO" & well is not within targeted range)	
SWW1	289.33	10.51	9.58	11.16	10.00	10.00	✓		
SWW2	289.37	15.84	14.88	16.36	14.66	14.66		✓	14.66
SWW3	286.50	17.10	16.52	17.60	16.38	16.38		✓	16.38
SWW4	283.60	16.76	15.18	18.00	16.52	16.52	✓		
SWW5	277.02	13.31	12.26	14.92	13.46	13.46	✓		
SWW6	273.06	9.67	8.40	11.36	9.50	9.50	✓		
SWW7	277.93	8.27	7.52	8.64	7.30	7.30		✓	7.30
SWW8	278.24	7.14	3.86	9.90	6.00	6.00	✓		
SWW9	285.55	17.76	17.26	18.70	16.80	16.80		✓	16.80
SWW10	280.43	14.93	11.12	17.24	13.52	13.52	✓		
SWW11	273.50	9.45	8.42	11.08	9.46	9.46	✓		
SWW12	272.82	13.27	10.78	15.74	11.94	11.94	✓		
LCW-1	272.21	9.11	7.50	10.84	9.20	9.20	✓		
LCW-2	274.44	11.36	9.76	13.08	11.46	11.46	✓		
LCW-3	284.36	17.99	17.71	18.50	17.84	17.84	✓		
LCW-4	285.70	17.76	17.10	18.48	16.70	16.70		✓	16.70
OS-1	272.10	12.95	9.82	16.48	12.10	12.10	✓		
OI-1	272.00	13.30	10.20	16.08	12.86	12.86	✓		
OS-3	277.89	16.73	15.42	18.40	15.90	15.90	✓		
OD-3	277.85	16.57	15.24	18.20	15.84	15.84	✓		
LD-3	278.62	7.30	4.22	10.26	8.38	8.38	✓		
LD-4	279.25	13.94	11.38	16.22	12.90	12.90	✓		
LD-5	272.94	13.87	11.28	16.38	12.56	12.56	✓		
LS-6	274.14	14.05	12.16	16.32	13.46	13.46	✓		
LD-6	274.03	13.35	11.64	15.80	12.94	12.94	✓		
LD-8	272.83	9.88	8.54	11.28	9.64	9.64	✓		
LR-2	289.85	14.59	13.55	15.70	14.42	14.42	✓		
LR-3	278.06	9.55	7.68	11.40	8.66	8.66	✓		
LR-6	274.39	11.76	10.32	13.70	11.34	11.34	✓		
LR-8	273.42	11.29	10.16	12.88	11.18	11.18	✓		
M-21	272.32	10.90	9.72	12.42	11.06	11.06	✓		
M-22	273.88	11.72	10.32	13.66	11.38	11.38	✓		
M-23	270.49	13.57	12.42	14.54	13.56	13.56	✓		

A – 2

SITE INSPECTION CHECKLIST



Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 7-3-19

Time 7:45

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 70°

Check (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		<u>under shed - woodchuck</u>
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		<u>OK</u>
French drainage system clear and function able	<input checked="" type="checkbox"/>		<u>Yes</u>
Concrete trough clear and function able	<input checked="" type="checkbox"/>		<u>OK</u>
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		<u>Yes</u>
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		<u>Yes</u>
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		<u>Yes</u>
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		<u>Yes</u>
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		<u>off</u>
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		<u>Yes</u>
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		<u>OK</u>

7-3-19

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured		
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	Yes
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	OK
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

Pumped 20,000 gallons Leachate To City of Oswego POTW
 weed whacked around SHED
 SITE needs mowing soon



Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 8-6-19

Time 7:45

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 70°
w/ Thunder Storms

Check (tasks completed in each event)

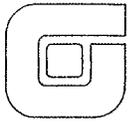
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		Woodchuck UNDER SHED
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		OK
Concrete trough clear and function able	<input checked="" type="checkbox"/>		OK
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		off
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

8-6-19

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	Yes
General Site Condition		
Trees & brush cleared off security fence	✓	work in progress
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	Yes
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	OK
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

Pumped 20,000 gallons Leachate To Oswego POTW
 Finished mowing site, Quarterly well levels



Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 9-11-19

Time 7:30

Field Technician MARTIN KOENIGKE

Weather Conditions PARTLY SUNNY 70°

Check (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		NONE VISIBLY
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		OK
Concrete trough clear and function able	<input checked="" type="checkbox"/>		OK
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open".	<input checked="" type="checkbox"/>		YES
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		YES
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		ADDED OIL
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		YES
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		OFF
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		YES
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

9-11-19

Leachate holding tank metal roof inspected for structural integrity	✓		OK
Leachate tank access doors locked (post pump out)	✓		YES
Pump power panel(s) secured			
Monitoring Wells (MW)			
Locks installed	✓		YES
MW's marked & identifiable	✓		OK
General Site Condition			
Trees & brush cleared off security fence	✓		WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓		OK
Site access driveway inspected & free on snow & damage	✓		YES
Security access gates / Padlock & chain serviceable	✓		YES
Site gate signage intact	✓		YES
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓		YES
Fire extinguisher serviceable, inspected, and inspection recorded	✓		YES
Spill control material inspected & adequate	✓		OK
PPE available and utilized as required	✓		YES
Emergency contact information posted within shed	✓		YES

Additional remarks (use separate sheet is required)

PUMPED 20,000 GAL. Leachate To Oswego POTW

ALBURN WTP Permit site Inspection

TRIMMED AROUND SHED AND TANK, Touch up PAINTING ON SHED

A – 3

**LEACHATE DISPOSAL
CHECKLIST**



O'BRIEN & GERE

*sent to city
7/12/19*

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 7-3-19

Time: 7:45

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 70°

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10"	LCW-1	7:50	11:20	10.5"	125 GPM	
	LCW-2	7:50	11:20			
	LCW-3	7:50	8:30			
	LCW-4	7:50	9:40			
				<i>(Intermittently pumped)</i>		
					Total	20,130

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:10	13:10	6.8	57°	1215165	1235165	20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
		20 min	0	14"			
Sample #1	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 9-11-19

Time: 7:30

Field Technician Martin Koenveski

Weather Conditions Partly Sunny 70°

Table with 7 columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes rows for LCW-1 to LCW-4 and a Total row.

Table with 8 columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes sections for Monthly Leachate Discharge Pumping and Semi-Annual Leachate Discharge Sampling.



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 8-6-19

Time: 7:45

Field Technician MARTIN KOENIG

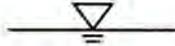
Weather Conditions Sunny 70°
w / THUNDER STORMS

Table with 7 columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes 'Pre-Discharge Well Pumping' section with rows for LCW-1 to LCW-4 and a Total row.

Table with 8 columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes 'Monthly Leachate Discharge Pumping (To the City of Oswego)' and 'Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)' sections.

A – 4

**QUARTERLY POTW
DISCHARGE REPORTS**



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865) 691-5052
(865) 691-9835 FAX

October 2, 2019

Mr. Tim O'Brien
Department of Municipal Utilities
35 Bradley Street
Auburn, New York 13021

Re: 3rd Quarter PAS Oswego Monitoring Report 2019

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during December 2017– September 2019. This has been due to the EPA allowance of an alternate disposal method.

- **Cumulative gallons removed for discharge in Auburn 3rd Qtr. 2019 - 0**
- **Cumulative gallons removed for discharge in Auburn 2019 - 0**

Since no wastewater was shipped or discharged to Auburn during the 3rd quarter of 2019, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

Please contact me at (865) 691-5052, if you have any questions.

Sincerely,
de maximis, inc.

Clay McClarnon

CMC/dsr

cc: PAS Management Committee



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865) 691-5052
(865) 691-9835 FAX

October 2, 2019

Mr. Timothy L. O'Brien
Industrial Pretreatment Coordinator
35 Bradley Street
Auburn, NY 13021

**Re: Industrial Pretreatment Program
Zero Discharge Certification Statement:**

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to September 2019, I certify that for Pollution Abatement Services located in Oswego New York:

1. There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.
2. No discharge of process wastewater has occurred since December 7, 2017.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Clay McClarnon
Name

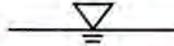
Project Coordinator
Title

Clay McClarnon
Signature

October 1, 2019
Date

(865) 691-5052
Phone





de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865) 691-5052
(865) 691-9835 FAX

Via electronic mail

October 7, 2019

Mr. John McGrath
Chief Operator
Westside Wastewater Treatment Plant
First Avenue & West Schuyler Streets
Oswego, New York 13126
Labmanager@oswegony.org

**Re: Quarterly Discharge Report – 3rd Quarter 2019
Pollution Abatement Services Site – Oswego, New York
City of Oswego Wastewater Discharge Permit 6-2019-20**

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from July 2019 through September 2019.

The PAS Site discharged a total of 60,000 gallons of leachate to the Oswego sewer system during the third quarter of 2019.

Discharge to City of Oswego July 2019 – September 2019 60,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely,
de maximis, inc.


Clay McClarnon

Attachments:

cc: Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant
Robert Johnson – City Engineer
PAS Oswego Site Management Committee

TABLE 1 - PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2019)
LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY
(Oswego SIU Wastwater Discharge Permit No.6-2019-20)

Discharge Quarter	4Q 2018		1Q 2019		2Q 2019		3Q 2019	
	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged
	10/3/18	20,500	1/8/19	10,500	4/2/19	10,500	7/3/19	20,000
	54/6.8		46/6.8		44/6.8		57/6.8	
	11/7/18	10,500	2/11/19	10,500	5/8/19	20,000	8/6/19	20,000
	54/6.8		42/6.8		46/6.8		55/6.8	
	12/4/18	10,500	3/5/19	10,500	6/4/19	20,000	9/11/19	20,000
	52/6.8		42/6.8		50/6.8		60/6.8	
Total Discharged		41,500		31,500		50,500		60,000
Date Sampled*	11/15/2018				4/2/2019			
Analytes	mg/L				mg/L		mg/L	
Antimony	ND <0.010				ND <0.0025			
Arsenic	0.025				0.018			
Beryllium	ND <0.010				ND <0.0010			
Cadmium	ND <0.010				ND <0.0004			
Chromium (total)	ND <0.010				ND 0.0072			
Copper	0.02				0.0214			
Cyanide	ND <0.010				.0057J			
Lead	ND <0.010				0.0015			
Mercury	ND <0.000001				ND <0.0000025			
Nickel	0.42				0.318			
Selenium	ND <0.010				ND <0.0025			
Silver	ND <0.010				ND <0.0025			
Thallium	ND <0.020				ND <0.00050			
Zinc	ND <0.020				ND <0.025			
VOC**								
1,1,1 TCA	0.00117							
MeCL	ND <0.0001							
PCE	0.00804							
Toluene	0.0112							
TCE	0.00319							
SVOC**	ND							
BOD 5	11				14			
TSS	36				37			
Phenolics	ND <0.010				ND <0.034			
pH	6.7				6.7			

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

Analyte values in bold exceed limit

ATTACHMENT I



O'BRIEN & GERE

*sent to city
7/12/19*

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 7-3-19

Time: 7:45

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 70°

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10"	LCW-1	7:50	11:20	10.5"	125 GPM	
	LCW-2	7:50	11:20			
	LCW-3	7:50	8:30			
	LCW-4	7:50	9:40			
				<i>(Intermittently pumped)</i>		
					Total	20,130

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:10	13:10	6.8	57°	1215165	1235165	20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
		20 min	0	14"			
Sample #1	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 8-6-19

Time: 7:45

Field Technician MARTIN KOENIG

Weather Conditions Sunny 70° w/ THUNDER STORMS

Table with 7 columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes 'Pre-Discharge Well Pumping' section with rows for LCW-1 to LCW-4 and a Total row.

Table with 8 columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes 'Monthly Leachate Discharge Pumping (To the City of Oswego)' and 'Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)' sections.



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 9-11-19

Time: 7:30

Field Technician Martin Koenveski

Weather Conditions Partly Sunny 70°

Table with 7 columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes rows for LCW-1 to LCW-4 and a Total row.

Table with 8 columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes sections for Monthly Leachate Discharge Pumping and Semi-Annual Leachate Discharge Sampling.

II - B

4TH QUARTER REPORT 2019

QUARTERLY PROGRESS REPORT – 4th QUARTER 2019
Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: *Pollution Abatement Services Site*
 Oswego, New York

PERIOD COVERED: October – December (4th Quarter) 2019

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 40,000 gallons of leachate were removed from the Site during the period of October, November, and December 2019. Specific quantities of leachate removed included 20,000 gallons in October, 10,000 gallons in November and 10,000 gallons in December. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of October – December 2019, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on November 5, 2019. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment B-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment B-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. No discrepancies were reported at the time of the inspection. (Attachment B-8)
 - Site entrance and roadways were cleared of snow prior to the pumping event in December.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected and cleared of accumulated grass. No discrepancies were reported at the time of the inspection.

- Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. No other discrepancies were reported at the time of the inspection.
 - Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control systems were generally free of rodents, and insects, and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof, and wood structure. No discrepancies were reported at the time of the inspection.
 - The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure and main power distribution panel were inspected. No discrepancies were reported at the time of the inspection.
- On October 8, November 6, and December 3, 2018, OBG performed the monthly pre-pumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. (Attachment B-2)
 - Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment B-3)
 - During the months of October, November, and December 2019, OBG pumped a combined total of 40,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated in this period. (Attachment B-3)
 - Upon completing each monthly leachate discharge the leachate discharge pump and tank suction hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
 - On November 7, 2019, OBG performed the semi-annual groundwater sampling for monitoring wells LR-8, M-21, and leachate collection wells LCW2 and LCW4. Based on the 2019 Annual Report, well OD-3 was included in the sampling event. Sampling activities for long term monitoring wells were conducted using low-flow sampling protocols described in the Work Plan. Samples were preserved using industry standard methods, and delivered to Life Science Laboratories in East Syracuse, NY for analysis. (Attachment B-4)

- On November 7, 2019, the semiannual discharge sample required under the City of Oswego POTW permit was taken and hand delivered to Life Science Laboratories in East Syracuse, NY for analysis the data was included in the Oswego 4th quarter discharge report.
- The PAS Oswego Site quarterly discharge report for the 4th quarter of 2019 for the City of Oswego was submitted on January 10, 2020 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on January 10, 2020. (Attachment B-5)
- The Institutional Control inspection was performed on November 5, 2019. This included interviews with the Industrial Precision Products facility manager and review of City and County records. (Attachment B-6)
- On November 7, 2019, OBG performed sampling of per and polyfluorinated compounds and 1,4 Dioxane in accordance with the approved sampling plan. The data are presented in the Emerging Contaminant report submitted on March 4, 2020. (Attachment-B7)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER

- The Groundwater Pre-Pumping Well Monitoring Level Form for November 5, 2019 is attached to this report. (Attachment B-1)
- The Site Inspection Checklist for October 8, November 5, and December 3, 2019 are attached to this report. (Attachment B-2)
- The Leachate Disposal Checklist for the October 8, November 6 and December 3, 2019 are attached to this report. (Attachment B-3)
- The validated lab report for the Semi-annual Groundwater sampling of LR-8, M-21 and the sampling for, LCW2, LCW4 and OD-3 performed on November 5, 2019 is attached to this report. (Attachment B-4)
- The PAS Quarterly Discharge reports submitted on January 10, 2020 to the City of Oswego and the report submitted to the City of Auburn on January 10, 2020 are attached to this report. (Attachment B-5)
- The Institutional Control inspection and record review is attached. (Attachment B-6)
- The Emerging Contaminant report submitted on March 4, 2020. (Attachment B-7)

B – 1

**GROUNDWATER ELEVATION
DATA**

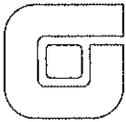
O'Brien & Gere Operation
 PAS Site
 Oswego, New York
 Pre-Pumping Monitoring Well Levels

5-Nov-19

Well Number	Ground Elevation	Riser Elevation	Nov-19					Within Range?			Ground-Water Elevation
			Reading 1	Reading 2	Reading 3	Average	Low	High	Y / N		
SWW1	286.2	289.33	9.16	9.16	9.16	9.75	8.62	11.62	Yes	280.17	
SWW2	286.3	289.37	15.35	15.35	15.35	16.38	15.3	17.4	Yes	274.02	
SWW3	286	286.5	16.86	16.86	16.86	17.35	16.52	17.96	Yes	269.64	
SWW4	282.9	283.6	14.2	14.2	14.2	15.02	13.44	17.12	Yes	269.4	
SWW5	275.9	277.02	13.65	13.65	13.65	13.6	12.55	14.66	Yes	263.37	
SWW6	270.9	273.06	8.14	8.14	8.14	8.73	7.95	9.58	Yes	264.92	
SWW7	273.3	277.93	7.92	7.92	7.92	8.75	7.9	9.43	Yes	270.01	
SWW8	275.7	278.24	3.82	3.82	3.82	5.91	3.8	11.38	Yes	274.42	
SWW9	283.3	285.55	18.14	18.14	18.14	18.74	17.32	20.06	Yes	267.41	
SWW10	279.3	280.43	10.16	10.16	10.16	12.63	9.71	18.65	Yes	270.27	
SWW11	271	273.5	10.15	10.15	10.15	9.98	8.81	11.48	Yes	263.35	
SWW12	270.2	272.82	10.86	10.86	10.86	11.52	8.5	15.36	Yes	261.96	
LCW-1	271.4	272.21	10.02	10.02	10.02	9.72	8.2	10.98	Yes	262.19	
LCW-2	272.6	274.44	12.26	12.26	12.26	11.97	10.44	13.22	Yes	262.18	
LCW-3	283.3	284.36	17.82	17.82	17.82	18.09	17.4	19.56	Yes	266.54	
LCW-4	283.8	285.7	17.56	17.56	17.56	18.78	16.64	19.8	Yes	268.14	
OS-1	269.63	272.1	11.9	11.9	11.9	12.09	8.4	16.6	Yes	260.2	
OI-1	269.14	272	12.52	12.52	12.52	12.65	11.1	15.26	Yes	259.48	
OS-3	274.63	277.89	15.22	15.22	15.22	16.04	13.56	18.58	Yes	262.67	
OD-3	274.96	277.85	15.02	15.02	15.02	15.88	13.4	18.42	Yes	262.83	
LD-3	275.8	278.62	4.18	4.18	4.18	6.63	4.18	11.77	No	274.44	
LD-4	276.3	279.25	10.6	10.6	10.6	12.54	9.85	17.15	Yes	268.65	
LD-5	270.02	272.94	11.82	11.82	11.82	12.57	8.8	15.86	Yes	261.12	
LS-6	271.4	274.14	12.74	12.74	12.74	12.99	9.56	15.78	Yes	261.4	
LD-6	270.09	274.03	11.25	11.25	11.25	11.69	9.9	13.88	Yes	262.78	
LD-8	269.9	272.83	8.8	8.8	8.8	9.76	6.8	15.38	Yes	264.03	
LR-2	287.5	289.85	13.85	13.85	13.85	13.6	12.63	14.96	Yes	276	
LR-3	275.5	278.06	7.56	7.56	7.56	9.05	7.4	12	Yes	270.5	
LR-6	270.9	274.39	10.22	10.22	10.22	11.08	10.05	12.72	Yes	264.17	
LR-8	270	273.42	10.1	10.1	10.1	10.79	9.45	12.84	Yes	263.32	
M-21	270.28	272.32	9.65	9.65	9.65	10.4	9.17	12.5	Yes	262.67	
M-22	270.4	273.88	10.24	10.24	10.24	11.06	10	12.62	Yes	263.64	
M-23	267.98	270.49	12.68	12.68	12.68	12.87	12.22	14.25	Yes	257.81	

B – 2

SITE INSPECTION CHECKLIST



Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 10-8-19

Time 7:50

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 47°

Check (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		NONE VISABLE
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		OK
Concrete trough clear and function able	<input checked="" type="checkbox"/>		OK
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		TURNED ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

10-8-19

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	OK
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	Yes
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

PUMPED 20,000 gnl Leachate To CITY of OSwego POTW



Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 11-6-19

Time 7:30

Field Technician Martin Koennike

Weather Conditions P-Sunny 40°

Check (tasks completed in each event)

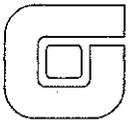
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		None visible
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		Yes
Concrete trough clear and function able	<input checked="" type="checkbox"/>		Yes
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

11-6-19

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	OK
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	SHINGLES REPLACED ON EDGE
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

PUMPED 10,000 gal Leachate To OSwego POTW, Quarterly well Levels
Semi Annual Leachate samples Taken Per OSwego Permit
Semi Annual well sampling Done
P-PAS sampling Done on wells M-21, SWW-3, LR-2 11-5-19
10-29-19 site maintenance - Fence Line, and concrete Trench cleaning
10-30-19 site maintenance - Fence Line cleaning



Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 12-3-19

Time 7:30

Field Technician MARTIN KOENIG

Weather Conditions P. SUNNY 25°

Check (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NONE VISABLE
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OK
French drainage system clear and function able	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SNOW COVERED
Concrete trough clear and function able	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SNOW COVERED -OK
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OK

12-3-19

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	Plow DRIVE
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	Yes
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

Pumped 10,000 gallons Leachate To City of Oswego POTW
 Site SNOW COVERED, PLOWED DRIVE

B – 3

**LEACHATE DISPOSAL
CHECKLIST**



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 10-8-19

Time: 7:50

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 47°

Table with columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes sub-header 'Pre-Discharge Well Pumping' and a Total row showing 18,780 gallons.

Table with columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes sub-header 'Monthly Leachate Discharge Pumping (To the City of Oswego)' and 'Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)'.



O'BRIEN & GERE

PAS Site
Oswego, New York

Leachate Discharge Form

Date: 11-6-19

Time: 7:30

Field Technician MARTIN KOENNECKE

Weather Conditions P. Sunny 40°

Well Pump	Pre-Discharge Well Pumping				
	Pump Start Time	Pump Stop Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)
LCW-1	7:40	8:55	START-10"	134 GPM	
LCW-2	7:40	8:55	STOP 43"		
LCW-3	7:40	8:00			
LCW-4	7:40	8:55			
Total					10,065

Discharge #	Leachate Discharge Pumping (Monthly)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:00	11:30	6.80	54°	1295165	1305165	10,000
Discharge #2							
Total							10,000

Sample #	Leachate Discharge Sampling (Semi-Annually)					
	Date	Sample Location	Composite Sample Volume	Sample Time	pH	Temperature
Sample #1	11-6-19	Sample Port	2 gal	10:30	6.80	54°
Sample #2 (if required)						



O'BRIEN & GERE

**PAS Site
Oswego, New York**

Leachate Discharge Form

Date: 12-3-19

Time: 7:30

Field Technician MARTIN KOENNECKE

Weather Conditions P-SUNNY 25°

Well Pump	<i>Pre-Discharge Well Pumping</i>				
	Pump Start Time	Pump Stop Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)
LCW-1	8:15	9:40	START - 10"	112 GPM	10,065
LCW-2	8:15	9:40	STOP - 43"		
LCW-3	8:15	8:30			
LCW-4	8:15	9:40			
Total					10,065

Discharge #	<i>Leachate Discharge Pumping (Monthly)</i>						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:50	11:50	6.8	52°	1305165	1315165	10,000
Discharge #2							
Total							10,000

	<i>Leachate Discharge Sampling (Semi-Annually)</i>					
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature
Sample #1						
Sample #2 (if required)						

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**SEMIANNUAL LEACHATE AND
GROUNDWATER MONITORING DATA**

DATA VALIDATION

FOR

**WATER MONITORING
PAS Oswego
OSWEGO, NEW YORK**

**ORGANIC ANALYSIS DATA
Volatiles in Water
Laboratory Job No.
1918677**

Analyses Performed

By:

**Life Sciences Laboratory
East Syracuse, NY**

For:

**de maximis, Inc.
Knoxville, TN 37919**

Data Validation By:

**ddms, Inc.
St. Paul, Minnesota 55108**

May 19, 2020

**1547-3131/mmd/das
PAS\1918677_voa**

EXECUTIVE SUMMARY

Validation of the volatile organics analysis data prepared by Life Sciences Laboratories, Inc. for six water samples, one equipment blank, and one trip blank supporting the PAS Oswego (Site) Semi Annual Well Sampling event has been completed by de maximis Data Management Solutions, Inc. (ddms). The data were reported by the laboratory under Laboratory Job No. 1918677. The following samples were reported:

Equipment Blank	M-21	OD-3	LR-8	LCW-2
LCW-4	X-1	QC Trip Blank		

Based on the validation effort, the following qualifiers were applied:

- Results for cyclohexane in samples Equipment Blank, LR-8, LCW-2, and QC Trip Blank were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve.
- Results for xylenes, total, in all samples except LCW-4 were qualified as estimated (J, UJ) due to imprecision at the lower end of the calibration curve.
- Results for styrene in all samples were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve.
- Results for acetone in all samples were qualified as estimated (UJ) due to elevated percent difference between the initial calibration and the second-source initial calibration verification standard.
- Results for chloroform in samples LCW-2 and LCW-4 and methylene chloride in sample LCW-4 were qualified not detected (U) at the reporting limit or reported value, whichever was greater, due to blank contamination.
- Results for acetone and 2-hexanone in all of the water samples were qualified as estimated biased low (UJ) due to low recovery in the matrix spike and/or matrix spike duplicate.
- Professional judgement was applied to qualify the result for 1,4-dichlorobenzene in sample M-21 as not-detected (U) at the reporting limit due poor mass spectral match and unacceptable secondary ion ratios.

- Results for all compounds in QC Trip Blank were qualified as estimated (J-, UJ) due to this QC sample being analyzed six days beyond holding time.

All other results were determined to be valid as reported. Details of the validation findings and conclusions based on review of the results for each quality control requirement are provided in the remaining sections of this report.

1.0 Introduction

This report presents the findings of the data validation assessment performed on the analyses of water samples collected on November 7, 2019, for the PAS Oswego semiannual well sampling event. This report details the review of samples submitted to the laboratory in the sample delivery group 1918677 and identifies quality issues which could affect the use of the sample data for decision-making purposes.

Analyses were performed in accordance with USEPA SW-846 Method 8260C. The laboratory provided a "CLP-type" data package for review.

The data validation assessment was performed in accordance with USEPA Region II Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Revision 4 (September 2014) as well as ddms' Standard Operating Procedure: Validation and Review of Volatile Organic Data; ECS-SOP-003. Where there was a discrepancy between the QC criteria in the guidelines and the QC criteria established in the analytical methodology, professional judgement was applied.

The data validation process is intended to evaluate data on a technical basis rather than a contract compliance basis for chemical analyses conducted under the referenced method. An initial assumption is that the data package is presented in accordance with the CLP requirements (or "CLP-like," as in this case). It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate and sufficient quality review prior to submission for validation.

During the validation process, laboratory data are verified against all available supporting documentation. Based on the findings of the validation, qualifier codes may have been added by the data validator. Validated results are, therefore, either qualified or unqualified. Unqualified results mean that the reported values may be used without reservation. Final validated results are annotated with the following codes as defined by the Region II Guidelines:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

These codes are recorded on the Data Summary Forms contained in Attachment A of this validation report to indicate qualifications placed on the results based on the data review.

The data user is also cautioned that the validation effort is based on the raw data printouts as provided by the laboratory. Software manipulation cannot be routinely detected during validation; unless otherwise stated in the report, these kinds of issues are outside the scope of this review.

2.0 Volatile Organic Compounds

The tables below document the elements reviewed for each parameter. Only those quality excursions resulting in qualified data are presented below. Quality control excursions having no impact to sample results are not discussed.

Review Element	Acceptable?
Preservation and Technical Holding Times	N
Calibration (Initial Calibration [IC], IC Verification, Continuing Calibration)	N
Blanks	N
GC/MS Instrument Tunes	Y
Surrogates	Y
Laboratory Control Samples (LCS)	Y
Field Duplicates*	Y
Matrix Spike (MS) and Matrix Spike Duplicate (MSD)	N
Quantitation	Y
Compound Identification	N
Documentation (Completeness and Compliance)	Y

NA = Not Applicable

Y=yes

N=no

2.1 Initial Calibration

Initial calibration target analyte percent relative standard deviations (%RSDs) were within Quality Control (QC) limits (20 %RSD) except for cyclohexane, o-xylene and styrene. In each case, a quadratic equation was used to describe the curve. Correlation coefficients were acceptable for all three compounds (>0.990). However, due to low recovery of the lowest standard(s), qualifications to sample results for cyclohexane and styrene below the second calibration standard (0.93 ug/L) and xylenes, total for the third calibration standard (2.325 ug/L) were required. The results for styrene in all samples were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve. The results for cyclohexane in samples Equipment Blank, LR-8, LCW-2, and Trip Blank were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve. The results for xylenes, total, in all samples except LCW-4, were qualified as estimated (J, UJ) due to imprecision at the lower end of the calibration curve.

2.2 Initial and Continuing Calibration Verification

Initial calibration verification standard percent recoveries were acceptable (+/- 20%) for all compounds except acetone. Acetone results in all samples were qualified as estimated (UJ) due to elevated percent difference between the initial calibration and the second-source initial calibration verification standard. Continuing calibration (CC) target analyte recoveries were acceptable for all compounds.

2.3 Blanks

Contamination was reported in the equipment blank and trip blank, as shown in the table below. Where contamination was present, but no qualifications were warranted, the information was not included in the table. When the concentration found in the sample(s) is less than ten times the maximum amount detected in the associated blank for methylene chloride and five times for chloroform, the sample concentration is qualified as not detected (U) at the RL or the reported concentration, whichever is greater. The table below summarizes the amount detected in the each blank and the samples affected.

Compound	MB (ug/L)	EB (ug/L)	TB (ug/L)	Samples Affected
chloroform	0.50 U	1.65	0.50 U	LCW-2 11/7/19 LCW-4 11/7/19
methylene chloride	2.0 U	2.30	0.16 J	LCW-4 11/7/19

2.4 Field Duplicates (FD)

Sample X-1 was collected as a field duplicate to sample OD-3. The relative percent differences between these sample results were acceptable ($\pm 30\%$) for all compounds.

2.5 Matrix Spike (MS)/MS Duplicate (MSD)

MS/MSD analyses were performed on LR-8. Percent recoveries were outside of allowable criteria (70-130%R; 30% RPD) as shown in the table below. When the recovery was below criteria, associated samples were qualified as estimated (UJ), with the potential for low bias.

Analyte	MS/MSD Recovery (%)	RPD (%)	Samples Affected	Qualifiers Applied
acetone	53/55	a	All field samples	UJ
2-hexanone	68 MS only	a	All field samples	UJ

a = acceptable

2.6 Compound Identification

Professional judgement was applied to qualify the result for 1,4-dichlorobenzene in sample M-21 as not-detected (U) at the reporting limit due to poor mass spectral match and unacceptable secondary ion ratios.

3.0 Summary

Based on a review of the data provided, the results are valid as reported, with the following exceptions:

- Results for styrene, cyclohexane, and xylenes, total, summarized in Section 2.1, were qualified as estimated (J, UJ) due to imprecision at the lower end of the calibration curve.
- Results for acetone were qualified as estimated (UJ) due to the elevated percent difference between the initial calibration and the second-source initial calibration verification standard.
- Results for methylene chloride and chloroform were qualified as not detected (U) as summarized in the table in Section 2.3, due to blank contamination.

- Results for acetone and 2-hexanone were qualified as estimated (J-, UJ) as summarized in the table in Section 2.4, due to MS/MSD excursions.
- Results for all compounds in QC Trip Blank were qualified as estimated (J-, UJ) due to the sample being analyzed six days beyond holding time.
- Result for 1,4-dichlorobenzene in sample M-21 was qualified as not-detected (U) at the reporting limit due poor mass spectral match and unacceptable secondary ion ratios.

ATTACHMENT A

**DATA SUMMARY FORMS
Laboratory Job No. 1918677
Volatiles in Water**

Site Name: PAS
Job No. 1918677

Data Summary Form for Groundwater Samples
VOCs - SW-846 8260
(ug/L)

ddms Project No. 15473131
Sampling date range: 10/23/19 - 11/7/19

Field Sample ID Lab Sample ID Dilution Factor	Equipment Blank 11/5/19 1918677-001A		LCW-2 11/7/19 1918677-005A		LCW-4 11/7/19 1918677-006A	
	1		5		20	
Parameter						
1,1,1-Trichloroethane	0.5	U	20.3		4.2	J
1,1,2,2-Tetrachloroethane	0.5	U	3.3		10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	U	1.75	J	3.2	J
1,1,2-Trichloroethane	0.5	U	2.5	U	10	U
1,1-Dichloroethane	0.5	U	26.9		58.8	
1,1-Dichloroethene	0.5	U	2.5	U	10	U
1,2,4-Trichlorobenzene	1	U	5	U	20	U
1,2-Dibromo-3-chloropropane	5	U	25	U	100	U
1,2-Dibromoethane	0.5	U	2.5	U	10	U
1,2-Dichlorobenzene	0.5	U	1.45	J	54.4	
1,2-Dichloroethane	0.5	U	2.5	U	6.2	J
1,2-Dichloropropane	0.5	U	2.5	U	10	U
1,3-Dichlorobenzene	0.5	U	2.5	U	10	U
1,4-Dichlorobenzene	0.5	U	2.5	U	6.6	J
2-Hexanone	5	U	25	UJ	100	UJ
4-Methyl-2-pentanone	5	U	25	U	100	U
Acetone	10	UJ	50	UJ	200	UJ
Benzene	0.5	U	125		294	
Bromodichloromethane	0.27	J	2.5	U	10	U
Bromoform	1	U	5	U	20	U
Bromomethane	1	U	5	U	20	U
Carbon Disulfide	0.5	U	2.2	J	10	U
Carbon Tetrachloride	0.5	U	2.5	U	10	U
Chlorobenzene	0.5	U	33.8		408	
Chloroethane	1	U	3.4	J	54.8	
Chloroform	1.65		5.05	U	10	U
Chloromethane	1	U	5	U	20	U
cis-1,2-Dichloroethene	0.5	U	43.4		299	
cis-1,3-Dichloropropene	0.5	U	2.5	U	10	U
Cyclohexane	0.5	UJ	2.5	UJ	20.8	
Cyclohexane, methyl-	0.5	U	0.6	J	2.4	J
Dibromochloromethane	0.5	U	2.5	U	10	U
Dichlorodifluoromethane	1	U	5	U	20	U
Ethylbenzene	0.5	U	2.15	J	560	
Isopropylbenzene	0.5	U	1.35	J	4.4	J
Methyl Acetate	5	U	25	U	100	U
Methyl Ethyl Ketone	10	U	50	U	200	U
Methyl tert-butyl ether	1	U	5	U	20	U
Methylene Chloride	2.3		10	U	40	U
Styrene	0.5	UJ	2.5	UJ	10	UJ
Tetrachloroethene	0.5	U	143		10	U
Toluene	0.5	U	2.5	U	144	
trans-1,2-Dichloroethene	0.5	U	2.5	U	10	U
trans-1,3-Dichloropropene	0.5	U	2.5	U	10	U
Trichloroethene	0.5	U	55		10	U
Trichlorofluoromethane	1	U	5	U	20	U
Vinyl Chloride	1	U	5.95		144	
Xylenes, Total	1	UJ	8.65	J	1110	

Site Name: PAS
Job No. 1918677

Data Summary Form for Groundwater Samples
VOCs - SW-846 8260
(ug/L)

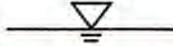
ddms Project No. 15473131
Sampling date range: 10/23/19 - 11/7/19

Field Sample ID Lab Sample ID Dilution Factor	LR-8 11/7/19 1918677-004A		M-21 11/5/19 1918677-002A		OD-3 11/7/19 1918677-003A	
	1		1		1	
	Parameter					
1,1,1-Trichloroethane	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	5	U	5	U	5	U
1,2-Dibromoethane	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	0.5	U	0.29	J	0.29	J
1,2-Dichloroethane	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	0.5	U	0.5	U	0.63	
2-Hexanone	5	UJ	5	UJ	5	UJ
4-Methyl-2-pentanone	5	U	5	U	5	U
Acetone	10	UJ	10	UJ	10	UJ
Benzene	0.5	U	0.5	U	0.29	J
Bromodichloromethane	0.5	U	0.5	U	0.5	U
Bromoform	1	U	1	U	1	U
Bromomethane	1	U	1	U	1	U
Carbon Disulfide	0.5	U	0.5	U	0.5	U
Carbon Tetrachloride	0.5	U	0.5	U	0.5	U
Chlorobenzene	0.5	U	3.25		10.5	
Chloroethane	1	U	2.5		4.61	
Chloroform	0.5	U	0.5	U	0.5	U
Chloromethane	1	U	1	U	1	U
cis-1,2-Dichloroethene	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	0.5	U	0.5	U	0.5	U
Cyclohexane	0.5	UJ	1.08		1.04	
Cyclohexane, methyl-	0.5	U	0.5	U	0.5	U
Dibromochloromethane	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	1	U	1	U	1	U
Ethylbenzene	0.5	U	0.5	U	0.5	U
Isopropylbenzene	0.5	U	0.2	J	0.16	J
Methyl Acetate	5	U	5	U	5	U
Methyl Ethyl Ketone	10	U	10	U	10	U
Methyl tert-butyl ether	1	U	1	U	1	U
Methylene Chloride	2	U	2	U	2	U
Styrene	0.5	UJ	0.5	UJ	0.5	UJ
Tetrachloroethene	0.5	U	0.5	U	0.5	U
Toluene	0.5	U	0.12	J	0.13	J
trans-1,2-Dichloroethene	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	0.5	U	0.5	U	0.5	U
Trichloroethene	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	1	U	1	U	1	U
Vinyl Chloride	1	U	1	U	1	U
Xylenes, Total	1	UJ	1	UJ	1	UJ

Field Sample ID Lab Sample ID Dilution Factor	QC Trip Blank 10/23/19 1918677-008A		X-1 11/7/19 1918677-007A	
	1		1	
	Parameter		Parameter	
1,1,1-Trichloroethane	0.5	UJ	0.5	U
1,1,2,2-Tetrachloroethane	0.5	UJ	0.5	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	UJ	0.5	U
1,1,2-Trichloroethane	0.5	UJ	0.5	U
1,1-Dichloroethane	0.5	UJ	0.5	U
1,1-Dichloroethene	0.5	UJ	0.5	U
1,2,4-Trichlorobenzene	1	UJ	1	U
1,2-Dibromo-3-chloropropane	5	UJ	5	U
1,2-Dibromoethane	0.5	UJ	0.5	U
1,2-Dichlorobenzene	0.5	UJ	0.31	J
1,2-Dichloroethane	0.5	UJ	0.5	U
1,2-Dichloropropane	0.5	UJ	0.5	U
1,3-Dichlorobenzene	0.5	UJ	0.5	U
1,4-Dichlorobenzene	0.5	UJ	0.71	
2-Hexanone	5	UJ	5	UJ
4-Methyl-2-pentanone	5	UJ	5	U
Acetone	10	UJ	10	UJ
Benzene	0.5	UJ	0.3	J
Bromodichloromethane	0.5	UJ	0.5	U
Bromoform	1	UJ	1	U
Bromomethane	1	UJ	1	U
Carbon Disulfide	0.33	J	0.5	U
Carbon Tetrachloride	0.5	UJ	0.5	U
Chlorobenzene	0.5	UJ	11.3	
Chloroethane	1	UJ	4.85	
Chloroform	0.5	UJ	0.5	U
Chloromethane	1	UJ	1	U
cis-1,2-Dichloroethene	0.5	UJ	0.5	U
cis-1,3-Dichloropropene	0.5	UJ	0.5	U
Cyclohexane	0.5	UJ	1	
Cyclohexane, methyl-	0.5	UJ	0.5	U
Dibromochloromethane	0.5	UJ	0.5	U
Dichlorodifluoromethane	1	UJ	1	U
Ethylbenzene	0.5	UJ	0.5	U
Isopropylbenzene	0.5	UJ	0.15	J
Methyl Acetate	5	UJ	5	U
Methyl Ethyl Ketone	10	UJ	10	U
Methyl tert-butyl ether	1	UJ	1	U
Methylene Chloride	0.16	J	2	U
Styrene	0.5	UJ	0.5	UJ
Tetrachloroethene	0.5	UJ	0.5	U
Toluene	0.5	UJ	0.15	J
trans-1,2-Dichloroethene	0.5	UJ	0.5	U
trans-1,3-Dichloropropene	0.5	UJ	0.5	U
Trichloroethene	0.5	UJ	0.5	U
Trichlorofluoromethane	1	UJ	1	U
Vinyl Chloride	1	UJ	1	U
Xylenes, Total	1	UJ	1	UJ

B – 5

**QUARTERLY POTW
DISCHARGE REPORTS**



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865)691-5052
(865)691-9835 FAX

January 10, 2019

Mr. Tim O'Brien
Department of Municipal Utilities
35 Bradley Street
Auburn, New York 13021

Re: 4th Quarter PAS Oswego Monitoring Report 2019

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during December 2017– December 2019. This has been due to the EPA allowance of an alternate disposal method.

- **Cumulative gallons removed for discharge in Auburn 4th Qtr. 2019 - 0**
- **Cumulative gallons removed for discharge in Auburn 2019 - 0**

Since no wastewater was shipped or discharged to Auburn during the 4th quarter of 2019, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

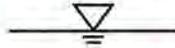
Please contact me at (865) 691-5052, if you have any questions.

Sincerely,
de maximis, inc.

Clay McClarnon

CMC/dsr

cc: PAS Management Committee



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865)691-5052
(865)691-9835 FAX

January 8, 2019

Mr. Timothy L. O'Brien
Industrial Pretreatment Coordinator
35 Bradley Street
Auburn, NY 13021

**Re: Industrial Pretreatment Program
Zero Discharge Certification Statement:**

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to December 2019, I certify that for Pollution Abatement Services located in Oswego New York:

1. There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.
2. No discharge of process wastewater has occurred since December 7, 2017.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Clay McClarnon
Name

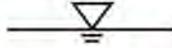
Project Coordinator
Title

Signature

January 8, 2019
Date

(865) 691-5052
Phone





de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865)691-5052
(865)691-9835 FAX

Via electronic mail

January 10, 2020

Mr. John McGrath
Chief Operator
Westside Wastewater Treatment Plant
First Avenue & West Schuyler Streets
Oswego, New York 13126
Labmanager@oswegony.org

**Re: Quarterly Discharge Report – 4th Quarter 2019
Pollution Abatement Services Site – Oswego, New York
City of Oswego Wastewater Discharge Permit 6-2019-20**

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from October 2019 through December 2019.

The PAS Site discharged a total of 40,000 gallons of leachate to the Oswego sewer system during the 4th quarter of 2019.

Discharge to City of Oswego October 2019 – December 2019 40,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely,
de maximis, inc.


Clay McClarnon

Attachments:

cc: Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant
Robert Johnson – City Engineer
PAS Oswego Site Management Committee

TABLE 1 - PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2019)
LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY
(Oswego SIU Wastewater Discharge Permit No.6-2019-20)

Discharge Quarter		1Q 2019		2Q 2019		3Q 2019		4Q 2019	
	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	
	1/8/19	10,500	4/2/19	10,500	7/3/19	20,000	10/8/19	20,000	
	46/6.8		44/6.8		57/6.8		54/6.8		
	2/11/19	10,500	5/8/19	20,000	8/6/19	20,000	11/6/19	10,000	
	42/6.8		46/6.8		55/6.8		54/6.8		
	3/5/19	10,500	6/4/19	20,000	9/11/19	20,000	12/3/19	10,000	
	42/6.8		50/6.8		60/6.8		52/6.8		
Total Discharged				31,500		50,500		60,000	40,000
Date Sampled*	Permit Limits		4/2/2019				11/6/2019		
Analytes	mg/L		mg/L				mg/L		
Antimony	0.107		ND <0.0025				ND <0.010		
Arsenic	0.358		0.018				0.019		
Beryllium	0.107		ND <0.0010				ND <0.010		
Cadmium	0.43		ND <0.0004				ND <0.010		
Chromium (total)	0.67		ND 0.0072				ND 0.010		
Copper	0.43		0.0214				0.015		
Cyanide	0.69		.0057J				0.23		
Lead	0.19		0.0015				ND <0.010		
Mercury	0.0002		ND <0.0000025				ND <0.0002		
Nickel	0.65		0.318				0.33		
Selenium	0.282		ND <0.0025				ND <0.010		
Silver	0.65		ND <0.0025				ND <0.010		
Thallium	0.073		ND <0.00050				ND <0.020		
Zinc	1		ND <0.025				ND <0.020		
VOC**									
1,1,1 TCA	NA						0.00625		
MeCL	NA						ND <0.0005		
PCE	NA						0.029		
Toluene	NA						0.0674		
TCE	NA						0.0125		
SVOC**	NA						NA		
BOD 5	200		14				11		
TSS	400		37				39		
oil & grease	100								
Phenolics	0.375		ND <0.034						
pH	>5 & <10		6.7				6.8		

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

Analyte values in bold exceed limit

ATTACHMENT I



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 10-8-19

Time: 7:50

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 47°

Table with columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes rows for LCW-1 to LCW-4 and a Total row.

Table with columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes a section for Semi-Annual Leachate Discharge Sampling with columns: Date, Sample Location, Sample Volume, Sample Time, pH, Temperature.



O'BRIEN & GERE

PAS Site
Oswego, New York

Leachate Discharge Form

Date: 11-6-19

Time: 7:30

Field Technician MARTIN KOENNECKE

Weather Conditions P. Sunny 40°

Well Pump	Pre-Discharge Well Pumping				
	Pump Start Time	Pump Stop Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)
LCW-1	7:40	8:55	START-10"	134 GPM	
LCW-2	7:40	8:55	STOP 43"		
LCW-3	7:40	8:00			
LCW-4	7:40	8:55			
Total					10,065

Discharge #	Leachate Discharge Pumping (Monthly)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:00						
Discharge #1	9:30	11:30	6.80	54°	1295165	1305165	10,000
Discharge #2							
Total							10,000

	Leachate Discharge Sampling (Semi-Annually)					
	Date	Sample Location	Composite Sample Volume	Sample Time	pH	Temperature
Sample #1	11-6-19	Sample Port	2gal	10:30	6.80	54°
Sample #2 (if required)						



O'BRIEN & GERE

PAS Site
Oswego, New York

Leachate Discharge Form

Date: 12-3-19

Time: 7:30

Field Technician MARTIN KOENNECKE

Weather Conditions P-SUNNY 25°

Well Pump	<i>Pre-Discharge Well Pumping</i>				
	Pump Start Time	Pump Stop Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)
LCW-1	8:15	9:40	START - 10"	112 GPM	10,065
LCW-2	8:15	9:40	STOP - 43"		
LCW-3	8:15	8:30			
LCW-4	8:15	9:40			
Total					10,065

Discharge #	<i>Leachate Discharge Pumping (Monthly)</i>						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:50	11:50	6.8	52°	1305165	1315165	10,000
Discharge #2							
Total							10,000

	<i>Leachate Discharge Sampling (Semi-Annually)</i>					
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature
Sample #1						
Sample #2 (if required)						

ATTACHMENT II



Life Science Laboratories, Inc.

5854 Butternut Drive
East Syracuse, NY 13057

(315) 445-1900

REVISED
1/3/20

Friday, January 03, 2020

Mark Byrne
O'Brien & Gere Operations, LLC.
333 W. Washington St.
PO Box 4873
Liverpool, NY 13221-4873

TEL: 315-437-6100

Project: PAS OSWEGO, SEMIANNUAL PERMIT DISCHARGE

RE: Analytical Results

Order No.: 1918638 *a*

Dear Mark Byrne:

Life Science Laboratories, Inc. received 3 sample(s) on 11/6/2019 for the analyses presented in the following report. Sample results relate only to the samples as received by the laboratory.

Very truly yours,
Life Science Laboratories, Inc.

A handwritten signature in black ink, appearing to read "David J Prichard", with a long horizontal flourish extending to the right.

David J Prichard
Project Manager



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER

Lab ID: 1918638-001A
Client Sample ID: Tank Effluent Leachate,
 11/6/19
Collection Date: 11/06/19 10:30
Date Received: 11/06/19 15:31
PrepDate:
BatchNo: R33525
FileID: 1-SAMP-

Inst. ID: Fisher balance XA **Sample Size:** NA
ColumnID: **%Moisture:**
Revision: 11/13/19 8:50 **TestCode** TSS2540D
Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
RESIDUE-NON-FILTERABLE (TSS)				SM 2540 D-2011		
Residue-non-filterable (TSS)	39		5.0	mg/L	1	11/08/19

Qualifiers:			
*	Value may exceed the Acceptable Level	B	Analyte detected in the associated Method Blank
B	Value exceeds the instrument calibration range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
P	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
 Project: PAS Oswego, Semiannual Permit Discharge
 W Order: 1918638
 Matrix: WATER

Lab ID: 1918638-001B
 Client Sample ID: Tank Effluent Leachate,
 11/6/19
 Collection Date: 11/06/19 10:30
 Date Received: 11/06/19 15:31
 PrepDate: 11/08/19 0:00
 BatchNo: R33549
 FileID: 1-SAMP-T0714.D

Inst. ID: MS06 40 Sample Size: NA
 ColumnID: DB-5MS %Moisture:
 Revision: 11/20/19 10:42 TestCode 625W
 Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
SEMI-VOLATILE ORGANICS COMPOUNDS BY GC/MS				EPA 625		
Phenol	ND		10	µg/L	1	11/08/19 13:39
Surr: 2,4,6-Tribromophenol	70		46-149	%REC	1	11/08/19 13:39
Surr: 2-Fluorophenol	36		26-130	%REC	1	11/08/19 13:39
Surr: Phenol-d5	22		21-134	%REC	1	11/08/19 13:39

- Qualifiers:
- * Value may exceed the Acceptable Level
 - E Value exceeds the instrument calibration range
 - J Analyte detected below the PQL
 - P Prim./Conf. column %D or RPD exceeds limit
 - B Analyte detected in the associated Method Blank
 - H Holding times for preparation or analysis exceeded
 - ND Not Detected at the Practical Quantitation Limit (PQL)
 - S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER

Lab ID: 1918638-001C
Client Sample ID: Tank Effluent Leachate,
11/6/19

Collection Date: 11/06/19 10:30
Date Received: 11/06/19 15:31
PrepDate: 11/17/19 0:00
BatchNo: 26507/R33546
FileID: 1-SAMP-

Inst. ID: FIMS 100 **Sample Size:** 40 mL
ColumnID: **%Moisture:**
Revision: 11/19/19 17:13 **TestCode** HG245W
Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
MERCURY				EPA 245.1, Rev. 3.0 (1994)		(EPA 245.1, REV. 3.0 (1994))
Mercury	ND		0.00020	mg/L	1	11/18/19 15:03

Qualifiers:

- * Value may exceed the Acceptable Level
- B Analyte detected in the associated Method Blank
- E Value exceeds the instrument calibration range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below the PQL
- ND Not Detected at the Practical Quantitation Limit (PQL)
- P Prim./Conf. column %D or RPD exceeds limit
- S Spike Recovery outside accepted recovery limits

REVISED
1/3/20



Life Science Laboratories, Inc.

5854 Butternut Drive
East Syracuse, NY 13057 (315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER
Inst. ID: ICAP 61E **Sample Size:** 50 mL
ColumnID: **%Moisture:**
Revision: 01/03/20 13:47 **TestCode** 200.7_NPW
Col Type:

Lab ID: 1918638-001C
Client Sample ID: Tank Effluent Leachate,
11/6/19
Collection Date: 11/06/19 10:30
Date Received: 11/06/19 15:31
PrepDate: 11/11/19 0:00
BatchNo: 26494/R33529
FileID: 1-SAMP-330337

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
TOTAL METALS BY ICP				EPA		(EPA 200.2)
				200.7, Rev. 4.4 (1994)		
Antimony	ND		0.010	mg/L	1	11/12/19 18:41
Arsenic	0.019		0.010	mg/L	1	11/12/19 18:41
Barium	0.46		0.10	mg/L	1	11/12/19 18:41
Beryllium	ND		0.010	mg/L	1	11/12/19 18:41
Cadmium	ND		0.010	mg/L	1	11/12/19 18:41
Chromium	ND		0.010	mg/L	1	11/12/19 18:41
Copper	0.015		0.010	mg/L	1	11/12/19 18:41
Iron	17		0.050	mg/L	1	11/12/19 18:41
Lead	ND		0.010	mg/L	1	11/12/19 18:41
Nickel	0.33		0.010	mg/L	1	11/12/19 18:41
Selenium	ND		0.010	mg/L	1	11/12/19 18:41
Silver	ND		0.010	mg/L	1	11/12/19 18:41
Thallium	ND		0.020	mg/L	1	11/12/19 18:41
Zinc	ND		0.020	mg/L	1	11/12/19 18:41

Qualifiers:

* Value may exceed the Acceptable Level	B Analyte detected in the associated Method Blank
E Value exceeds the instrument calibration range	H Holding times for preparation or analysis exceeded
J Analyte detected below the PQL	ND Not Detected at the Practical Quantitation Limit (PQL)
P Prim./Conf. column %D or RPD exceeds limit	S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER

Inst. ID: AA3 **Sample Size:** 50 mL
ColumnID: **%Moisture:**
Revision: 11/26/19 6:17 **TestCode** CN335.4W
Col Type:

Lab ID: 1918638-001D
Client Sample ID: Tank Effluent Leachate,
11/6/19
Collection Date: 11/06/19 10:30
Date Received: 11/06/19 15:31
PrepDate: 11/19/19 0:00
BatchNo: 26491/R33564
FileID: 1-SAMP-

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
CYANIDE, TOTAL				EPA 335.4		(EPA 335.4)
Cyanide, Total	0.23		0.010	mg/L	1	11/22/19

Qualifiers: * Value may exceed the Acceptable Level
E Value exceeds the instrument calibration range
J Analyte detected below the PQL
P Prim./Conf. column %D or RPD exceeds limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Practical Quantitation Limit (PQL)
S Spike Recovery outside accepted recovery limits

Print Date: 12/10/19 10:52

913322

Project Supervisor: David J Prichard

Page 5 of 13



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER

Lab ID: 1918638-001E
Client Sample ID: Tank Effluent Leachate,
11/6/19

Collection Date: 11/06/19 10:30
Date Received: 11/06/19 15:31
PrepDate: 11/26/19 0:00
BatchNo: 26553/R33577
FileID: 1-SAMP-

Inst. ID: HACH4000 **Sample Size:** 50 mL
ColumnID: **%Moisture:**
Revision: 12/03/19 8:51 **TestCode** TP365.1
Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
PHOSPHORUS, TOTAL (AS P)				EPA 365.1		(EPA 365.1)
Phosphorus, Total (As P)	0.21		0.050	mg/L	1	12/02/19

NOTES:

This analysis was performed by Method EPA 365.3

Qualifiers:		
*	Value may exceed the Acceptable Level	B Analyte detected in the associated Method Blank
E	Value exceeds the instrument calibration range	H Holding times for preparation or analysis exceeded
J	Analyte detected below the PQL	ND Not Detected at the Practical Quantitation Limit (PQL)
P	Prim./Conf. column %D or RPD exceeds limit	S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

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(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.	Lab ID: 1918638-001E
Project: PAS Oswego, Semiannual Permit Discharge	Client Sample ID: Tank Effluent Leachate, 11/6/19
W Order: 1918638	Collection Date: 11/06/19 10:30
Matrix: WATER	Date Received: 11/06/19 15:31
Inst. ID: AA3	Sample Size: 1 mL
ColumnID:	%Moisture:
Revision: 11/20/19 6:09	TestCode: TKN351.2
Col Type:	BatchNo: 26512/R33547
	FileID: 1-SAMP-

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
KJELDAHL NITROGEN - TOTAL (AS N)				EPA 351.2		(EPA 351.2)
Kjeldahl Nitrogen - Total (as N)	27		2.0	mg/L	1	11/19/19

NOTES:

As per NELAC regulation disclosure of the following condition is required; The method blank result associated with this analysis was greater than the established limit.

Qualifiers:	* Value may exceed the Acceptable Level	B Analyte detected in the associated Method Blank
	E Value exceeds the instrument calibration range	H Holding times for preparation or analysis exceeded
	J Analyte detected below the PQL	ND Not Detected at the Practical Quantitation Limit (PQL)
	P Prim./Conf. column %) or RPD exceeds limit	S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
 Project: PAS Oswego, Semiannual Permit Discharge
 W Order: 1918638
 Matrix: WATER

Lab ID: 1918638-001F
 Client Sample ID: Tank Effluent Leachate,
 11/6/19

Collection Date: 11/06/19 10:30
 Date Received: 11/06/19 15:31

Inst. ID: MSN 76 Sample Size: NA
 ColumnID: Rtx-VMS %Moisture:
 Revision: 11/13/19 13:33 TestCode 624W

PrepDate:
 BatchNo: R33532
 FileID: 1-SAMP-n0897.D

Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS				EPA 624		
1,1,1-Trichloroethane	6.25		5.00	µg/L	5	11/12/19 4:36
Methylene chloride	ND		5.00	µg/L	5	11/12/19 4:36
Tetrachloroethene	29.0		5.00	µg/L	5	11/12/19 4:36
Toluene	67.4		5.00	µg/L	5	11/12/19 4:36
Trichloroethene	12.5		5.00	µg/L	5	11/12/19 4:36
Surr: 1,2-Dichloroethane-d4	109		75-130	%REC	5	11/12/19 4:36
Surr: 4-Bromofluorobenzene	100		75-125	%REC	5	11/12/19 4:36
Surr: Toluene-d8	78		75-125	%REC	5	11/12/19 4:36

Qualifiers:

- * Value may exceed the Acceptable Level
- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Practical Quantitation Limit (PQL)
- S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER

Lab ID: 1918638-001G
Client Sample ID: Tank Effluent Leachate,
 11/6/19

Collection Date: 11/06/19 10:30
Date Received: 11/06/19 15:31
PrepDate: 11/18/19 9:00
BatchNo: 26511/R33543
FileID: 1-SAMP-

Inst. ID: Fisher balance XA **Sample Size:** 1000 mL
ColumnID: **%Moisture:**
Revision: 11/19/19 14:27 **TestCode** OG1664A
Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
OIL AND GREASE (LLE)				EPA 1664A		(EPA 1664A)
Oil and Grease	ND		5.00	mg/L	1	11/19/19

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
 C Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
 J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
 P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER

Inst. ID: DO Meter **Sample Size:** NA
ColumnID: **%Moisture:**
Revision: 11/15/19 14:32 **TestCode** BODSM5210B
Col Type:

Lab ID: 1918638-001H
Client Sample ID: Tank Effluent Leachate, 11/6/19

Collection Date: 11/06/19 10:30
Date Received: 11/06/19 15:31
PrepDate:
BatchNo: R33538
FileID: 1-SAMP-

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
BIOCHEMICAL OXYGEN DEMAND (BOD5)				SM 5210B-01,-11		
Biochemical oxygen demand (BOD5)	11		4.0	mg/L	1	11/08/19 10:23

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
E Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
 Project: PAS Oswego, Semiannual Permit Discharge
 W Order: 1918638
 Matrix: WATER

Lab ID: 1918638-001H
 Client Sample ID: Tank Effluent Leachate,
 11/6/19

Collection Date: 11/06/19 10:30
 Date Received: 11/06/19 15:31

Inst. ID: GENESYS 20 Sample Size: NA
 ColumnID: %Moisture:
 Revision: 11/12/19 15:42 TestCode CRHEX7196W
 Col Type:

PrepDate:
 BatchNo: R33528
 FileID: 1-SAMP-

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
CHROMIUM, HEXAVALENT	ND		0.010	mg/L	1	11/07/19 8:48
Chromium, Hexavalent						

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
 E Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
 J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
 P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
W Order: 1918638
Matrix: WATER Q

Lab ID: 1918638-002A
Client Sample ID: Trip Blank

Collection Date: 11/06/19 0:00
Date Received: 11/06/19 15:31

Inst. ID: MSN 76 **Sample Size:** NA
ColumnID: Rtx-VMS **%Moisture:**
Revision: 11/13/19 13:33 **TestCode:** 624W

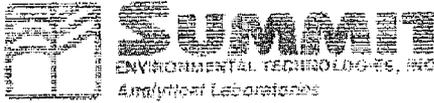
PrepDate:
BatchNo: R33532
FileID: I-SAMP-n0898.D

Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS			EPA 624			
1,1,1-Trichloroethane	ND		1.00	µg/L	1	11/12/19 5:10
Methylene chloride	ND		1.00	µg/L	1	11/12/19 5:10
Tetrachloroethene	ND		1.00	µg/L	1	11/12/19 5:10
Toluene	ND		1.00	µg/L	1	11/12/19 5:10
Trichloroethene				µg/L	1	11/12/19 5:10
Surr: 1,2-Dichloroethane-d4	111		75-130	%REC	1	11/12/19 5:10
Surr: 4-Bromofluorobenzene	106		75-125	%REC	1	11/12/19 5:10
Surr: Toluene-d8	104		75-125	%REC	1	11/12/19 5:10

Qualifiers:

- * Value may exceed the Acceptable Level
- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Practical Quantitation Limit (PQL)
- S Spike Recovery outside accepted recovery limits



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

November 19, 2019

Greg Smith
Life Science Laboratories, Inc.
5854 Butternut Dr.
E. Syracuse, NY 13057
TEL: (315) 445-1105
FAX: (315) 445-1301

RE: 1918638

Order No.: 1911146

Dear Greg Smith:

Summit Environmental Technologies, Inc. received 2 sample(s) on 11/13/2019 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

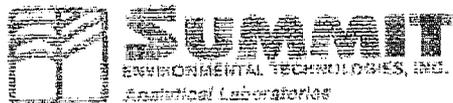
Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Jennifer Woolf
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 07256CA, Colorado, Connecticut P11-0108, Delaware, Florida NELAC E87688, Georgia E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Louisiana 04061, Maryland 339, Minnesota 409711, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 9940, Oregon OH200001, Pennsylvania 010, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-11-5, Utah OH1009232011-1, Virginia VELAP 9456, Washington C891



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Case Narrative

WO#: 19111146
Date: 11/19/2019

CLIENT: Life Science Laboratories, Inc.
Project: 1918638

WorkOrder Narrative:

19111146: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original



Summit Environmental Technologies, Inc.
3310 Win S.
Cuyahoga Falls, Ohio 4422
TEL: (330) 253-8211 FAX: (330) 253-448
Website: <http://www.setek.co>

Qualifiers and Acronyms

WO#: 19111146
Date: 11/19/2019

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

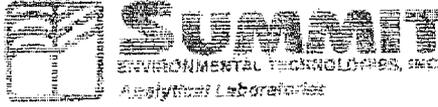
U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
II	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

Original



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Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 19111146
19-Nov-19

CLIENT: Life Science Laboratories, Inc.
Project: 1918638

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
19111146-001	1918638-0011		11/6/2019	11/13/2019 10:10:00 AM	Non-Potable Water
19111146-002	1918638-003A		11/6/2019	11/13/2019 10:10:00 AM	Non-Potable Water



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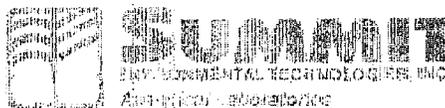
DATES REPORT

WO#: 19111146
19-Nov-19

Client: Life Science Laboratories, Inc.
Project: 1918638

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
19111146-001A	1918638-001I	11/6/2019	Non-Potable Water	Low-Level Mercury (EPA 1631)			11/18/2019 2:05:38 PM
19111146-002A	1918638-003A			Low-Level Mercury (EPA 1631)			11/18/2019 2:09:47 PM

Original



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 Website: <http://www.settek.com>

WO#: 1911146
 Date Reported: 11/19/2019
 Company: Life Science Laboratories, Inc.
 Address: 5854 Butternut Dr.
 E. Syracuse NY 13057
 Received: 11/13/2019
 Project#: 1918638

Client ID#	Lab ID#	Collected	Analyte	Result	Units	Qual	Matrix	Method	DF	MDL	PQL	Run	Analyst
1918638-001I	001	11/6/2019	Mercury	1.40	ng/L	J	Non-Potable Water	EPA 1631 E	5	1.24	2.50	11/18/2019	AJT
1918638-003A	002	11/6/2019	Mercury	1.37	ng/L		Non-Potable Water	EPA 1631 E	1	0.247	0.500	11/18/2019	AJT



SUMMIT
 ENVIRONMENTAL TECHNOLOGIES, INC.
 Analytical Laboratories

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**Accreditation Program
 Analytes Report**

WO#: 19111146
 19-Nov-19

Client: Life Science Laboratories, Inc.
 Project: 1918638

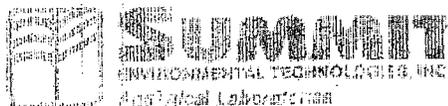
State: NY
 Program Name: DW_WW_SCM_NE

Sample ID	Matrix	Test Name	Analyte	Status
19111146-001A	Non-Potable Water	Low-Level Mercury (EPA 1631)	Mercury	A
19111146-002A	Non-Potable Water	Low-Level Mercury (EPA 1631)	Mercury	A

Key

DW_WW_SCM_NE A Accredited

Original #1



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QC SUMMARY REPORT

WO#: 19111146

19-Nov-19

Client: Life Science Laboratories, Inc.
 Project: 1918638

BatchID: R105965

Sample ID: LCS	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: LCSW	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476643						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.4	0.500	50.00	0	101	77	123				

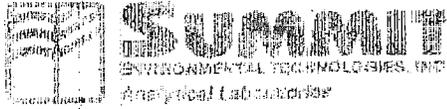
Sample ID: mblank 1	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: PBW	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476644						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

Sample ID: ric	SampType: RLC	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: BatchQC	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476645						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.595	0.500	0.5000	0	119	50	150				

Sample ID: mblank 2	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: PBW	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476652						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

Qualifiers: B Analyte detected in the associated Method Blank
 J Analyte detected below quantitation limits
 ND Not Detected
 R RPD outside accepted recovery limits
 E Value above quantitation range
 M Manual integration used to determine area response
 P Second column confirmation exceeds
 RL Reporting Detection Limit
 H Holding times for preparation or anal
 MC Value is below Minimum Compound
 PL Permit Limit
 S Spike Recovery outside accepted reco

Original



Summit Environmental Technologies, Inc.
 3310 Win St.
 Cuyahoga Falls, Ohio 44223
 TEL: (330) 253-8211 FAX: (330) 253-4489
 Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 19111146
 19-Nov-19

Client: Life Science Laboratories, Inc.
 Project: 1918638

BatchID: R105965

Sample ID: m-blank 2	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965					
Client ID: PBW	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476652						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

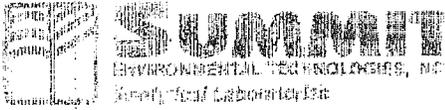
Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: LCSW	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476657						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.5	0.500	50.00	0	101	77	123				

Sample ID: LFB	SampType: LCSD	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: LCSS02	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476658						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	49.8	0.500	50.00	0	99.6	77	123	50.45	1.35	24	

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: LCSW	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476670						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	45.0	0.500	50.00	0	90.0	77	123				

- Qualifiers:**
- B Analyte detected in the associated Method Blank
 - J Analyte detected below quantitation limits
 - ND Not Detected
 - R RPD outside accepted recovery limits
 - E Value above quantitation range
 - M Manual Integration used to determine area response
 - P Second column confirmation exceeds
 - RI Reporting Detection Limit
 - H Holding times for preparation or analysis
 - MC Value is below Minimum Compound
 - PL Permit Limit
 - S Spike Recovery outside accepted reco

Original



Summit Environmental Technologies, Inc.
 3310 W in St.
 Cuyahoga Falls, Ohio 44225
 TEL: (330) 253-8211 FAX: (330) 253-4489
 Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 19111146
 19-Nov-19

Client: Life Science Laboratories, Inc.
Project: 1918638

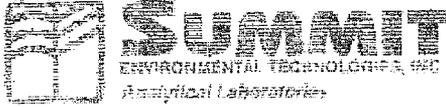
BatchID: R105965

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: LCSS02	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476671						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	46.0	0.500	50.00	0	92.0	77	123	44.98	2.21	24	

Sample ID: mblank 3	SampType: MELK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 105965						
Client ID: PBW	Batch ID: R105965	TestNo: E1631		Analysis Date: 11/18/2019	SeqNo: 2476672						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.248	0.500									J

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range	II Holding times for preparation or analy
	J Analyte detected below quantitation limits	M Manual integration used to determine area response	MC Value is below Minimum Compound
	ND Not Detected	P Second column confirmation exceeds	PL Permit Limit
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted reco

Original



Summit Environmental Technologies, Inc.
 3310 Wm St.
 Cuyahoga Falls, Ohio 44223
 TEL: (330) 253-8211 FAX: (330) 253-4489
 Website: <http://www.settek.com>

Sample Log-In Check List

Client Name: **LIF-NY-13057** Work Order Number: **19111146** RcptNo: **1**

Logged by:	Jessica E. Westfall	11/13/2019 10:10:00 AM	<i>Jessica Westfall</i>
Completed By:	Jacqueline Rasile	11/15/2019 4:37:44 PM	<i>Jacqueline Rasile</i>
Reviewed By:	Jennifer Woolf	11/15/2019 5:22:58 PM	<i>Jennifer Woolf</i>

Chain of Custody

- Is Chain of Custody complete? Yes No Not Present
- How was the sample delivered? UPS

Log In

- Coolers are present? Yes No NA
- Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
- Was an attempt made to cool the samples? Yes No NA
- Were all samples received at a temperature of >0° C to 6.0°C? Yes No NA
- Sample(s) in proper container(s)? Yes No
- Sufficient sample volume for indicated test(s)? Yes No
- Are samples (except VOA and ONG) properly preserved? Yes No
- Was preservative added to bottles? Yes No NA
- Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
- Were any sample containers received broken? Yes No
- Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
- Are matrices correctly identified on Chain of Custody? Yes No
- Is it clear what analyses were requested? Yes No
- Were all holding times able to be met? (If no, notify customer for authorization.) Yes No

Special Handling (if applicable)

- Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Not Present			

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: OGINA PAS
 Work Order Number: 1918638

Date and Time Received: 11/6/2019 3:31:00 PM
 Received by: rsd

Checklist completed by: JS | 11-6-19
Initials Date

Reviewed by: DP | 11/9/19
Initials Date

Delivery Method: Hand Delivered

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Applicable
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No
- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No Not Applicable

pH	Preservative	pH Acceptable		
>12	NaOH	Yes <input checked="" type="checkbox"/>	N <input type="checkbox"/>	NA <input type="checkbox"/>
<2	HNO3	Yes <input checked="" type="checkbox"/>	N <input type="checkbox"/>	NA <input type="checkbox"/>
<2	HSO4	Yes <input checked="" type="checkbox"/>	N <input type="checkbox"/>	NA <input type="checkbox"/>
<2	1:1 HCL	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
5-9	Pest/PCBs (608/8081)	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Sample ID

Volume of Preservative added in Lab.

Comments:

Corrective Action:

B – 6

INSTITUTIONAL CONTROL CERTIFICATION

PAS OSWEGO SUPERFUND SITE

**Institutional Controls Implementation Plan
Annual Certification
November 5, 2019**

REQUIREMENT: The Institutional Control Implementation Plan (ICIP) for the PAS Oswego Superfund Site (Site) as approved by USEPA includes requirements for the period following the execution and recording of the Easement, which were documented in the approved Remedial Action Completion Report. It states that following implementation of institutional controls on the Industrial Precision Products Property, the Site will be inspected on an annual basis to determine whether any intrusive activities have occurred. In addition, building and property records will be reviewed to ascertain whether or not any filings have been made for such activities. The ICIP provides for an annual report summarizing the findings of the inspection and record review to be prepared, along with a certification confirming that operation and maintenance activities continue, and that this annual report would be included with the OM&M progress report to be submitted to EPA in July of each year.

CERTIFICATION: The PAS Oswego annual Site and records inspection was performed by *de maximis, inc.* on November 5, 2019. During this visit an inspection was made of the PAS Oswego Site during a monthly operation leachate removal event. This Site inspection was scheduled to allow a visit with a representative of Industrial Precision Products to determine if any intrusive activities may have occurred on their property since the Remedial Action Completion Report was approved in August 2006. *de maximis* also contacted representatives of the City and County to confirm that no potential filings were made to install wells on the Industrial Precision Property. Based on results of the Site and records inspection, a determination has been made that no intrusive activities have occurred or are planned on the Industrial Precision Control Property and that the operation and maintenance activities at the PAS Oswego Site are continuing in accordance with the requirements of Consent Decree.

B – 7

**EMERGING
CONTAMINANT REPORT**



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865)691-5052
(865)691-9835 FAX

March 4, 2020

**Emerging Contaminant Results
Pollution Abatement Services, Site No. 738001
Oswego, NY**

Dear Mr. Long:

de maximis inc., project coordinator for the Parties to the 1998 Consent Decree 98CV0112-NPMGJD for the Pollution Abatement Services (PAS) Site in Oswego New York, is providing this Summary Report for the sampling and analysis of per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane performed in November 2019 at the PAS Site.

Scope of Work

This letter provides the data for the sampling and analysis program for per- and polyfluoroalkyl substance (PFAS) and 1,4-dioxane performed at the PAS Site during the November 2019 semi-annual sampling event. The groundwater samples were collected from three existing monitoring wells: LR-2, SWW-5, and M-21 in accordance with the approved sampling plan. Well LR-2 is located upgradient of the Site, SWW-5 is located within the PAS containment system and M-21 is located downgradient of the Site as shown on **Figure 1**.

Construction information for these wells is as follows:

Well ID	Well Diameter	Screened Interval (Ft Below grade)
LR-2	2 inch	45.8 - 55.8
SWW-5	3 inch	7 - 17
M-21	3 inch	11.5 - 21.5



Groundwater Sampling

The groundwater samples were collected while wearing appropriate personal protective equipment (PPE). PFAS constituents were sampled first followed by sampling for 1,4-dioxane. Additionally, special PFAS-related precautions were taken in accordance with the approved Sampling and Analysis Plan (SAP) during the sampling to minimize potential sample contamination.

Specifically, groundwater samples were collected using a low-flow sampling method at flow rates not less than 100 milliliters per minute (ml/min) and no greater than 500 ml/min. During purging, depth to water was measured every 3 to 5 minutes. Water quality parameters were measured and included temperature, conductivity, pH, oxidation-reduction potential (ORP), and, dissolved oxygen (DO). Turbidity readings were also collected. These results were recorded on the corresponding field forms presented in Attachment I. The water quality measurements were taken to achieve the following:

- pH within ± 0.1 Standard Units (SU)
- Specific conductivity within $\pm 3\%$
- ORP within ± 10 millivolts (mV)
- DO within $\pm 10\%$
- Turbidity within $\pm 10\%$ (ideally less than 50 nephelometric turbidity units [NTUs])

Quality Control Samples

As approved by NYSDEC, OBG performed the sampling consistent with protocols for PFAS and 1,4-dioxane and analysis was completed by Eurofins TestAmerica using modified USEPA Method 537 with quantification of 21 PFAS, and analysis for 1,4-dioxane was completed using USEPA Method 8270 with selected ion monitoring (SIM) (Attachment II). Quality control (QC) samples were collected, and the analytical data package was validated by ddms in a report dated February 21, 2020.

As prescribed in the approved SAP, one set of quality control (QC) samples was collected during the sampling event for the PFAS and 1,4-dioxane analyses. The QC samples for the PFAS and 1,4-dioxane analyses included one blind duplicate sample, one matrix spike/matrix spike duplicate (MS/MSD) sample pair, and one equipment blank. In addition, one field reagent blank was collected as part of the PFAS QC samples.

Analysis	No. of Samples	Field Blank	Blind Duplicate	Equipment Blank	MS	MSD	Total
PFAS	3	1	1	1	1	1	8
1,4-dioxane	3	0	1	1	1	1	7

Validation and Results

Validation of the results was performed by ddms and provided in the report dated February 21, 2020. (Attachment III) The results indicate that PFAS are present at low levels in both on and off-Site wells. Concentrations were generally less than 20 ppt. The highest concentrations were observed at SWW-5 within the PAS containment area. 1,4-dioxane was also detected in well SWW-5 at 1000 ppb J and in M-21 at 630 ppb J. The 1-4-dioxane results in SWW-5 and M-21 were identified as estimated biased high due to a high laboratory control sample recovery and also given the J qualifier during validation due to calibration and recovery issues in the lab.



Conclusion

The data indicate detections of 1-4 dioxane on Site and immediately down gradient. However, it is important to note that well SWW-5 is on the PAS Site controlled by the City of Oswego and the State of New York and well M-21 is located on the Industrial Precision Products property controlled by an environmental easement completed in February 2006. In addition, all properties in proximity and down gradient of the PAS Site are within the Oswego City Limits and no potable wells are permitted within the City limits. Therefore, at this time no further action is proposed.

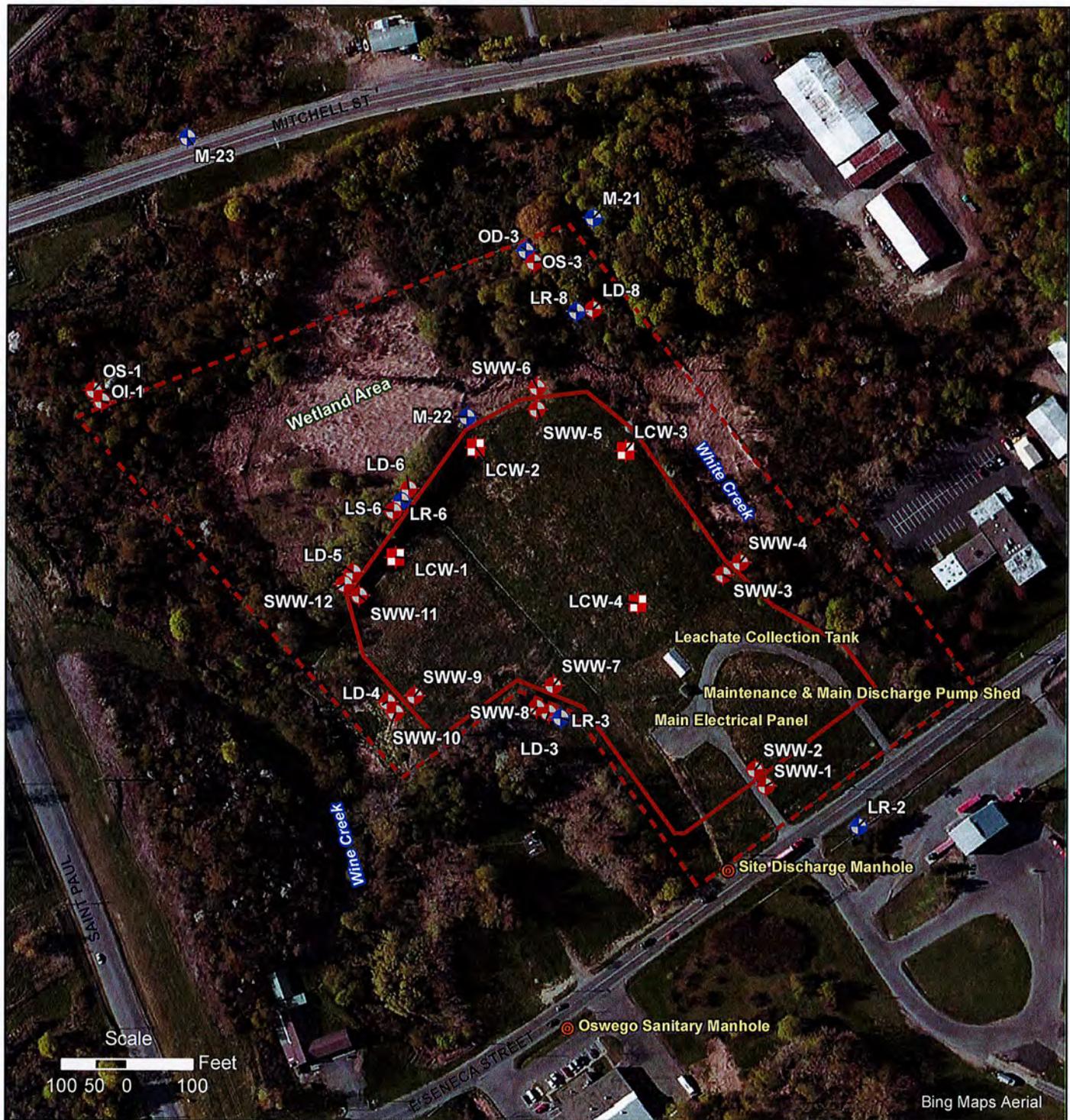
Should you have any questions, please contact me via e-mail or call me at 865-691-5052.

Sincerely,

A handwritten signature in blue ink, appearing to read "Clay McClarnon", with a long horizontal flourish extending to the right.

Clay McClarnon

CC: PAS Management Committee
Patricia Pierre, USEPA



LEGEND

Sample Locations

-  Bedrock Monitoring Well
-  Leachate Collection Well (Overburden)
-  Overburden Monitoring Well
-  Manhole
-  Fence (Site Boundary)
-  Slurry Wall

EXISTING SITE WELLS

PAS Site, Oswego, New York



Project No.: 3131
 Plot Date: 4 May 2012
 Arc Operator: BJAR
 Reviewed by:

Figure 1



ATTACHMENT I

ATTACHMENT II

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-162320-1
Client Project/Site: PAS Osewgo EC Sampling

For:

O'Brien & Gere Inc of North America
PO BOX 4873
Syracuse, New York 13221

Attn: Ms. Deborah Wright



Authorized for release by:
12/6/2019 5:49:51 PM

Alexander Gilbert, Project Management Assistant I
alexander.gilbert@testamericainc.com

Designee for

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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

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

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



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QC Association Summary	21
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Definitions/Glossary

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.

LCMS

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Case Narrative

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Job ID: 480-162320-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162320-1

Comments

No additional comments.

Receipt

The samples were received on 11/6/2019 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3° C.

GC/MS Semi VOA

Method 8270D SIM ID: Due to cross-contamination from high abundances of 1,4-Dioxane in samples associated with this job, the Method Blank (MB) contained 1,4-Dioxane above the reporting limit, and the Laboratory Control Sample (LCS) recovered above the upper control limit. The results have been qualified and reported. The following samples are impacted: M-21-110519 (480-162320-1), M-21-110519 (480-162320-1[MSJ]), M-21-110519 (480-162320-1[MSD]), EB-110519 (480-162320-2), SWW-5-110519 (480-162320-4), LR-2-110519 (480-162320-5) and FD-110519 (480-162320-6)

Method 8270D SIM ID: The recovery of 1,4-Dioxane in the following samples were over the upper range of the initial calibration: M-21-110519 (480-162320-1), M-21-110519 (480-162320-1[MSJ]), M-21-110519 (480-162320-1[MSD]) and SWW-5-110519 (480-162320-4). Due to the level of dilution required, the IDA 1,4-Dioxane-d8 would be diluted to a level that could not be detected; therefore, the recovery of 1,4-Dioxane could not be calculated. The results from the lower dilution have been qualified with an "E" flag and reported.

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

LCMS

Method 537 (modified): The laboratory control sample (LCS) for preparation batch 200-149688 and analytical batch 200-149808 recovered outside control limits for the following analytes: Perfluorotetradecanoic acid (PFTeA). These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 537 (modified): The Ion Ratio associated with PFOS and PFBS in sample SWW-5-110519 (480-162320-4) fails our in-house defined limits, however the result is being reported because the peaks observed for both mass transitions are within the expected retention time windows for the branched chain isomers in our calibration mix. Since many of these isomers are at very low levels in our mixed calibration source (many are less than 5% of the solution), it's difficult to project how the different isomer's responses differ at higher levels, so we don't feel comfortable rejecting the detect based solely upon the ratio failure: SWW-5-110519 (480-162320-4)

Method 537 (modified): The continuing calibration verification (CCV) associated with batch 200-149808 recovered above the upper control limit for Perfluorotetradecanoic acid (PFTeA). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 200-149808/29).

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

Organic Prep

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

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: M-21-110519

Lab Sample ID: 480-162320-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	630	E B *	0.19	0.095	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	9.0		1.6	0.80	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.5		1.6	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.3		1.6	0.61	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8		1.6	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	19		1.6	0.65	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.28	J	1.6	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.85	J	1.6	0.39	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		1.6	0.64	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		1.6	0.49	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EB-110519

Lab Sample ID: 480-162320-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.36	B *	0.19	0.096	ug/L	1		8270D SIM ID	Total/NA

Client Sample ID: FB-110519

Lab Sample ID: 480-162320-3

No Detections.

Client Sample ID: SWW-5-110519

Lab Sample ID: 480-162320-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1000	E B *	0.19	0.095	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	27		1.9	0.94	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		1.9	0.59	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.8		1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9		1.9	0.86	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	6.4		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.1	I	1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.9	I	1.9	0.58	ng/L	1		537 (modified)	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	15	J	19	5.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: LR-2-110519

Lab Sample ID: 480-162320-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.91	J	1.7	0.86	ng/L	1		537 (modified)	Total/NA

Client Sample ID: FD-110519

Lab Sample ID: 480-162320-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: M-21-110519

Lab Sample ID: 480-162320-1

Date Collected: 11/05/19 10:00

Matrix: Water

Date Received: 11/06/19 08:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	630	E B *	0.19	0.095	ug/L		11/09/19 08:36	11/14/19 01:32	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane-d8	32		15 - 110				11/09/19 08:36	11/14/19 01:32	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	9.0		1.6	0.80	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluoropentanoic acid (PFPeA)	3.5		1.6	0.51	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorohexanoic acid (PFHxA)	5.3		1.6	0.61	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluoroheptanoic acid (PFHpA)	1.8		1.6	0.73	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorooctanoic acid (PFOA)	19		1.6	0.65	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorononanoic acid (PFNA)	0.28	J	1.6	0.22	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorodecanoic acid (PFDA)	ND		1.6	0.62	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluoroundecanoic acid (PFUnA)	ND		1.6	0.63	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorododecanoic acid (PFDoA)	ND		1.6	0.47	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorotridecanoic acid (PFTriA)	ND		1.6	0.48	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorotetradecanoic acid (PFTeA)	ND *		1.6	0.74	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorobutanesulfonic acid (PFBS)	0.85	J	1.6	0.39	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		1.6	0.64	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.6	0.76	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorooctanesulfonic acid (PFOS)	3.5		1.6	0.49	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.6	0.72	ng/L		11/14/19 11:09	11/18/19 18:33	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.0	8.0	ng/L		11/14/19 11:09	11/18/19 18:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		16	1.4	ng/L		11/14/19 11:09	11/18/19 18:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		16	1.2	ng/L		11/14/19 11:09	11/18/19 18:33	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		16	4.4	ng/L		11/14/19 11:09	11/18/19 18:33	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		16	2.3	ng/L		11/14/19 11:09	11/18/19 18:33	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFDA	84		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C2 PFDoA	77		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C2 PFHxA	84		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C2 PFTeDA	63		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C2 PFUnA	89		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C4 PFBA	66		25 - 150				11/14/19 11:09	11/18/19 18:33	1
13C4 PFHpA	85		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C4 PFOA	85		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C4 PFOS	89		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C5 PFNA	85		50 - 150				11/14/19 11:09	11/18/19 18:33	1
13C5 PFPeA	80		25 - 150				11/14/19 11:09	11/18/19 18:33	1
13C8 FOSA	70		25 - 150				11/14/19 11:09	11/18/19 18:33	1
18O2 PFHxS	82		50 - 150				11/14/19 11:09	11/18/19 18:33	1
d3-NMeFOSAA	67		50 - 150				11/14/19 11:09	11/18/19 18:33	1
d5-NEtFOSAA	73		50 - 150				11/14/19 11:09	11/18/19 18:33	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: M-21-110519

Date Collected: 11/05/19 10:00

Date Received: 11/06/19 08:00

Lab Sample ID: 480-162320-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	93		25 - 150	11/14/19 11:09	11/18/19 18:33	1
M2-8:2 FTS	98		25 - 150	11/14/19 11:09	11/18/19 18:33	1

Client Sample ID: EB-110519

Date Collected: 11/05/19 10:45

Date Received: 11/06/19 08:00

Lab Sample ID: 480-162320-2

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.36	B *	0.19	0.096	ug/L		11/09/19 08:36	11/14/19 03:53	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	32		15 - 110	11/09/19 08:36	11/14/19 03:53	1			

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7	0.86	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.54	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.65	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.78	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.69	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.66	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.67	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.51	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.51	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorotetradecanoic acid (PFTeA)	ND *		1.7	0.79	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.42	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.69	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.81	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.52	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.77	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.6	8.6	ng/L		11/14/19 11:09	11/18/19 18:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	1.5	ng/L		11/14/19 11:09	11/18/19 18:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.3	ng/L		11/14/19 11:09	11/18/19 18:58	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	4.7	ng/L		11/14/19 11:09	11/18/19 18:58	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	2.5	ng/L		11/14/19 11:09	11/18/19 18:58	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C2 PFDA	96		50 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C2 PFDoA	78		50 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C2 PFHxA	95		50 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C2 PFTeDA	68		50 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C2 PFUnA	84		50 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C4 PFBA	89		25 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C4 PFHpA	95		50 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C4 PFOA	91		50 - 150	11/14/19 11:09	11/18/19 18:58	1			
13C4 PFOS	93		50 - 150	11/14/19 11:09	11/18/19 18:58	1			

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: EB-110519

Lab Sample ID: 480-162320-2

Date Collected: 11/05/19 10:45

Matrix: Water

Date Received: 11/06/19 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	96		50 - 150	11/14/19 11:09	11/18/19 18:58	1
13C5 PFPeA	95		25 - 150	11/14/19 11:09	11/18/19 18:58	1
13C8 FOSA	71		25 - 150	11/14/19 11:09	11/18/19 18:58	1
18O2 PFHxS	90		50 - 150	11/14/19 11:09	11/18/19 18:58	1
d3-NMeFOSAA	75		50 - 150	11/14/19 11:09	11/18/19 18:58	1
d5-NEtFOSAA	66		50 - 150	11/14/19 11:09	11/18/19 18:58	1
M2-6:2 FTS	93		25 - 150	11/14/19 11:09	11/18/19 18:58	1
M2-8:2 FTS	104		25 - 150	11/14/19 11:09	11/18/19 18:58	1

Client Sample ID: FB-110519

Lab Sample ID: 480-162320-3

Date Collected: 11/05/19 09:35

Matrix: Water

Date Received: 11/06/19 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.8	0.91	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.57	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.69	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.83	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.74	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.70	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.71	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.54	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	0.55	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorotetradecanoic acid (PFTeA)	ND *		1.8	0.84	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.45	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.73	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.87	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.56	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.82	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.1	9.1	ng/L		11/14/19 11:09	11/18/19 19:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	1.5	ng/L		11/14/19 11:09	11/18/19 19:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.4	ng/L		11/14/19 11:09	11/18/19 19:06	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		18	5.0	ng/L		11/14/19 11:09	11/18/19 19:06	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		18	2.6	ng/L		11/14/19 11:09	11/18/19 19:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	83		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C2 PFDoA	69		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C2 PFHxA	88		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C2 PFTeDA	58		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C2 PFUnA	76		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C4 PFBA	75		25 - 150	11/14/19 11:09	11/18/19 19:06	1
13C4 PFHpA	83		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C4 PFOA	82		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C4 PFOS	84		50 - 150	11/14/19 11:09	11/18/19 19:06	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: FB-110519

Date Collected: 11/05/19 09:35

Date Received: 11/06/19 08:00

Lab Sample ID: 480-162320-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	83		50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C5 PFPeA	84		25 - 150	11/14/19 11:09	11/18/19 19:06	1
13C8 FOSA	68		25 - 150	11/14/19 11:09	11/18/19 19:06	1
18O2 PFHxS	82		50 - 150	11/14/19 11:09	11/18/19 19:06	1
d3-NMeFOSAA	68		50 - 150	11/14/19 11:09	11/18/19 19:06	1
d5-NEtFOSAA	66		50 - 150	11/14/19 11:09	11/18/19 19:06	1
M2-6:2 FTS	80		25 - 150	11/14/19 11:09	11/18/19 19:06	1
M2-8:2 FTS	97		25 - 150	11/14/19 11:09	11/18/19 19:06	1

Client Sample ID: SWW-5-110519

Date Collected: 11/05/19 13:30

Date Received: 11/06/19 08:00

Lab Sample ID: 480-162320-4

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1000	E B *	0.19	0.095	ug/L		11/09/19 08:36	11/14/19 04:16	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	30		15 - 110	11/09/19 08:36	11/14/19 04:16	1			

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	27		1.9	0.94	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoropentanoic acid (PFPeA)	2.4		1.9	0.59	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorohexanoic acid (PFHxA)	4.8		1.9	0.72	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoroheptanoic acid (PFHpA)	1.9		1.9	0.86	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorooctanoic acid (PFOA)	6.4		1.9	0.76	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.73	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.74	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.57	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorotetradecanoic acid (PFTeA)	ND *		1.9	0.87	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorobutanesulfonic acid (PFBS)	2.1 I		1.9	0.46	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		1.9	0.76	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.90	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorooctanesulfonic acid (PFOS)	6.9 I		1.9	0.58	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.85	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.4	9.4	ng/L		11/14/19 11:09	11/18/19 19:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	1.6	ng/L		11/14/19 11:09	11/18/19 19:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.4	ng/L		11/14/19 11:09	11/18/19 19:22	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	15 J		19	5.2	ng/L		11/14/19 11:09	11/18/19 19:22	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		19	2.7	ng/L		11/14/19 11:09	11/18/19 19:22	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C2 PFDA	92		50 - 150	11/14/19 11:09	11/18/19 19:22	1			

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: SWW-5-110519

Lab Sample ID: 480-162320-4

Date Collected: 11/05/19 13:30

Matrix: Water

Date Received: 11/06/19 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	104		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C2 PFHxA	84		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C2 PFTeDA	78		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C2 PFUnA	105		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFBA	56		25 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFHpA	87		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFOA	96		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFOS	92		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C5 PFNA	105		50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C5 PFPeA	73		25 - 150	11/14/19 11:09	11/18/19 19:22	1
13C8 FOSA	78		25 - 150	11/14/19 11:09	11/18/19 19:22	1
18O2 PFHxS	93		50 - 150	11/14/19 11:09	11/18/19 19:22	1
d3-NMeFOSAA	82		50 - 150	11/14/19 11:09	11/18/19 19:22	1
d5-NEtFOSAA	101		50 - 150	11/14/19 11:09	11/18/19 19:22	1
M2-6:2 FTS	129		25 - 150	11/14/19 11:09	11/18/19 19:22	1
M2-8:2 FTS	121		25 - 150	11/14/19 11:09	11/18/19 19:22	1

Client Sample ID: LR-2-110519

Lab Sample ID: 480-162320-5

Date Collected: 11/05/19 15:00

Matrix: Water

Date Received: 11/06/19 08:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	*	0.19	0.095	ug/L		11/09/19 08:36	11/14/19 04:39	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	36		15 - 110	11/09/19 08:36	11/14/19 04:39	1			

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.91	J	1.7	0.86	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.54	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.65	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.78	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.69	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.66	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.67	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.50	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.51	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.7	0.79	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.42	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.68	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.81	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.52	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.77	ng/L		11/14/19 11:09	11/18/19 19:30	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.6	8.6	ng/L		11/14/19 11:09	11/18/19 19:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	1.5	ng/L		11/14/19 11:09	11/18/19 19:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.3	ng/L		11/14/19 11:09	11/18/19 19:30	1

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Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: LR-2-110519

Lab Sample ID: 480-162320-5

Date Collected: 11/05/19 15:00

Matrix: Water

Date Received: 11/06/19 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	4.7	ng/L		11/14/19 11:09	11/18/19 19:30	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	2.5	ng/L		11/14/19 11:09	11/18/19 19:30	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	95		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFDoA	81		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFHxA	99		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFTeDA	77		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFUnA	88		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFBA	93		25 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFHpA	100		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFOA	97		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFOS	98		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C5 PFNA	90		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C5 PFPeA	98		25 - 150				11/14/19 11:09	11/18/19 19:30	1
13C8 FOSA	88		25 - 150				11/14/19 11:09	11/18/19 19:30	1
18O2 PFHxS	97		50 - 150				11/14/19 11:09	11/18/19 19:30	1
d3-NMeFOSAA	71		50 - 150				11/14/19 11:09	11/18/19 19:30	1
d5-NEtFOSAA	74		50 - 150				11/14/19 11:09	11/18/19 19:30	1
M2-6:2 FTS	100		25 - 150				11/14/19 11:09	11/18/19 19:30	1
M2-8:2 FTS	91		25 - 150				11/14/19 11:09	11/18/19 19:30	1

Client Sample ID: FD-110519

Lab Sample ID: 480-162320-6

Date Collected: 11/05/19 00:00

Matrix: Water

Date Received: 11/06/19 08:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	*	0.19	0.095	ug/L		11/09/19 08:36	11/14/19 05:02	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	33		15 - 110				11/09/19 08:36	11/14/19 05:02	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7	0.83	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.52	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.63	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.75	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.67	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.22	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.64	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.65	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.49	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.50	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.7	0.76	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.41	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.66	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.79	ng/L		11/14/19 11:09	11/18/19 19:39	1

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Client Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: FD-110519

Lab Sample ID: 480-162320-6

Date Collected: 11/05/19 00:00

Matrix: Water

Date Received: 11/06/19 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.50	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.74	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.3	8.3	ng/L		11/14/19 11:09	11/18/19 19:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	1.4	ng/L		11/14/19 11:09	11/18/19 19:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.2	ng/L		11/14/19 11:09	11/18/19 19:39	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	4.5	ng/L		11/14/19 11:09	11/18/19 19:39	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	2.4	ng/L		11/14/19 11:09	11/18/19 19:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	82		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFDoA	82		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFHxA	101		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFTeDA	68		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFUnA	78		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFBA	92		25 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFHpA	92		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFOA	93		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFOS	93		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C5 PFNA	88		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C5 PFPeA	93		25 - 150				11/14/19 11:09	11/18/19 19:39	1
13C8 FOSA	81		25 - 150				11/14/19 11:09	11/18/19 19:39	1
18O2 PFHxS	88		50 - 150				11/14/19 11:09	11/18/19 19:39	1
d3-NMeFOSAA	70		50 - 150				11/14/19 11:09	11/18/19 19:39	1
d5-NEtFOSAA	78		50 - 150				11/14/19 11:09	11/18/19 19:39	1
M2-6:2 FTS	95		25 - 150				11/14/19 11:09	11/18/19 19:39	1
M2-8:2 FTS	91		25 - 150				11/14/19 11:09	11/18/19 19:39	1

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-110)
480-162320-1	M-21-110519	32
480-162320-1 MS	M-21-110519	26
480-162320-1 MSD	M-21-110519	29
480-162320-2	EB-110519	32
480-162320-4	SWW-5-110519	30
480-162320-5	LR-2-110519	36
480-162320-6	FD-110519	33
LCS 480-503365/2-A	Lab Control Sample	32
MB 480-503365/1-A	Method Blank	37

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDA (50-150)	PFDoA (50-150)	PFHxA (50-150)	PFTDA (50-150)	PFUnA (50-150)	PFBA (25-150)	PFHpA (50-150)	PFOA (50-150)
480-162320-1	M-21-110519	84	77	84	63	89	66	85	85
480-162320-1 MS	M-21-110519	79	69	85	60	77	66	85	85
480-162320-1 MSD	M-21-110519	87	78	88	64	86	73	91	89
480-162320-2	EB-110519	96	78	95	68	84	89	95	91
480-162320-3	FB-110519	83	69	88	58	76	75	83	82
480-162320-4	SWW-5-110519	92	104	84	78	105	56	87	96
480-162320-5	LR-2-110519	95	81	99	77	88	93	100	97
480-162320-6	FD-110519	82	82	101	68	78	92	92	93
LCS 200-149688/2-A	Lab Control Sample	84	77	90	65	79	80	83	83
MB 200-149688/1-A	Method Blank	106	89	99	77	88	91	97	95

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFOS (50-150)	PFNA (50-150)	PFPeA (25-150)	PFOSA (25-150)	PFHxS (50-150)	-NMeFOS _i (50-150)	-NEtFOS _i (50-150)	M262FTS (25-150)
480-162320-1	M-21-110519	89	85	80	70	82	67	73	93
480-162320-1 MS	M-21-110519	80	82	77	67	82	58	67	93
480-162320-1 MSD	M-21-110519	84	82	83	72	89	62	71	92
480-162320-2	EB-110519	93	96	95	71	90	75	66	93
480-162320-3	FB-110519	84	83	84	68	82	68	66	80
480-162320-4	SWW-5-110519	92	105	73	78	93	82	101	129
480-162320-5	LR-2-110519	98	90	98	88	97	71	74	100
480-162320-6	FD-110519	93	88	93	81	88	70	78	95
LCS 200-149688/2-A	Lab Control Sample	81	81	84	73	84	76	74	83
MB 200-149688/1-A	Method Blank	98	98	96	82	99	87	83	99

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M282FTS (25-150)
480-162320-1	M-21-110519	98
480-162320-1 MS	M-21-110519	89
480-162320-1 MSD	M-21-110519	91
480-162320-2	EB-110519	104
480-162320-3	FB-110519	97

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Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M282FTS (25-150)
480-162320-4	SWW-5-110519	121
480-162320-5	LR-2-110519	91
480-162320-6	FD-110519	91
LCS 200-149688/2-A	Lab Control Sample	95
MB 200-149688/1-A	Method Blank	119

Surrogate Legend

PFDA = 13C2 PFDA
PFDoA = 13C2 PFDoA
PFHxA = 13C2 PFHxA
PFTDA = 13C2 PFTeDA
PFUnA = 13C2 PFUnA
PFBA = 13C4 PFBA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFNA = 13C5 PFNA
PFPeA = 13C5 PFPeA
PFOSA = 13C8 FOSA
PFHxS = 18O2 PFHxS
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 8270D SIM ID - Semivolatle Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-503365/1-A
Matrix: Water
Analysis Batch: 504158

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 503365

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	0.352		0.20	0.10	ug/L		11/09/19 08:36	11/13/19 23:57	1
Isotope Dilution									
	MB	MB	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8		37	15 - 110				11/09/19 08:36	11/13/19 23:57	1

Lab Sample ID: LCS 480-503365/2-A
Matrix: Water
Analysis Batch: 504158

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 503365

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
1,4-Dioxane	1.00	1.81	E *	ug/L		181	40 - 140
Isotope Dilution							
	LCS	LCS	Limits				
1,4-Dioxane-d8		32	15 - 110				

Lab Sample ID: 480-162320-1 MS
Matrix: Water
Analysis Batch: 504158

Client Sample ID: M-21-110519
Prep Type: Total/NA
Prep Batch: 503365

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
1,4-Dioxane	630	E B *	0.952	681	E 4	ug/L		4959	40 - 140
Isotope Dilution									
	MS	MS	Limits						
1,4-Dioxane-d8		26	15 - 110						

Lab Sample ID: 480-162320-1 MSD
Matrix: Water
Analysis Batch: 504158

Client Sample ID: M-21-110519
Prep Type: Total/NA
Prep Batch: 503365

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
1,4-Dioxane	630	E B *	0.952	624	E 4	ug/L		-1092	40 - 140	9	20
Isotope Dilution											
	MSD	MSD	Limits								
1,4-Dioxane-d8		29	15 - 110								

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 200-149688/1-A
Matrix: Water
Analysis Batch: 149808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 149688

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	ND		2.0	1.0	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.63	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.76	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.91	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.81	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.77	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.78	ng/L		11/14/19 11:09	11/18/19 17:19	1

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QC Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 200-149688/1-A
Matrix: Water
Analysis Batch: 149808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 149688

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.59	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.60	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.92	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.49	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.80	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.95	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.61	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.90	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorooctanesulfonamide (PFOSA)	ND		10	10	ng/L		11/14/19 11:09	11/18/19 17:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	1.7	ng/L		11/14/19 11:09	11/18/19 17:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.5	ng/L		11/14/19 11:09	11/18/19 17:19	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		20	5.5	ng/L		11/14/19 11:09	11/18/19 17:19	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		20	2.9	ng/L		11/14/19 11:09	11/18/19 17:19	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	106		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFDoA	89		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFHxA	99		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFTeDA	77		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFUnA	88		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFBA	91		25 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFHpA	97		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFOA	95		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFOS	98		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C5 PFNA	98		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C5 PFPeA	96		25 - 150	11/14/19 11:09	11/18/19 17:19	1
13C8 FOSA	82		25 - 150	11/14/19 11:09	11/18/19 17:19	1
18O2 PFHxS	99		50 - 150	11/14/19 11:09	11/18/19 17:19	1
d3-NMeFOSAA	87		50 - 150	11/14/19 11:09	11/18/19 17:19	1
d5-NEtFOSAA	83		50 - 150	11/14/19 11:09	11/18/19 17:19	1
M2-6:2 FTS	99		25 - 150	11/14/19 11:09	11/18/19 17:19	1
M2-8:2 FTS	119		25 - 150	11/14/19 11:09	11/18/19 17:19	1

Lab Sample ID: LCS 200-149688/2-A
Matrix: Water
Analysis Batch: 149808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149688

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	42.7		ng/L		107	50 - 150
Perfluoropentanoic acid (PFPeA)	40.0	43.1		ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	40.0	40.6		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	40.0	44.7		ng/L		112	70 - 130
Perfluorooctanoic acid (PFOA)	40.0	41.7		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	40.0	42.7		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	40.0	43.1		ng/L		108	70 - 130

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QC Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 200-149688/2-A
Matrix: Water
Analysis Batch: 149808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149688

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	40.0	40.5		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	40.0	42.7		ng/L		107	70 - 130
Perfluorotridecanoic acid (PFTriA)	40.0	40.6		ng/L		101	70 - 130
Perfluorotetradecanoic acid (PFTeA)	40.0	58.9 *		ng/L		147	70 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	37.6		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.8		ng/L		106	70 - 130
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.8		ng/L		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)	37.1	42.2		ng/L		114	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	47.8		ng/L		124	50 - 150
Perfluorooctanesulfonamide (PFOSA)	40.0	45.9		ng/L		115	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.4		ng/L		99	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.6		ng/L		97	70 - 130
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	37.9	32.0		ng/L		84	50 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	38.3	27.4		ng/L		71	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFDA	84		50 - 150
13C2 PFDoA	77		50 - 150
13C2 PFHxA	90		50 - 150
13C2 PFTeDA	65		50 - 150
13C2 PFUnA	79		50 - 150
13C4 PFBA	80		25 - 150
13C4 PFHpA	83		50 - 150
13C4 PFOA	83		50 - 150
13C4 PFOS	81		50 - 150
13C5 PFNA	81		50 - 150
13C5 PFPeA	84		25 - 150
13C8 FOSA	73		25 - 150
18O2 PFHxS	84		50 - 150
d3-NMeFOSAA	76		50 - 150
d5-NEtFOSAA	74		50 - 150
M2-6:2 FTS	83		25 - 150
M2-8:2 FTS	95		25 - 150

QC Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-162320-1 MS

Matrix: Water

Analysis Batch: 149808

Client Sample ID: M-21-110519

Prep Type: Total/NA

Prep Batch: 149688

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Perfluorobutanoic acid (PFBA)	9.0		32.8	47.2		ng/L		116	40 - 160
Perfluoropentanoic acid (PFPeA)	3.5		32.8	39.1		ng/L		108	40 - 160
Perfluorohexanoic acid (PFHxA)	5.3		32.8	39.0		ng/L		103	40 - 160
Perfluoroheptanoic acid (PFHpA)	1.8		32.8	36.1		ng/L		104	40 - 160
Perfluorooctanoic acid (PFOA)	19		32.8	54.3		ng/L		107	40 - 160
Perfluorononanoic acid (PFNA)	0.28	J	32.8	35.1		ng/L		106	40 - 160
Perfluorodecanoic acid (PFDA)	ND		32.8	34.8		ng/L		106	40 - 160
Perfluoroundecanoic acid (PFUnA)	ND		32.8	30.7		ng/L		94	40 - 160
Perfluorododecanoic acid (PFDoA)	ND		32.8	34.2		ng/L		104	40 - 160
Perfluorotridecanoic acid (PFTriA)	ND		32.8	35.2		ng/L		107	40 - 160
Perfluorotetradecanoic acid (PFTeA)	ND	*	32.8	44.9		ng/L		137	40 - 160
Perfluorobutanesulfonic acid (PFBS)	0.85	J	29.0	29.6		ng/L		99	40 - 160
Perfluorohexanesulfonic acid (PFHxS)	2.5		29.9	33.8		ng/L		105	40 - 160
Perfluoroheptanesulfonic Acid (PFHpS)	ND		31.3	36.0		ng/L		115	40 - 160
Perfluorooctanesulfonic acid (PFOS)	3.5		30.5	35.0		ng/L		103	40 - 160
Perfluorodecanesulfonic acid (PFDS)	ND		31.6	34.2		ng/L		108	40 - 160
Perfluorooctanesulfonamide (PFOSA)	ND		32.8	37.2		ng/L		113	40 - 160
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		32.8	38.4		ng/L		117	40 - 160
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		32.8	30.9		ng/L		94	40 - 160
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		31.1	28.9		ng/L		93	40 - 160
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		31.5	22.7		ng/L		72	40 - 160

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C2 PFDA	79		50 - 150
13C2 PFDoA	69		50 - 150
13C2 PFHxA	85		50 - 150
13C2 PFTeDA	60		50 - 150
13C2 PFUnA	77		50 - 150
13C4 PFBA	66		25 - 150
13C4 PFHpA	85		50 - 150
13C4 PFOA	85		50 - 150
13C4 PFOS	80		50 - 150
13C5 PFNA	82		50 - 150
13C5 PFPeA	77		25 - 150
13C8 FOSA	67		25 - 150
18O2 PFHxS	82		50 - 150
d3-NMeFOSAA	58		50 - 150
d5-NEtFOSAA	67		50 - 150

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QC Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-162320-1 MS
Matrix: Water
Analysis Batch: 149808

Client Sample ID: M-21-110519
Prep Type: Total/NA
Prep Batch: 149688

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
M2-6:2 FTS	93		25 - 150
M2-8:2 FTS	89		25 - 150

Lab Sample ID: 480-162320-1 MSD
Matrix: Water
Analysis Batch: 149808

Client Sample ID: M-21-110519
Prep Type: Total/NA
Prep Batch: 149688

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	9.0		34.0	45.0		ng/L		106	40 - 160	5	30
Perfluoropentanoic acid (PFPeA)	3.5		34.0	41.3		ng/L		111	40 - 160	5	30
Perfluorohexanoic acid (PFHxA)	5.3		34.0	42.9		ng/L		111	40 - 160	10	20
Perfluoroheptanoic acid (PFHpA)	1.8		34.0	39.6		ng/L		111	40 - 160	9	20
Perfluorooctanoic acid (PFOA)	19		34.0	54.6		ng/L		104	40 - 160	1	20
Perfluorononanoic acid (PFNA)	0.28	J	34.0	37.1		ng/L		108	40 - 160	6	20
Perfluorodecanoic acid (PFDA)	ND		34.0	36.3		ng/L		107	40 - 160	4	20
Perfluoroundecanoic acid (PFUnA)	ND		34.0	32.9		ng/L		97	40 - 160	7	20
Perfluorododecanoic acid (PFDoA)	ND		34.0	34.0		ng/L		100	40 - 160	0	20
Perfluorotridecanoic acid (PFTriA)	ND		34.0	34.5		ng/L		101	40 - 160	2	20
Perfluorotetradecanoic acid (PFTeA)	ND	*	34.0	46.0		ng/L		135	40 - 160	2	20
Perfluorobutanesulfonic acid (PFBS)	0.85	J	30.1	30.2		ng/L		98	40 - 160	2	20
Perfluorohexanesulfonic acid (PFHxS)	2.5		31.0	33.9		ng/L		101	40 - 160	0	20
Perfluoroheptanesulfonic Acid (PFHpS)	ND		32.4	37.6		ng/L		116	40 - 160	4	30
Perfluorooctanesulfonic acid (PFOS)	3.5		31.6	38.4		ng/L		110	40 - 160	9	20
Perfluorodecanesulfonic acid (PFDS)	ND		32.8	33.4		ng/L		102	40 - 160	2	30
Perfluorooctanesulfonamide (PFOSA)	ND		34.0	39.5		ng/L		116	40 - 160	6	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		34.0	36.6		ng/L		107	40 - 160	5	20
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		34.0	37.1		ng/L		109	40 - 160	18	20
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		32.3	31.9		ng/L		99	40 - 160	10	30
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		32.6	23.9		ng/L		73	40 - 160	5	30

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
13C2 PFDA	87		50 - 150
13C2 PFDoA	78		50 - 150
13C2 PFHxA	88		50 - 150
13C2 PFTeDA	64		50 - 150
13C2 PFUnA	86		50 - 150
13C4 PFBA	73		25 - 150
13C4 PFHpA	91		50 - 150

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-162320-1 MSD

Matrix: Water

Analysis Batch: 149808

Client Sample ID: M-21-110519

Prep Type: Total/NA

Prep Batch: 149688

<i>Isotope Dilution</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
13C4 PFOA	89		50 - 150
13C4 PFOS	84		50 - 150
13C5 PFNA	82		50 - 150
13C5 PFPeA	83		25 - 150
13C8 FOSA	72		25 - 150
18O2 PFHxS	89		50 - 150
d3-NMeFOSAA	62		50 - 150
d5-NEtFOSAA	71		50 - 150
M2-6:2 FTS	92		25 - 150
M2-8:2 FTS	91		25 - 150

QC Association Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

GC/MS Semi VOA

Prep Batch: 503365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162320-1	M-21-110519	Total/NA	Water	3510C	
480-162320-2	EB-110519	Total/NA	Water	3510C	
480-162320-4	SWW-5-110519	Total/NA	Water	3510C	
480-162320-5	LR-2-110519	Total/NA	Water	3510C	
480-162320-6	FD-110519	Total/NA	Water	3510C	
MB 480-503365/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-503365/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-162320-1 MS	M-21-110519	Total/NA	Water	3510C	
480-162320-1 MSD	M-21-110519	Total/NA	Water	3510C	

Analysis Batch: 504158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162320-1	M-21-110519	Total/NA	Water	8270D SIM ID	503365
480-162320-2	EB-110519	Total/NA	Water	8270D SIM ID	503365
480-162320-4	SWW-5-110519	Total/NA	Water	8270D SIM ID	503365
480-162320-5	LR-2-110519	Total/NA	Water	8270D SIM ID	503365
480-162320-6	FD-110519	Total/NA	Water	8270D SIM ID	503365
MB 480-503365/1-A	Method Blank	Total/NA	Water	8270D SIM ID	503365
LCS 480-503365/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	503365
480-162320-1 MS	M-21-110519	Total/NA	Water	8270D SIM ID	503365
480-162320-1 MSD	M-21-110519	Total/NA	Water	8270D SIM ID	503365

LCMS

Prep Batch: 149688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162320-1	M-21-110519	Total/NA	Water	3535	
480-162320-2	EB-110519	Total/NA	Water	3535	
480-162320-3	FB-110519	Total/NA	Water	3535	
480-162320-4	SWW-5-110519	Total/NA	Water	3535	
480-162320-5	LR-2-110519	Total/NA	Water	3535	
480-162320-6	FD-110519	Total/NA	Water	3535	
MB 200-149688/1-A	Method Blank	Total/NA	Water	3535	
LCS 200-149688/2-A	Lab Control Sample	Total/NA	Water	3535	
480-162320-1 MS	M-21-110519	Total/NA	Water	3535	
480-162320-1 MSD	M-21-110519	Total/NA	Water	3535	

Analysis Batch: 149808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162320-1	M-21-110519	Total/NA	Water	537 (modified)	149688
480-162320-2	EB-110519	Total/NA	Water	537 (modified)	149688
480-162320-3	FB-110519	Total/NA	Water	537 (modified)	149688
480-162320-4	SWW-5-110519	Total/NA	Water	537 (modified)	149688
480-162320-5	LR-2-110519	Total/NA	Water	537 (modified)	149688
480-162320-6	FD-110519	Total/NA	Water	537 (modified)	149688
MB 200-149688/1-A	Method Blank	Total/NA	Water	537 (modified)	149688
LCS 200-149688/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	149688
480-162320-1 MS	M-21-110519	Total/NA	Water	537 (modified)	149688
480-162320-1 MSD	M-21-110519	Total/NA	Water	537 (modified)	149688

Lab Chronicle

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: M-21-110519

Lab Sample ID: 480-162320-1

Date Collected: 11/05/19 10:00

Matrix: Water

Date Received: 11/06/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 01:32	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 18:33	BWC	TAL BUR

Client Sample ID: EB-110519

Lab Sample ID: 480-162320-2

Date Collected: 11/05/19 10:45

Matrix: Water

Date Received: 11/06/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 03:53	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 18:58	BWC	TAL BUR

Client Sample ID: FB-110519

Lab Sample ID: 480-162320-3

Date Collected: 11/05/19 09:35

Matrix: Water

Date Received: 11/06/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:06	BWC	TAL BUR

Client Sample ID: SWW-5-110519

Lab Sample ID: 480-162320-4

Date Collected: 11/05/19 13:30

Matrix: Water

Date Received: 11/06/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 04:16	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:22	BWC	TAL BUR

Client Sample ID: LR-2-110519

Lab Sample ID: 480-162320-5

Date Collected: 11/05/19 15:00

Matrix: Water

Date Received: 11/06/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 04:39	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:30	BWC	TAL BUR

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Client Sample ID: FD-110519

Lab Sample ID: 480-162320-6

Date Collected: 11/05/19 00:00

Matrix: Water

Date Received: 11/06/19 08:00

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 05:02	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:39	BWC	TAL BUR

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

Laboratory: Eurofins TestAmerica, Burlington

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10391	04-01-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (PFOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL BUR
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PAS Osewgo EC Sampling

Job ID: 480-162320-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-162320-1	M-21-110519	Water	11/05/19 10:00	11/06/19 08:00	
480-162320-2	EB-110519	Water	11/05/19 10:45	11/06/19 08:00	
480-162320-3	FB-110519	Water	11/05/19 09:35	11/06/19 08:00	
480-162320-4	SWW-5-110519	Water	11/05/19 13:30	11/06/19 08:00	
480-162320-5	LR-2-110519	Water	11/05/19 15:00	11/06/19 08:00	
480-162320-6	FD-110519	Water	11/05/19 00:00	11/06/19 08:00	

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Chain of Custody Record

From Syr; PFCs → BUE; Bal → BUE. - PC

**Syracuse
#225**

Client Information	Sampler: Allie Berry	Lab PM: Schove, John R	COC No: 480-137797-30986.1
Client Contact: Ms. Deborah Wright	Phone: 315-250-5451	E-Mail: john.schove@testamericainc.com	Page: Page 1 of 1
Company: O'Brien & Gere Inc of North America	Analysis Requested		Job #:

Address: PO BOX 4873	Due Date Requested:	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) PFC_IDA - PFAS, Standard List (21 analytes) 82700_SIM_MS_ID - SIM List	Total Number of containers	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)
City: Syracuse	TAT Requested (days):			
State, Zip: NY, 13221	PO #: 181900212			
Phone: 315-437-6100(Tel)	WO #:			
Email: deborah.wright@ramboll.com	Project #: 48021202			
Project Name: PAS Osewgo EC Sampling	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 analytes)	82700_SIM_MS_ID - SIM List	Total Number of containers	Special Instructions/Note:
M-21-110519	11/5/19	1000	LA	Water	Y	X	X			
EB-110519	11/5/19	1045	G	Water		X	Y			
FB-110519	11/5/19	0935	G	Water		X	X			
SWW-5-110519	11/5/19	1330	G	Water		X	X			
LE-2-110519	11/5/19	1500	G	Water		X	Y			
FD-110519	11/5/19	-	G	Water		X	X			
				Water						
				Water						



480-162320 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) _____
 Special Instructions/QC Requirements: _____

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: allie berry	Date/Time: 11/5/19 17:40	Company: Ramboll	Received by: REINGLICK
Relinquished by: REINGLICK	Date/Time: 11-5-19, 19:00	Company: Syr	Received by: Amkrow Nikolp
Relinquished by:	Date/Time:	Company:	Received by:

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3 #1 ICE
--	-------------------	---



ORIGIN ID:SYRA (315) 431-0171
SYR SERVICE CENTER
EUROKINS TESTAMERICA
118 BOSS RD
SYRACUSE, NY 13211
UNITED STATES US

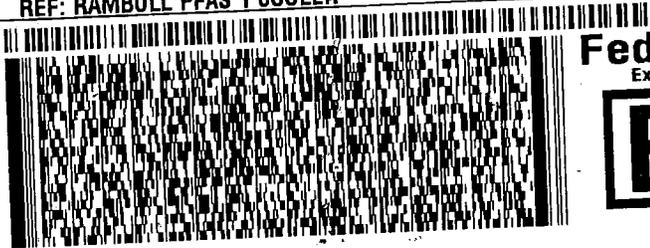
SHIP DATE: 05NOV19
ACTWGT: 30.00 LB MAN
CAD: 251798/CAFE3211
BILL-RECIPIENT

TO **SAMPLE RECEIVING**
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE SUITE 11

SOUTH BURLINGTON VT 05403

(802) 860-1990

REF: RAMBOLL PFAS 1 COOLER



FedEx
Express



WED - 06 NOV 10:30A
PRIORITY OVERNIGHT

TRK# 1112 8550 1222
0201

NL BTVA

05403
VT-US **BTV**



Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-162320-1

Login Number: 162320

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Kolb, Chris M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ramboll
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-162320-1

Login Number: 162320

List Number: 2

Creator: McNabb, Robert W

List Source: Eurofins TestAmerica, Burlington

List Creation: 11/08/19 05:11 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	1080022
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	AB
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT III



DATA VALIDATION

FOR

**EMERGING CONTAMINANTS
PAS Oswego
OSWEGO, NEW YORK**

**ORGANIC ANALYSIS DATA
1,4-Dioxane and Per- and Polyfluorinated Alkyl Substances (PFAS) in Water**

Laboratory Job No. 480-162320-1

Analyses Performed By:

**Eurofins TestAmerica Buffalo
Amherst, New York**

For:

**de maximis, Inc.
Knoxville, Tennessee 37919**

Data Validation By:

**ddms, inc.
St. Paul, Minnesota 55108**

February 21, 2020

**1547-3131/ekd/psn
PAS\480-162320-1 PFAS.docx**



EXECUTIVE SUMMARY

Validation of the 1,4-dioxane and PFAS analysis data prepared by Eurofins TestAmerica Buffalo for four water samples, one equipment blank, and one field blank supporting the PAS Oswego (Site) Emerging Contaminants sampling event has been completed by de maximis Data Management Solutions, Inc. (ddms). The data were reported by the laboratory under Job No. 480-162320-1, which includes the following samples:

M-21-110519	EB-110519	FB-110519
SWW-5-110519	LR-2-110519	FD-110519

Based on the validation effort, the following data qualifiers were applied:

- The result for 1,4-dioxane in EB-110519 was qualified as estimated biased high (J+) due to the high recovery of this compound in the associated laboratory control sample (LCS) analysis.
- Results for 1,4-dioxane in M-21-110519 and SWW-5-110519 were qualified as estimated (J) because concentrations of this analyte exceeded the upper limit of the established instrument calibration range. These results were also qualified as estimated biased high due to a high LCS recovery; the "J" qualifier takes precedence.
- Results for 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS) in SWW-5-110519, LR-2-110519, and FD-110519 were qualified as estimated (UJ) due to the high percent difference (%D) for this analyte in an associated continuing calibration (CC) standard.
- Results for perfluorobutanoic acid (PFBA) in LR-2-110519 and FD-110519 were qualified as estimated (J, UJ) due to lack of confirmation at a low concentration in the field duplicate analysis.
- Results for perfluorobutanesulfonic acid (PFBS) in M-21-110519 and for PFBS and perfluorooctanesulfonic acid (PFOS) in SWW-5-1105 were qualified as tentatively identified and estimated (NJ) because ion ratios for these analytes were outside the laboratory limits.

All other results were determined to be valid as reported by the laboratory.

This report should be considered part of the data package for all future distributions of the data.



1.0 Introduction

This report presents the findings of the data validation assessment performed on the analyses of water samples collected on November 5, 2019, for the PAS Oswego emerging contaminants sampling event. Samples submitted to the laboratory in sample delivery group 480-162320-1 were reviewed in this report to identify quality issues which could affect the use of the sample data for decision-making purposes.

The 1,4-dioxane analyses were performed by Eurofins TestAmerica Buffalo in accordance with USEPA SW-846 Method 8270D with selective ion monitoring (SIM). The PFAS analyses were performed by Eurofins TestAmerica Burlington, under subcontract to Eurofins TestAmerica Buffalo, in accordance with USEPA Method 537 Modified. The laboratory provided a "CLP-type" data package for review.

The data validation was performed in accordance with the USEPA Region 2 Standard Operating Procedure (SOP) HW-22, "Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D" (Revision 5, December 2010), the specifications of the analytical methods followed, and ddms' SOPs ECS-SOP-002, "Validation and Review of Semivolatile Organic Data," ESC-SOP-004, "Validation and Review of Organic Analyses Using Selective Ion Monitoring (SIM), and draft ECS-SOP-007, "Standard Operating Procedures (SOPs) Validation and Review of Per- and Polyfluorinated Alkyl Substances (PFAS)". Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytical methodology, professional judgement was applied.

The data validation process is intended to evaluate data on a technical basis rather than a contract compliance basis for chemical analyses conducted under the referenced method. An initial assumption is that the data package is presented in accordance with the CLP requirements (or "CLP-like," as in this case). It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate quality review prior to submission for validation.

During the validation process, laboratory data are verified against all available supporting documentation. Based on the findings of the validation, qualifier codes may have been added by the data validator. Validated results are, therefore, either qualified or unqualified. Unqualified results mean that the reported values may be used without reservation. Final validated results are annotated with the following codes as defined by the Region 2 Guidelines:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.

- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”
- JN The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
- U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

These codes are recorded on the Data Summary Forms contained in Attachment A of this validation report to indicate qualifications placed on the results based on the data review.

The data user is also cautioned that the validation effort is based on the raw data printouts as provided by the laboratory. Software manipulation cannot be routinely detected during validation; unless otherwise stated in the report, these kinds of issues are outside the scope of this review.

2.0 Holding Times, Preservation and Sample Integrity

A copy of the applicable chain of custody (COC) record was included in the data package documenting a sample collection date of November 5, 2019. The samples were received at Eurofins TestAmerica Buffalo on November 6, 2019 and at Eurofins TestAmerica Burlington on November 7, 2019.

The temperatures of the cooler upon receipt at Eurofins TestAmerica Buffalo (3.3°C) and at Eurofins TestAmerica Burlington (0.7°C) were acceptable (QC <10°C).

The water samples were extracted on November 9, 2019, for 1,4-dioxane analyses, which is within the specified holding time of 14 days from collection. The 1,4-dioxane analyses were performed on November 14, 2019, which is within the specified holding time of 40 days from extraction.

The water samples were extracted on November 14, 2019, for PFAS analyses, which is within the specified holding time of 14 days from collection. PFAS analyses were performed on November 18, 2019, which is within the specified holding time of 28 days from extraction.

3.0 Documentation

No documentation issues were observed during the validation effort.

The remainder of this report discusses the review effort for each of the parameters. The tables below document the Quality Control (QC) parameters reviewed. Only those quality control excursions resulting in qualified data are discussed. Quality control excursions having no impact on sample results are not discussed. Where a result was qualified J+ or J- and J, the J qualifier takes precedence. Where a result was qualified biased high and low for differing data quality excursions, the final qualifier is J with an indeterminate bias.

4.0 1,4-Dioxane by SIM

Review Element	Acceptable?
Preservation and Technical Holding Times	Y
Calibration (Initial Calibration [IC], IC Verification, Continuing Calibration)	Y
Blanks	Y
GC/MS Instrument Tunes	Y
Surrogates	Y
Laboratory Control Samples (LCS)	N
Field Duplicates*	N/A
Matrix Spike (MS) and Matrix Spike Duplicate (MSD)	Y
Quantitation	N
Compound Identification	Y

Y=yes

N=no

N/A = Not applicable

4.1 Laboratory Control Sample (LCS)

One LCS was prepared and analyzed with the field samples. The recovery of 1,4-dioxane in the LCS (181%) exceeded the validation limits (QC 70-130%). Results for 1,4-dioxane in M-21-110519, EB-110519, and SWW-5-110519 were qualified as estimated biased high (J+) due to the high recovery of this compound in the associated LCS analysis. Since 1,4-dioxane was not detected in the remaining site samples, no additional qualifiers were necessary on this basis.

4.2 Compound Quantitation

1,4-Dioxane results and reporting limits were correctly calculated and accurately reported, including necessary adjustments for the sample preparation procedure.



Concentrations of 1,4-dioxane in M-21-110519 and SWW-5-110519 exceeded the upper limit of the established instrument calibration range and were qualified as estimated (J) on this basis. No diluted analyses of these samples were performed. Given the very high dilution factors that would have been required, the spiked concentration of the labeled analog would have been diluted out of both samples.

5.0 PFAS

Review Element	Acceptable?
Calibration - IC, ICV, CC	N
Laboratory and Field Blanks	Y
Labeled Analogs	Y
LCS/LCSD	Y
Field Duplicates	N
MS/MSD	Y
Internal Standard Responses	Y
Compound Identification	N
Compound Quantitation	Y

5.1 Calibration

An initial calibration (IC) run on October 28, 2019, was associated with the site sample analyses, and results for the IC were acceptable for all target analytes. A second-source initial calibration verification (ICV) standard was analyzed after the IC. Recoveries of the target analytes in the ICV standard were within the acceptance limits of 70-130%.

CC standards at 0.05 ng/mL, 1.0 ng/mL, and 2.5 ng/mL were analyzed at appropriate frequencies in the analysis series that included the site samples. The %Ds for the target compounds were less than 30% except for 8:2 FTS in the CC standard run on November 18, 2019, at 21:01 (31.8%D). The high %D represents a decrease in sensitivity. Results for 8:2 FTS in SWW-5-110519, LR-2-110519, and FD-110519 were qualified as estimated (UJ) due to the high %D for this compound in an associated CC standard. All other samples were bracketed by acceptable CC standards; therefore, no additional qualifiers were necessary on this basis.

5.2 Field Duplicate

Sample FD-110519 was submitted as a field duplicate of LR-2-110519. PFBA was reported at a low concentration in LR-2-110519 (0.91 J ng/L), but this analyte was not detected in FD-110519 (1.7 U ng/L). Results for PFBA in LR-2-110519 and FD-110519 were qualified as estimated (J, UJ) due to lack of confirmation at a low concentration in the field duplicate analysis.

5.3 Target Analyte Identification

Target compounds were detected in the field samples based on the presence of characteristic ions within the established retention time windows. Based on review of the data provided, sample results reflect accurate compound identification.

Ion ratios for some compounds, where secondary ions were used for identification and confirmation, were outside of the laboratory's established windows, as shown below

Sample	Analyte	Ion Ratio	Ion Ratio Window	Qualifier Applied
M-21-110519	PFBS	5.25	1.49-4.47	NJ
SWW-5-110519	PFBS	7.11	0.97-2.90	NJ
	PFOS	21.65	2.51-7.52	NJ

Results for PFBS in M-21-110519 and for PFBS and PFOS in SWW-5-1105 were qualified as tentatively identified and estimated (NJ) because ion ratios for these analytes were outside the laboratory limits.



ATTACHMENT A

**DATA SUMMARY FORMS
Job No. 480-162320-1
1,4-Dioxane and PFAS in Water**

Job No. 480-162320-1
 Site Name: PAS

Data Summary Form for Emerging Contaminants Samples
 PFAS and 1,4-Dioxane

ddms Project No. 1S473131
 Sampling Date 11/5/2019

		EB-110519 480-162320-2			FB-110519 480-162320-3		
		1			1		
Parameter	Unit						
2-[N-Methylperfluorooctanesulfonamido] acetic acid (NMeFOSAA)	ng/L	17	U		18	U	
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]- (NEtFOSAA)	ng/L	17	U		18	U	
Perfluorobutanesulfonic Acid (PFBS)	ng/L	1.7	U		1.8	U	
Perfluorobutyric Acid (PFBA)	ng/L	1.7	U		1.8	U	
Perfluorodecanesulfonic acid (PFDS)	ng/L	1.7	U		1.8	U	
Perfluorodecanoic Acid (PFDA)	ng/L	1.7	U		1.8	U	
Perfluorododecanoic Acid (PFDoA)	ng/L	1.7	U		1.8	U	
Perfluoroheptanesulfonic Acid (PFHpS)	ng/L	1.7	U		1.8	U	
Perfluoroheptanoic Acid (PFHpA)	ng/L	1.7	U		1.8	U	
Perfluorohexanesulfonic Acid (PFHxS)	ng/L	1.7	U		1.8	U	
Perfluorohexanoic Acid (PFHxA)	ng/L	1.7	U		1.8	U	
Perfluorononanoic Acid (PFNA)	ng/L	1.7	U		1.8	U	
Perfluorooctanesulfonamide (PFOSA)	ng/L	8.6	U		9.1	U	
Perfluorooctanesulfonic Acid (PFOS)	ng/L	1.7	U		1.8	U	
Perfluorooctanoic Acid (PFOA)	ng/L	1.7	U		1.8	U	
Perfluoropentanoic Acid (PFPeA)	ng/L	1.7	U		1.8	U	
Perfluorotetradecanoic Acid (PFTreA)	ng/L	1.7	U		1.8	U	
Perfluorotridecanoic Acid (PFTriA)	ng/L	1.7	U		1.8	U	
Perfluoroundecanoic Acid (PFUnA)	ng/L	1.7	U		1.8	U	
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	ng/L	17	U		18	U	
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	17	U		18	U	
1,4-Dioxane	ug/L	0.36	J+	high LCS %R	--	--	

Job No. 480-162320-1
 Site Name: PAS

Data Summary Form for Emerging Contaminants Samples
 PFAS and 1,4-Dioxane

ddms Project No. 1S473131
 Sampling Date 11/5/2019

		FD-110519 480-162320-6			LR-2-110519 480-162320-5		
		1			1		
Parameter	Unit						
2-[N-Methylperfluorooctanesulfonamido] acetic acid (NMeFOSAA)	ng/L	17	U		17	U	
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]- (NEtFOSAA)	ng/L	17	U		17	U	
Perfluorobutanesulfonic Acid (PFBS)	ng/L	1.7	U		1.7	U	
Perfluorobutyric Acid (PFBA)	ng/L	1.7	UJ	lack of field dup confirmation	0.91	J	lack of field dup confirmation
Perfluorodecanesulfonic acid (PFDS)	ng/L	1.7	U		1.7	U	
Perfluorodecanoic Acid (PFDA)	ng/L	1.7	U		1.7	U	
Perfluorododecanoic Acid (PFDoA)	ng/L	1.7	U		1.7	U	
Perfluoroheptanesulfonic Acid (PFHpS)	ng/L	1.7	U		1.7	U	
Perfluoroheptanoic Acid (PFHpA)	ng/L	1.7	U		1.7	U	
Perfluorohexanesulfonic Acid (PFHxS)	ng/L	1.7	U		1.7	U	
Perfluorohexanoic Acid (PFHxA)	ng/L	1.7	U		1.7	U	
Perfluorononanoic Acid (PFNA)	ng/L	1.7	U		1.7	U	
Perfluorooctanesulfonamide (PFOSA)	ng/L	8.3	U		8.6	U	
Perfluorooctanesulfonic Acid (PFOS)	ng/L	1.7	U		1.7	U	
Perfluorooctanoic Acid (PFOA)	ng/L	1.7	U		1.7	U	
Perfluoropentanoic Acid (PFPeA)	ng/L	1.7	U		1.7	U	
Perfluorotetradecanoic Acid (PFTreA)	ng/L	1.7	U		1.7	U	
Perfluorotridecanoic Acid (PFTriA)	ng/L	1.7	U		1.7	U	
Perfluoroundecanoic Acid (PFUnA)	ng/L	1.7	U		1.7	U	
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	ng/L	17	UJ	low CC standard response	17	UJ	low CC standard response
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	17	U		17	U	
1,4-Dioxane	ug/L	0.19	U		0.19	U	

Job No. 480-162320-1
 Site Name: PAS

Data Summary Form for Emerging Contaminants Samples
 PFAS and 1,4-Dioxane

ddms Project No. 15473131
 Sampling Date 11/5/2019

		M-21-110519 480-162320-1			SWW-5-110519 480-162320-4		
		1			1		
Parameter	Unit						
2-[N-Methylperfluorooctanesulfonamido] acetic acid (NMeFOSAA)	ng/L	16	U		19	U	
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]- (NEtFOSAA)	ng/L	16	U		19	U	
Perfluorobutanesulfonic Acid (PFBS)	ng/L	0.85	NJ	ion ratio outside limits	2.1	NJ	ion ratio outside limits
Perfluorobutyric Acid (PFBA)	ng/L	9.0			27		
Perfluorodecanesulfonic acid (PFDS)	ng/L	1.6	U		1.9	U	
Perfluorodecanoic Acid (PFDA)	ng/L	1.6	U		1.9	U	
Perfluorododecanoic Acid (PFDoA)	ng/L	1.6	U		1.9	U	
Perfluoroheptanesulfonic Acid (PFHpS)	ng/L	1.6	U		1.9	U	
Perfluoroheptanoic Acid (PFHpA)	ng/L	1.8			1.9		
Perfluorohexanesulfonic Acid (PFHxS)	ng/L	2.5			2.5		
Perfluorohexanoic Acid (PFHxA)	ng/L	5.3			4.8		
Perfluorononanoic Acid (PFNA)	ng/L	0.28	J		1.9	U	
Perfluorooctanesulfonamide (PFOSA)	ng/L	8.0	U		9.4	U	
Perfluorooctanesulfonic Acid (PFOS)	ng/L	3.5			6.9	NJ	ion ratio outside limits
Perfluorooctanoic Acid (PFOA)	ng/L	19			6.4		
Perfluoropentanoic Acid (PFPeA)	ng/L	3.5			2.4		
Perfluorotetradecanoic Acid (PFTreA)	ng/L	1.6	U		1.9	U	
Perfluorotridecanoic Acid (PFTriA)	ng/L	1.6	U		1.9	U	
Perfluoroundecanoic Acid (PFUnA)	ng/L	1.6	U		1.9	U	
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	ng/L	16	U		19	UJ	low CC standard response
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	16	U		15	J	
1,4-Dioxane	ug/L	630	J	exceeds calibration range, high LCS %R	1000	J	exceeds calibration range, high LCS %R

II - C

1ST QUARTER REPORT 2019

QUARTERLY PROGRESS REPORT – 1st QUARTER 2020
Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: *Pollution Abatement Services Site*
 Oswego, New York

PERIOD COVERED: January – March (1st Quarter) 2020

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 30,000 gallons of leachate were removed from the Site during the period of January, February, and March 2020. Specific quantities of leachate removed included 10,000 gallons in January, 10,000 gallons in February and 10,000 gallons in March. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of January – March 2020, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on February 11, 2020. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment C-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment C-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. Northern Wetland fence area inaccessible for repairs. No other discrepancies were reported at the time of the inspection.
 - Site entrance and roadways were plowed prior to the pumping events in February and March.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected. No discrepancies were reported at the time of the inspection.
 - Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. No discrepancies were reported at the time of the inspections.

- Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control systems were generally free of rodents and insects, and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof, and wood structure. No other discrepancies were reported at the time of the inspection.
- The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure, and main power distribution panel were inspected. Main discharge pump would not prime. The backup pump was used. No other discrepancies were reported at the time of the inspection..
- On January 7, February 11, and March 3, 2020, OBG performed the monthly pre-pumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment C-2)
- Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. (Attachment C-3)
- During the months of January, February, and March 2020, OBG pumped a combined total of 30,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated. (Attachment C-3)
- Upon completing each monthly leachate discharge the tank suction hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
- The PAS Oswego Site quarterly discharge report for the 1st quarter of 2020 for the City of Oswego was submitted on April 13, 2020 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on April 10, 2020. (Attachment C-4)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER

- The Groundwater Pre-Pumping Well Monitoring Level Form for February 11, 2020 is attached to this report. (Attachment C-1)

- The Site Inspection Checklist for January 7, February 11 and March 3, 2020 are attached to this report. (Attachment C-2)
- The Leachate Disposal Checklist for the January 7, February 11 and March 3, 2020 are attached to this report. (Attachment C-3)
- The PAS Quarterly Discharge reports submitted on April 13, 2020 to the City of Oswego and the report submitted to the City of Auburn on April 10, 2020 are attached to this report. (Attachment C-4)

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**GROUNDWATER ELEVATION
DATA**

O'Brien & Gere Operation (O'Brien & Gere)
 PAS Oswego Site
 Oswego, New York
 Pre-Pumping Well Monitoring Levels

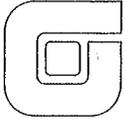
Date - 2-11-2020

Technician - MARTIN KOENIGS

Month - February 2020

Well Number	Riser Elevation	Well Range Verification			Monthly Onsite Field Measurements				NOTES
		Average Well Level	Low Well Level	High Well Level	Well Level (1st) Check	Well Level (2nd) Check	Well Within Range (based on historical well range data) YES NO	Well Level Check (3rd) (If "NO" & well is not within targeted range)	
SWW1	289.33	9.05	7.92	9.74	9.00	9.00	✓		
SWW2	289.37	15.51	14.48	16.08	14.32	14.32		✓	14.32
SWW3	286.50	16.99	16.20	19.94	15.94	15.94		✓	15.94
SWW4	283.60	14.36	11.36	15.70	14.44	14.44	✓		
SWW5	277.02	13.16	12.48	14.04	12.72	12.72	✓		
SWW6	273.06	8.42	7.18	8.90	8.08	8.08	✓		
SWW7	277.93	7.99	7.44	8.30	7.12	7.12		✓	7.12
SWW8	278.24	3.98	3.48	4.30	3.60	3.60	✓		
SWW9	285.55	17.27	16.06	18.72	16.22	16.22	✓		
SWW10	280.43	10.92	8.50	12.53	9.86	9.86	✓		
SWW11	273.50	9.26	8.40	10.16	8.70	8.70	✓		
SWW12	272.82	8.66	7.60	9.20	8.20	8.20	✓		
LCW-1	272.21	8.86	7.70	9.90	8.72	8.72	✓		
LCW-2	274.44	11.10	9.95	12.14	10.46	10.46	✓		
LCW-3	284.36	17.73	17.18	18.34	17.90	17.90	✓		
LCW-4	285.70	18.19	17.30	19.42	16.58	16.58		✓	16.58
OS-1	272.10	9.31	8.16	10.94	9.20	9.20	✓		
OI-1	272.00	11.09	10.05	11.80	10.92	10.92	✓		
OS-3	277.89	13.56	11.10	15.38	13.30	13.30	✓		
OD-3	277.85	13.50	10.95	15.16	13.18	13.18	✓		
LD-3	278.62	4.26	3.86	4.62	4.10	4.10	✓		
LD-4	279.25	10.40	9.32	11.90	10.14	10.14	✓		
LD-5	272.94	8.84	8.08	9.48	8.50	8.50	✓		
LS-6	274.14	9.67	7.86	11.28	9.50	9.50	✓		
LD-6	274.03	10.01	9.40	10.82	9.74	9.74	✓		
LD-8	272.83	7.43	4.92	9.52	7.20	7.20	✓		
LR-2	289.85	12.77	12.34	13.30	12.65	12.65	✓		
LR-3	278.06	7.79	7.28	8.12	7.70	7.70	✓		
LR-6	274.39	10.25	9.54	10.98	9.84	9.84	✓		
LR-8	273.42	9.65	8.50	10.20	9.40	9.40	✓		
M-21	272.32	9.43	8.20	10.44	9.02	9.02	✓		
M-22	273.88	10.13	9.52	10.94	9.88	9.88	✓		
M-23	270.49	12.17	10.78	12.65	10.96	10.96	✓		

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SITE INSPECTION CHECKLIST



Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 1-7-2020

Time 17:45

Field Technician MARTIN KOENIGKE

Weather Conditions 32° overcast

Check (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		none visible
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		Yes
Concrete trough clear and function able	<input checked="" type="checkbox"/>		Yes
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

1-7-2020

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	Yes
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	SHINGLES ON CORNER BLOWN OFF
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

Pumped 10,000 gal Leachate To City of Oswego POTW



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 2-11-2020

Time 8:00

Field Technician MARTIN KOENIGKE

Weather Conditions 34° LIGHT FREEZING RAIN

Check (tasks completed in each event)

Inspection Features	Check <input checked="" type="checkbox"/> (tasks completed in each event)		Remarks (indicate accomplishment of each maintenance task)
	Monthly	Quarterly	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		SNOW COVERED
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		SNOW COVERED
Concrete trough clear and function able	<input checked="" type="checkbox"/>		SNOW COVERED
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

2-11-2020

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	Plowed SNOW
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	Yes
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

PUMPED 10,000 GAL. Leachate To City of Oswego POTW
 Quarterly well Levels TAKEN
 DISCHARGE Pump would NOT PRime used Backup
 TRASH Pump To move WATER



Site Inspection Checklist (v3)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 3-3-2020

Time 17:45

Field Technician MARTIN KOENIGKE

Weather Conditions P-Sunny 39°

Check (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
Land Cap			
Signs of burrowing vermin	X		NONE VISIBLE
Land cap irregularities (note anomaly)	✓		OK
French drainage system clear and function able	✓		SNOW COVERED
Concrete trough clear and function able	✓		SNOW COVERED
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	✓		Yes
Discharge Pump inspected & operational	✓		Yes
Discharge pump oil level verified prior to use.	✓		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	✓		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	✓		ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	✓		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	✓		OK

3-3-2020

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	OK
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	Yes
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

Pumped 10,000 gal. Leachate To City of Oswego POTW

C – 3

**LEACHATE DISPOSAL
CHECKLIST**



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 1-7-2020

Time: 7:45

Field Technician MARTIN KORNECKE

Weather Conditions 32° OVERCAST

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10"	LCW-1	7:50	9:10	43"	125 GPM	10,065
	LCW-2	7:50	9:10			
	LCW-3	7:50	8:15			
	LCW-4	7:50	9:10			
	Total					10,065

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:45	11:45	6.8	46°	1315165	1325165	10,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	83	25 MIN	0	16"			
Sample #1	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 2-11-2020

Time: 8:00

Field Technician MARTIN KOENNECKE

Weather Conditions 34° ^{Light} Freezing Rain

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10.5"	LCW-1	9:50	11:05	44"	136 GPM	
	LCW-2	9:50	11:05			
	LCW-3	9:50	10:10			
	LCW-4	9:50	11:05			
	Total					10,217

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	14:10	16:00	6.8	42°	1325165	1335165	10,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	90	Did not	0	16"			
Sample #	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							

pump would not prime



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 3-3-2020

Time: 7:45

Field Technician MARTIN KOENNECKE

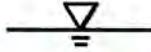
Weather Conditions P-Sunny 39°

Table with 7 columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes sub-header 'Pre-Discharge Well Pumping' and a Total row.

Table with 8 columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes sub-headers 'Monthly Leachate Discharge Pumping (To the City of Oswego)' and 'Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)'.

C – 4

**QUARTERLY POTW
DISCHARGE REPORTS**



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
865-691-5052 phone
865-691-6485 fax

April 10, 2020

Mr. Tim O'Brien
Department of Municipal Utilities
35 Bradley Street
Auburn, New York 13021

Re: 1st Quarter PAS Oswego Monitoring Report 2020

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during January 2020–March 2020. This has been due to the EPA allowance of an alternate disposal method.

- **Cumulative gallons removed for discharge in Auburn 1st Qtr. 2020 - 0**
- **Cumulative gallons removed for discharge in Auburn 2019 - 0**

Since no wastewater was shipped or discharged to Auburn during the 1st quarter of 2020, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

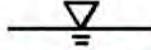
Please contact me at (865) 691-5052, if you have any questions.

Sincerely,
de maximis, inc.

Clay McClarnon

CMC/dsr

cc: PAS Management Committee



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
865-691-5052 phone
865-691-6485 fax

April 10, 2020

Mr. Timothy L. O'Brien
Industrial Pretreatment Coordinator
35 Bradley Street
Auburn, NY 13021

**Re: Industrial Pretreatment Program
Zero Discharge Certification Statement:**

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to March 2020, I certify that for Pollution Abatement Services located in Oswego New York:

1. There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.
2. No discharge of process wastewater has occurred since December 7, 2017.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

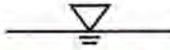
Clay McClarnon
Name

Project Coordinator
Title


Signature

April 10, 2020
Date

865-691-5052
Phone



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865)691-5052
(865)691-9835 FAX

Via electronic mail

April 13, 2020

Mr. John McGrath
Chief Operator
Westside Wastewater Treatment Plant
First Avenue & West Schuyler Streets
Oswego, New York 13126
Labmanager@oswegony.org

**Re: Quarterly Discharge Report – 1st Quarter 2020
Pollution Abatement Services Site – Oswego, New York
City of Oswego Wastewater Discharge Permit 6-2019-20**

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from January 2020 through March 2020.

The PAS Site discharged a total of 30,000 gallons of leachate to the Oswego sewer system during the 1st quarter of 2020.

Discharge to City of Oswego January 2020 – March 2020 30,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely,
de maximis, inc.

Clay McClarnon

Attachments:

cc: Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant
Robert Johnson – City Engineer
PAS Oswego Site Management Committee

TABLE 1 - PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2020)
LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY
(Oswego SIU Wastewater Discharge Permit No.6-2019-20)

Discharge Quarter		2Q 2019		3Q 2019		4Q 2019		1Q 2020	
		Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged
		4/2/19	10,500	7/3/19	20,000	10/8/19	20,000	1/7/20	10,000
		44/6.8		57/6.8		54/6.8		46/6.8	
		5/8/19	20,000	8/6/19	20,000	11/6/19	10,000	2/11/20	10,000
		46/6.8		55/6.8		54/6.8		42/6.8	
		6/4/19	20,000	9/11/19	20,000	12/3/19	10,000	3/3/20	10,000
		50/6.8		60/6.8		52/6.8		42/6.8	
Total Discharged			50,500		60,000		40,000		30,000
Date Sampled*	Permit Limits		4/2/2019			11/6/2019			
Analytes	mg/L		mg/L			mg/L			
Antimony	0.107		ND <0.0025			ND <0.010			
Arsenic	0.358		0.018			0.019			
Beryllium	0.107		ND <0.0010			ND <0.010			
Cadmium	0.43		ND <0.0004			ND <0.010			
Chromium (total)	0.67		ND 0.0072			ND 0.010			
Copper	0.43		0.0214			0.015			
Cyanide	0.69		.0057J			0.23			
Lead	0.19		0.0015			ND <0.010			
Mercury	0.0002		ND <0.0000025			ND <0.0002			
Nickel	0.65		0.318			0.33			
Selenium	0.282		ND <0.0025			ND <0.010			
Silver	0.65		ND <0.0025			ND <0.010			
Thallium	0.073		ND <0.00050			ND <0.020			
Zinc	1		ND <0.025			ND <0.020			
VOC**									
1,1,1 TCA	NA					0.00625			
MeCL	NA					ND <0.0005			
PCE	NA					0.029			
Toluene	NA					0.0674			
TCE	NA					0.0125			
SVOC**	NA					NA			
BOD 5	200		14			11			
TSS	400		37			39			
oil & grease	100								
Phenolics	0.375		ND <0.034						
pH	>5 & <10		6.7			6.8			

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

Analyte values in bold exceed limit

ATTACHMENT I



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 3-3-2020

Time: 7:45

Field Technician MARTIN KOENNECKE

Weather Conditions P-Sunny 39°

Table with 7 columns: Beginning Leachate Hold Tank Elevation (Inches), Pumping Well #, Pump Start Time, Pump Stop Time, Ending Tank Elevation, Flow Rate (est.), Est. Leachate Pumped into Holding Tank (Gallons). Includes sub-header 'Pre-Discharge Well Pumping' and a Total row.

Table with 8 columns: Discharge #, Start Time, Stop Time, pH, Temp, Totalizer Flow Total (Start), Totalizer Flow Total (End), Gallons Discharge. Includes sub-headers 'Monthly Leachate Discharge Pumping (To the City of Oswego)' and 'Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)'.



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 2-11-2020

Time: 8:00

Field Technician MARTIN KOENNECKE

Weather Conditions 34° ^{Light} Freezing Rain

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10.5"	LCW-1	9:50	11:05	44"	136 GPM	
	LCW-2	9:50	11:05			
	LCW-3	9:50	10:10			
	LCW-4	9:50	11:05			
	Total					10,217

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	14:10	16:00	6.8	42°	1325165	1335165	10,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	90	Did not	0	16"			
Sample #	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							

pump would not prime



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 1-7-2020

Time: 7:45

Field Technician MARTIN KORNECKE

Weather Conditions 32° OVERCAST

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10"	LCW-1	7:50	9:10	43"	125 GPM	10,065
	LCW-2	7:50	9:10			
	LCW-3	7:50	8:15			
	LCW-4	7:50	9:10			
	Total					10,065

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:45	11:45	6.8	46°	1315165	1325165	10,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	83	25 MIN	0	16"			
Sample #1	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							

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2ND QUARTER REPORT 2019

QUARTERLY PROGRESS REPORT – 2nd QUARTER 2020
Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: *Pollution Abatement Services Site*
 Oswego, New York

PERIOD COVERED: April – June (2nd Quarter) 2020

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 50,000 gallons of leachate were removed from the Site during the period of April, May and June 2020. Specific quantities of leachate removed included 10,000 gallons in April, 20,000 gallons in May and 20,000 gallons in June. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of April – June 2019, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on May 4, 2020. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment D-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment D-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. Tree had fallen on eastern wetland fence. The tree was removed, and fence repaired as needed. No other discrepancies were reported at the time of the inspection.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected. No discrepancies were reported at the time of the inspection.
 - Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. A hole reported under the shed during the May inspection. Vermin was discovered under the shed during the June inspection.

- Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control systems were generally free of rodents, insects and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof, and wood structure. The door to the tank was weathered and noted. No other discrepancies were reported at the time of the inspection.
- The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure, and main power distribution panel were inspected. No discrepancies were reported at the time of the inspection.
- On April 7, May 6, and June 2, 2020, OBG performed the monthly pre-pumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment D-2)
- Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. (Attachment D-3)
- During the months of April, May and June 2020, OBG pumped a combined total of 50,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated. (Attachment D-3)
- Upon completing each monthly leachate discharge the tank suction hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
- On May 7, 2020, OBG performed the semi-annual groundwater sampling for monitoring wells LR-8, M-21, and leachate collection wells LCW2 and LCW4. Based on the 2019 Annual Report, well OD-3, M-22 and LR-6 were not sampled during this event. Sampling activities for long term monitoring wells were conducted using low-flow sampling protocols described in the Work Plan. Samples were preserved using industry standard methods, and delivered to Life Science Laboratories in East Syracuse, NY for analysis. (Attachment D-4)
- On May 6, 2020, the semiannual discharge sample required under the City of Oswego POTW permit was taken and hand delivered to Life Science Laboratories in East Syracuse, NY for analysis the data was included in the Oswego 2nd POTW Discharge Quarter Report.

- The PAS Oswego Site Quarterly POTW Discharge Report for the 2nd quarter of 2020 for the City of Oswego was submitted on July 28, 2020 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on July 14, 2020. (Attachment D-5)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER

- The Groundwater Pre-Pumping Well Monitoring Level Form for May 4, 2019 is attached to this report. (Attachment D-1)
- The Site Inspection Checklist for April 2, May 8 and June 4, 2019 are attached to this report. (Attachment D-2)
- The Leachate Disposal Checklist for the April 2, May 8 and June 4, 2019 are attached to this report. (Attachment D-3)
- The validated lab report for the Semi-annual Groundwater sampling of LR-8, M-21, , LCW2 and LCW4, performed on May 7, 2019 is attached to this report. (Attachment D-4)
- The PAS Quarterly Discharge Reports submitted on July 21, 2019 to the City of Auburn and the report submitted to the City of Oswego on June 10, 2019 are attached to this report. (Attachment D-5)

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GROUNDWATER ELEVATION DATA

O'Brien & Gere Operation (O'Brien & Gere)
 PAS Oswego Site
 Oswego, New York
 Pre-Pumping Well Monitoring Levels

Date - 5-4-2020

Technician - MARTIN KUENNACHE

Month - May 2020

Well Number	Riser Elevation	Well Range Verification			Monthly Onsite Field Measurements				NOTES
		Average Well Level	Low Well Level	High Well Level	Well Level (1st) Check	Well Level (2nd) Check	Well Within Range (based on historical well range data) YES NO	Well Level Check (3rd) (if "NO" & well is not within targeted range)	
SWW1	289.33	9.21	8.22	10.00	8.98	8.98	✓		
SWW2	289.37	14.94	14.14	15.42	14.40	14.40	✓		
SWW3	286.50	16.53	15.84	17.00	15.84	15.84	✓		
SWW4	283.60	14.62	12.62	15.94	13.15	13.15	✓		
SWW5	277.02	12.73	11.74	13.46	12.36	12.36	✓		
SWW6	273.06	8.53	7.58	9.21	8.00	8.00	✓		
SWW7	277.93	7.48	7.02	7.90	6.78	6.78		✓	6.78
SWW8	278.24	3.96	3.40	4.54	3.68	3.68	✓		
SWW9	285.55	16.38	15.68	17.16	15.96	15.96	✓		
SWW10	280.43	11.06	8.50	12.62	9.40	9.40	✓		
SWW11	273.50	8.65	7.50	9.50	8.22	8.22	✓		
SWW12	272.82	8.56	7.58	9.23	8.08	8.08	✓		
LCW-1	272.21	8.14	7.04	9.12	7.70	7.70	✓		
LCW-2	274.44	10.40	9.27	11.36	9.92	9.92	✓		
LCW-3	284.36	17.68	17.24	18.05	17.95	17.95	✓		
LCW-4	285.70	17.51	16.82	18.56	16.26	16.26		✓	16.26
OS-1	272.10	8.63	6.40	11.40	6.60	6.60	✓		
OI-1	272.00	11.13	10.14	12.28	10.40	10.40	✓		
OS-3	277.89	14.11	11.70	15.30	13.16	13.16	✓		
OD-3	277.85	13.95	11.58	15.12	12.98	12.98	✓		
LD-3	278.62	4.18	3.78	4.64	4.06	4.06	✓		
LD-4	279.25	10.61	8.68	11.79	9.58	9.58	✓		
LD-5	272.94	8.66	7.84	9.42	8.40	8.40	✓		
LS-6	274.14	9.54	7.95	10.74	8.96	8.96	✓		
LD-6	274.03	9.90	9.32	10.65	9.36	9.36	✓		
LD-8	272.83	7.22	6.08	8.30	6.32	6.32	✓		
LR-2	289.85	13.11	12.32	13.42	13.40	13.40	✓		
LR-3	278.06	7.66	7.10	8.36	7.10	7.10	✓		
LR-6	274.39	10.10	9.44	10.66	9.54	9.54	✓		
LR-8	273.42	9.76	9.04	10.35	9.22	9.22	✓		
M-21	272.32	9.42	8.75	10.02	8.66	8.66		✓	8.66
M-22	273.88	10.11	9.38	10.64	9.60	9.60	✓		
M-23	270.49	12.08	11.02	12.88	11.58	11.58	✓		

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SITE INSPECTION CHECKLIST



Site Inspection Checklist (v3)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 4-17-20

Time 7:40

Field Technician MARTIN KOENIG

Weather Conditions SUNNY 45°

Check (tasks completed in each event)

Inspection Features	Check <input checked="" type="checkbox"/> (tasks completed in each event)		Remarks (indicate accomplishment of each maintenance task)
	Monthly	Quarterly	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		NONE VISABLE
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		Yes
Concrete trough clear and function able	<input checked="" type="checkbox"/>		Yes
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		Yes ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

4-7-20

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	work in progress
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	OK
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	OK
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

Pumped 10,000 GAL Leachate To City of Oswego POTW

CHANGED OUT FIRE EXTINGUISHER WITH CURRENT INSPECTED EXTINGUISHER



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 5-6-20

Time 7:00

Field Technician MARTIN KEARCKE

Weather Conditions P-Sunny 35°

Check (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
	<input type="checkbox"/>	<input type="checkbox"/>	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		hole under shed
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		OK
French drainage system clear and function able	<input checked="" type="checkbox"/>		Yes
Concrete trough clear and function able	<input checked="" type="checkbox"/>		Yes
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		Yes
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		Yes
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		OK

5-6-20

Leachate holding tank metal roof inspected for structural integrity	✓	OK
Leachate tank access doors locked (post pump out)	✓	Yes
Pump power panel(s) secured	✓	Yes
Monitoring Wells (MW)		
Locks installed	✓	Yes
MW's marked & identifiable	✓	OK
General Site Condition		
Trees & brush cleared off security fence	✓	work in Progress see REMARKS
Perimeter security fence intact & free of damage	✓	OK
Site access driveway inspected & free on snow & damage	✓	OK
Security access gates / Padlock & chain serviceable	✓	Yes
Site gate signage intact	✓	Yes
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	SHingles Blown off Back corner
Fire extinguisher serviceable, inspected, and inspection recorded	✓	Yes
Spill control material inspected & adequate	✓	Yes
PPE available and utilized as required	✓	Yes
Emergency contact information posted within shed	✓	Yes

Additional remarks (use separate sheet is required)

Semi Annual well samples, Semi Annual Leachate samples TAKEN, SPLIT samples w/ Oswego John Magrath, Pumped 20,000 gal Leachate To Oswego POTW, TREE DOWN ACROSS Fence on Union Hall Property WAS CUT UP AND REMOVED



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego)
Oswego, New York

Date 6-2-2020

Time 7:30

Field Technician MARTIN Koenneke

Weather Conditions OVERCAST 60°

Check (tasks completed in each event)

Inspection Features	Check <input checked="" type="checkbox"/> (tasks completed in each event)		Remarks (indicate accomplishment of each maintenance task)
	Monthly	Quarterly	
Land Cap			
Signs of burrowing vermin	<input checked="" type="checkbox"/>		<u>UNDER SHED</u>
Land cap irregularities (note anomaly)	<input checked="" type="checkbox"/>		<u>OK</u>
French drainage system clear and function able	<input checked="" type="checkbox"/>		<u>Yes</u>
Concrete trough clear and function able	<input checked="" type="checkbox"/>		<u>Yes</u>
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	<input checked="" type="checkbox"/>		<u>Yes</u>
Discharge Pump inspected & operational	<input checked="" type="checkbox"/>		<u>Yes</u>
Discharge pump oil level verified prior to use.	<input checked="" type="checkbox"/>		<u>Yes</u>
Discharge pump drained of residual water (drained upon completion of monthly discharge)	<input checked="" type="checkbox"/>		<u>Yes</u>
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	<input checked="" type="checkbox"/>		<u>TURNED OFF</u>
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	<input checked="" type="checkbox"/>		<u>Yes</u>
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	<input checked="" type="checkbox"/>		<u>Yes</u>

6-2-2020

Leachate holding tank metal roof inspected for structural integrity	✓	✓	YES
Leachate tank access doors locked (post pump out)	✓	✓	YES , NEEDS TO BE REPLACED ROTARY
Pump power panel(s) secured	✓	✓	YES
Monitoring Wells (MW)			
Locks installed	✓	✓	YES
MW's marked & identifiable	✓	✓	OK
General Site Condition			
Trees & brush cleared off security fence	✓	✓	WORK IN PROGRESS
Perimeter security fence intact & free of damage	✓	✓	OK
Site access driveway inspected & free on snow & damage	✓	✓	OK
Security access gates / Padlock & chain serviceable	✓	✓	YES
Site gate signage intact	✓	✓	YES
Interior & exterior of utility storage shed inspected for damage & secure with locks	✓	✓	OK
Fire extinguisher serviceable, inspected, and inspection recorded	✓	✓	YES
Spill control material inspected & adequate	✓	✓	YES
PPE available and utilized as required	✓	✓	YES
Emergency contact information posted within shed	✓	✓	YES

Additional remarks (use separate sheet is required)

PUMPED 20,000 GALLONS LEACHATE TO OSWEGO POTW
 WEED WHACKED AROUND SHED AND TANK FRONT

D – 3

**LEACHATE DISPOSAL
CHECKLIST**

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 4-7-2020

Time: 7:40

Field Technician MARTIN KOENNECKE

Weather Conditions Sunny 45°

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10.5"	LCW-1	7:45	9:00	43.5"	1346gpm	10,065
	LCW-2	7:45	9:00			
	LCW-3	7:45	8:10			
	LCW-4	7:45	9:00			
Total						<u>10,065</u>

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:15	11:15	6.8	46°	1345165	1355165	10,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	83	20 min	0	16"			
Sample #1	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 5-6-20

Time: 7:00

Field Technician MARTIN KOENNECKE

Weather Conditions P. Sunny 35°

Beginning Leachate Hold Tank Elevation (Inches)	<i>Pre-Discharge Well Pumping</i>					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
11"	LCW-1	7:10	10:30			
	LCW-2	7:10	10:30			
	LCW-3	7:10	7:50			
	LCW-4	7:10	8:45			
<i>65.5" x 305 = 20610 After Pumpout - 13"</i>						Total 20,610

Discharge #	<i>Monthly Leachate Discharge Pumping (To the City of Oswego)</i>						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	8:40	12:35	6.8	44°	1355165	1375165	20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	85	20min	0	16"			
Sample #1	<i>Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)</i>						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1	5-6-20	sample point	composite	11:30	6.8	44°	

*Leachate Effluent sample SPLIT with Oswego POTW
John M.*



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 6-2-2020

Time: 7:30

Field Technician MARTIN Keanwecke

Weather Conditions overcast 60°

Beginning Leachate Hold Tank Elevation (Inches)	<i>Pre-Discharge Well Pumping</i>					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
13'	LCW-1	7:45	10:50	63.5" x 205'		19,390
	LCW-2	7:45	10:50			
	LCW-3	7:45	8:15			
	LCW-4	7:45	9:30	11" After pump cut		
				Total		19,390

Discharge #	<i>Monthly Leachate Discharge Pumping (To the City of Oswego)</i>						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	8:55	12:50	6.8	50°	1375165	1395165	20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	85	20 min	0	16"			
Sample #1	<i>Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)</i>						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	

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**SEMIANNUAL LEACHATE
AND GROUNDWATER MONITORING DATA**

DATA VALIDATION

FOR

**WATER MONITORING
PAS Oswego
OSWEGO, NEW YORK**

**ORGANIC ANALYSIS DATA
Volatiles in Water
Laboratory Job No.
1906563**

Analyses Performed

By:

**Life Sciences Laboratory
East Syracuse, NY**

For:

**de maximis, Inc.
Knoxville, TN 37919**

Data Validation By:

**ddms, Inc.
St. Paul, Minnesota 55108**

July 2, 2019

**1547-3131/psn/das
PAS\1906563_voa**

EXECUTIVE SUMMARY

Validation of the volatile organics analysis data prepared by Life Sciences Laboratories, Inc. for five water samples, one equipment blank, and one trip blank supporting the PAS Oswego (Site) Semi Annual Well Sampling event has been completed by de maximis Data Management Solutions, Inc. (ddms). The data were reported by the laboratory under Laboratory Job No. 1906563. The following samples were reported:

Equipment Blank LCW-2	M-21 LCW-4	LR-8 QC Trip Blanks	X-1
--------------------------	---------------	------------------------	-----

Based on the validation effort, the following qualifiers were applied:

- Results for methylene chloride were qualified as estimated (J-, UJ).
- Results for 1,2,4-trichlorobenzene, acetone, methylene chloride, and chloroform were qualified not detected (U).
- Results for 2-butanone, acetone, and bromomethane were qualified as estimated (J-, UJ).

All other results were determined to be valid as reported. Details of the validation findings and conclusions based on review of the results for each quality control requirement are provided in the remaining sections of this report.

1.0 Introduction

This report presents the findings of the data validation assessment performed on the analyses of water samples collected on May 7, 2019, for the PAS Oswego semiannual well sampling event. Samples submitted to the laboratory in the sample delivery group 1906563 were reviewed in this report to identify quality issues which could affect the use of the sample data for decision-making purposes.

Analyses were performed in accordance with USEPA SW-846 Method 8260C. The laboratory provided a "CLP-type" data package for review.

The data validation assessment was performed in accordance with USEPA Region II Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Revision 4 (September 2014) as well as ddms' Standard Operating Procedure: Validation and Review of Volatile Organic Data; ECS-SOP-003. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytical methodology, professional judgement was applied.

The data validation process is intended to evaluate data on a technical basis rather than a contract compliance basis for chemical analyses conducted under the referenced method. An initial assumption is that the data package is presented in accordance with the CLP requirements (or "CLP-like," as in this case). It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate and sufficient quality review prior to submission for validation.

During the validation process, laboratory data are verified against all available supporting documentation. Based on the findings of the validation, qualifier codes may have been added by the data validator. Validated results are, therefore, either qualified or unqualified. Unqualified results mean that the reported values may be used without reservation. Final validated results are annotated with the following codes as defined by the Region II Guidelines:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

These codes are recorded on the Data Summary Forms contained in Attachment A of this validation report to indicate qualifications placed on the results based on the data review.

The data user is also cautioned that the validation effort is based on the raw data printouts as provided by the laboratory. Software manipulation cannot be routinely detected during validation; unless otherwise stated in the report, these kinds of issues are outside the scope of this review.

2.0 Volatile Organic Compounds

The tables below document the elements reviewed for each parameter. Only those quality excursions resulting in qualified data are presented below. Quality control excursions having no impact to sample results are not discussed.

Review Element	Acceptable?
Preservation and Technical Holding Times	Y
Calibration (Initial Calibration [IC], IC Verification, Continuing Calibration)	N
Blanks	N
GC/MS Instrument Tunes	Y
Surrogates	Y
Laboratory Control Samples (LCS)	Y
Field Duplicates*	Y
Matrix Spike (MS) and Matrix Spike Duplicate (MSD)	N
Quantitation	Y
Compound Identification	Y
Documentation (Completeness and Compliance)	Y

* Field duplicates M-21/X-1

Y=yes

N=no

2.1 Initial Calibration

Initial calibration target analyte percent relative standard deviations (% RSDs) were within Quality Control (QC) limits (20 % RSD) except for bromomethane and methylene chloride. In each case, a quadratic equation was used to describe the curve. Correlation coefficients were acceptable for both compounds (>0.990). No data were qualified on this basis.

2.2 Continuing Calibration

Continuing calibration (CC) target analyte recoveries were acceptable for all compounds except methylene chloride (-22.2%D). Results for methylene chloride in all samples were qualified as estimated (J-, UJ) due to the loss in sensitivity from the IC.

2.3 Blanks

Contamination was reported in the equipment blank, trip blank, and method blank as shown in the table below. When the concentration in the sample is less than ten times for acetone and methylene chloride and five times for 1,2,4-trichlorobenzene and chloroform the maximum amount detected in the associated blanks, the sample concentration is qualified as not detected (U) at the RL or the reported concentration, whichever is greater. The table below summarizes the amount detected in the each blank and the samples affected.

Compound	MB (ug/L)	EB (ug/L)	TB (ug/L)	Samples Affected
1,2,4-Trichlorobenzene	0.20	0.14	0.10	MW-21 5/7/19 X-1 5/7/19
Acetone	1.43	1.46	1.92	LR-8 5/7/19 LCW-2 5/7/19
Chloroform	0.14	0.18	0.47	LCW-2 5/7/19
Methylene chloride	0.45	2 U	2 U	LCW-2 5/7/19

2.4 MS /MSD

MS / MSD analyses were performed on LR-8. Percent recoveries were outside of allowable criteria (70-130%R; 30% RPD) as shown in the table below. When the recovery was below criteria, associated samples were qualified as estimated (J-, UJ), with the potential for low bias.

Analyte	MS/MSD Recovery (%)	RPD (%)	Samples Affected	Qualifiers Applied
Acetone	40/40	a	All field samples	J-, UJ
2-Butanone	63/64	a	All field samples	UJ
Bromomethane	a/69	a	All field samples	J-, UJ

a = acceptable

3.0 Summary

Based on a review of the data provided, the results are valid as reported with the following exceptions:

- Results for methylene chloride in all samples were qualified as estimated (J-, UJ) due to the loss in sensitivity from the IC.
- Results for 1,2,4-trichlorobenzene, acetone, methylene chloride, and chloroform were qualified not detected (U) as summarized in the table in Section 2.3 due to blank contamination.
- Results for 2-butanone, acetone, and bromomethane were qualified as estimated (J-, UJ) as summarized in the table in Section 2.4 due to MS/MSD excursions.

ATTACHMENT A

**DATA SUMMARY FORMS
Laboratory Job No. 1906563
Volatiles in Water**

Data Summary Form for Groundwater Samples

Site Name: PAS
Job No. 1906563

SW-846 8260
(ug/L)

ddms Project Project No: 15473131
Sample Date Range: 4/30/2019 - 5/7/2019

Field Sample ID Lab Sample ID Dilution Factor	Equipment Blank 5/7/19 1906563-001A		LCW-2 5/7/19 1906563-004A		LCW-4 5/7/19 1906563-005A	
	1		5		20	
Parameter						
1,1,1-Trichloroethane	0.10	U	6.10		4.00	J
1,1,2,2-Tetrachloroethane	0.10	U	3.15		2.00	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.10	U	0.75	J	2.00	U
1,1,2-Trichloroethane	0.16	U	0.80	U	3.20	U
1,1-Dichloroethane	0.10	U	13.4		68.2	
1,1-Dichloroethene	0.16	U	0.80	U	3.20	U
1,2,4-Trichlorobenzene	0.14	J	0.50	U	2.00	U
1,2-Dibromo-3-chloropropane	1.00	U	5.00	U	20.0	U
1,2-Dibromoethane	0.16	U	0.80	U	3.20	U
1,2-Dichlorobenzene	0.10	U	2.10	J	59.4	
1,2-Dichloroethane	0.16	U	0.80	U	3.20	U
1,2-Dichloropropane	0.16	U	0.80	U	3.20	U
1,3-Dichlorobenzene	0.10	U	0.50	U	2.00	U
1,4-Dichlorobenzene	0.16	U	0.80	U	7.00	J
2-Hexanone	1.00	U	5.00	U	20.0	U
4-Methyl-2-pentanone	1.00	U	5.00	U	20.0	U
Acetone	1.46	J	5.00	UJ	20.0	UJ
Benzene	0.10	U	166		298	
Bromodichloromethane	0.10	U	0.50	U	2.00	U
Bromoform	0.33	U	1.65	U	6.60	U
Bromomethane	0.33	U	1.65	UJ	6.60	UJ
Carbon Disulfide	0.11	U	0.55	U	2.20	U
Carbon Tetrachloride	0.10	U	0.50	U	2.00	U
Chlorobenzene	0.10	U	38.1		440	
Chloroethane	0.33	U	4.05	J	32.0	
Chloroform	0.18	J	0.50	U	3.20	J
Chloromethane	0.33	U	1.65	U	6.60	U
cis-1,2-Dichloroethene	0.10	U	35.6		287	
cis-1,3-Dichloropropene	0.16	U	0.80	U	3.20	U
Cyclohexane	0.10	U	0.55	J	6.60	J
Cyclohexane, methyl-	0.10	U	0.50	U	2.80	J
Dibromochloromethane	0.10	U	0.50	U	2.00	U
Dichlorodifluoromethane	0.10	U	0.50	U	2.00	U
Ethylbenzene	0.10	U	7.85		824	
Isopropylbenzene	0.10	U	2.25	J	4.80	J
Methyl Acetate	1.00	U	5.00	U	20.0	U
Methyl Ethyl Ketone	1.00	U	5.00	UJ	20.0	UJ
Methyl tert-butyl ether	0.16	U	0.80	U	3.20	U
Methylene Chloride	0.16	UJ	0.80	UJ	3.20	UJ
Styrene	0.10	U	0.50	U	2.00	U
Tetrachloroethene	0.10	U	59.0		2.00	U
Toluene	0.10	U	2.05	J	266	
trans-1,2-Dichloroethene	0.10	U	0.50	U	2.20	J
trans-1,3-Dichloropropene	0.16	U	0.80	U	3.20	U
Trichloroethene	0.10	U	16.0		2.00	U
Trichlorofluoromethane	0.10	U	0.50	U	2.00	U
Vinyl Chloride	0.33	U	7.20		107	
Xylenes, Total	0.30	U	13.6		1900	

Data Summary Form for Groundwater Samples

Site Name: PAS
Job No. 1906563SW-846 8260
(ug/L)ddms Project Project No: 15473131
Sample Date Range: 4/30/2019 - 5/7/2019

Field Sample ID Lab Sample ID Dilution Factor	LR-8 5/7/19 1906563-003A		MW-21 5/7/19 1906563-002A		QC Trip Blank 5/7/19 1906563-007A	
	1		1		1	
Parameter						
1,1,1-Trichloroethane	0.10	U	0.10	U	0.10	U
1,1,2,2-Tetrachloroethane	0.10	U	0.10	U	0.10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.10	U	0.10	U	0.10	U
1,1,2-Trichloroethane	0.16	U	0.16	U	0.16	U
1,1-Dichloroethane	0.10	U	0.10	U	0.10	U
1,1-Dichloroethene	0.16	U	0.16	U	0.16	U
1,2,4-Trichlorobenzene	0.10	U	0.10	U	0.10	J
1,2-Dibromo-3-chloropropane	1.00	U	1.00	U	1.00	U
1,2-Dibromoethane	0.16	U	0.16	U	0.16	U
1,2-Dichlorobenzene	0.42	J	0.42	J	0.10	U
1,2-Dichloroethane	0.16	U	0.16	U	0.16	U
1,2-Dichloropropane	0.16	U	0.16	U	0.16	U
1,3-Dichlorobenzene	0.15	J	0.10	U	0.10	U
1,4-Dichlorobenzene	0.69		0.27	J	0.16	U
2-Hexanone	1.00	U	1.00	U	1.00	U
4-Methyl-2-pentanone	1.00	U	1.00	U	1.00	U
Acetone	1.00	UJ	1.00	UJ	1.92	J
Benzene	0.35	J	0.16	J	0.10	U
Bromodichloromethane	0.10	U	0.10	U	0.10	U
Bromoform	0.33	U	0.33	U	0.33	U
Bromomethane	0.33	UJ	0.33	UJ	0.33	U
Carbon Disulfide	0.11	U	0.11	U	0.11	U
Carbon Tetrachloride	0.10	U	0.10	U	0.10	U
Chlorobenzene	11.1		4.19		0.10	U
Chloroethane	4.55		1.99		0.33	U
Chloroform	0.10	U	0.10	U	0.47	J
Chloromethane	0.33	U	0.33	U	0.33	U
cis-1,2-Dichloroethene	0.10	U	0.10	U	0.10	U
cis-1,3-Dichloropropene	0.16	U	0.16	U	0.16	U
Cyclohexane	2.30		1.32		0.10	U
Cyclohexane, methyl-	0.23	J	0.16	J	0.10	U
Dibromochloromethane	0.10	U	0.10	U	0.10	U
Dichlorodifluoromethane	0.10	U	0.10	U	0.10	U
Ethylbenzene	0.10	U	0.10	U	0.10	U
Isopropylbenzene	0.47	J	0.36	J	0.10	U
Methyl Acetate	1.00	U	1.00	U	1.00	U
Methyl Ethyl Ketone	1.00	UJ	1.00	UJ	1.00	U
Methyl tert-butyl ether	0.16	U	0.16	U	0.16	U
Methylene Chloride	0.16	UJ	0.16	UJ	0.16	UJ
Styrene	0.10	U	0.10	U	0.10	U
Tetrachloroethene	0.10	U	0.10	U	0.10	U
Toluene	0.26	J	0.19	J	0.10	U
trans-1,2-Dichloroethene	0.10	U	0.10	U	0.10	U
trans-1,3-Dichloropropene	0.16	U	0.16	U	0.16	U
Trichloroethene	0.10	U	0.10	U	0.10	U
Trichlorofluoromethane	0.10	U	0.10	U	0.10	U
Vinyl Chloride	0.33	U	0.33	U	0.33	U
Xylenes, Total	0.38	J	0.30	U	0.30	U

Data Summary Form for Groundwater Samples

Site Name: PAS
Job No. 1906563

SW-846 8260
(ug/L)

ddms Project Project No: 15473131
Sample Date Range: 4/30/2019 - 5/7/2019

Field Sample ID	X-1 5/7/19	
Lab Sample ID	1906563-006A	
Dilution Factor	1	
Parameter		
1,1,1-Trichloroethane	0.10	U
1,1,2,2-Tetrachloroethane	0.10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.10	U
1,1,2-Trichloroethane	0.16	U
1,1-Dichloroethane	0.10	U
1,1-Dichloroethene	0.16	U
1,2,4-Trichlorobenzene	0.10	U
1,2-Dibromo-3-chloropropane	1.00	U
1,2-Dibromoethane	0.16	U
1,2-Dichlorobenzene	0.49	J
1,2-Dichloroethane	0.16	U
1,2-Dichloropropane	0.16	U
1,3-Dichlorobenzene	0.10	U
1,4-Dichlorobenzene	0.33	J
2-Hexanone	1.00	U
4-Methyl-2-pentanone	1.00	U
Acetone	1.00	UJ
Benzene	0.18	J
Bromodichloromethane	0.10	U
Bromoform	0.33	U
Bromomethane	0.33	UJ
Carbon Disulfide	0.11	U
Carbon Tetrachloride	0.10	U
Chlorobenzene	4.62	
Chloroethane	1.97	
Chloroform	0.10	U
Chloromethane	0.33	U
cis-1,2-Dichloroethene	0.10	U
cis-1,3-Dichloropropene	0.16	U
Cyclohexane	1.42	
Cyclohexane, methyl-	0.18	J
Dibromochloromethane	0.10	U
Dichlorodifluoromethane	0.10	U
Ethylbenzene	0.10	U
Isopropylbenzene	0.41	J
Methyl Acetate	1.00	U
Methyl Ethyl Ketone	1.00	UJ
Methyl tert-butyl ether	0.16	U
Methylene Chloride	0.16	UJ
Styrene	0.10	U
Tetrachloroethene	0.10	U
Toluene	0.22	J
trans-1,2-Dichloroethene	0.10	U
trans-1,3-Dichloropropene	0.16	U
Trichloroethene	0.10	U
Trichlorofluoromethane	0.10	U
Vinyl Chloride	0.33	U
Xylenes, Total	0.30	U

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**QUARTERLY POTW
DISCHARGE REPORTS**



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
865-691-5052 phone
865-691-6485 fax

July 14, 2020

Mr. Tim O'Brien
Department of Municipal Utilities
35 Bradley Street
Auburn, New York 13021

Re: 2nd Quarter PAS Oswego Monitoring Report 2020

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during April 2020– June 2020. This has been due to the EPA allowance of an alternate disposal method.

- **Cumulative gallons removed for discharge in Auburn 2nd Qtr. 2020 - 0**
- **Cumulative gallons removed for discharge in Auburn 2020 - 0**

Since no wastewater was shipped or discharged to Auburn during the 1st quarter of 2020, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

Please contact me at (865) 691-5052, if you have any questions.

Sincerely,
de maximis, inc.

Clay McClarnon

CMC/dsr

cc: PAS Management Committee



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
865-691-5052 phone
865-691-6485 fax

July 14, 2020

Mr. Timothy L. O'Brien
Industrial Pretreatment Coordinator
35 Bradley Street
Auburn, NY 13021

**Re: Industrial Pretreatment Program
Zero Discharge Certification Statement:**

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to June 2020, I certify that for Pollution Abatement Services located in Oswego New York:

1. There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.
2. No discharge of process wastewater has occurred since December 7, 2017.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Clay McClarnon
Name

Project Coordinator
Title


Signature

July 14, 2020
Date

865-691-5052
Phone



de maximis, inc.

450 Montbrook Lane
Knoxville, TN 37919
(865) 691-5052
(865) 691-9835 FAX

Via electronic mail

July 20, 2020

Mr. John McGrath
Chief Operator
Westside Wastewater Treatment Plant
First Avenue & West Schuyler Streets
Oswego, New York 13126
Labmanager@oswegony.org

**Re: Quarterly Discharge Report – 2nd Quarter 2020
Pollution Abatement Services Site – Oswego, New York
City of Oswego Wastewater Discharge Permit 6-2019-20**

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from April 2020 through June 2020.

The PAS Site discharged a total of 50,000 gallons of leachate to the Oswego sewer system during the 2nd quarter of 2020.

Discharge to City of Oswego April 2020 – June 2020 50,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely,
de maximis, inc.

JLR FOR

Clay McClarnon

Attachments:

cc: Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant
Robert Johnson – City Engineer
PAS Oswego Site Management Committee

**TABLE 1 - PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2020)
LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY
(Oswego SIU Wastewater Discharge Permit No.6-2019-20)**

Discharge Quarter		3Q 2019		4Q 2019		1Q 2020		2Q 2020	
		Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged
		7/3/19	20,000	10/8/19	20,000	1/7/20	10,000	4/7/20	10,000
		57/6.8		54/6.8		46/6.8		46/6.8	
		8/6/19	20,000	11/6/19	10,000	2/11/20	10,000	5/6/20	20,000
		55/6.8		54/6.8		42/6.8		44/6.8	
		9/11/19	20,000	12/3/19	10,000	3/3/20	10,000	6/2/20	20,000
		60/6.8		52/6.8		42/6.8		50/6.8	
Total Discharged			60,000		40,000		30,000		50,000
Date Sampled*	Permit Limits			11/6/2019					5/6/2020
Analytes	mg/L			mg/L					mg/L
Antimony	0.107			ND <0.010					ND <0.001
Arsenic	0.358			0.019					0.016
Beryllium	0.107			ND <0.010					ND <0.010
Cadmium	0.43			ND <0.010					ND <0.010
Chromium (total)	0.67			ND <0.010					ND <0.010
Copper	0.43			0.015					0.027
Cyanide	0.69			0.23					ND <0.010
Lead	0.19			ND <0.010					ND <0.010
Mercury	0.0002			ND <0.0002					ND <0.0002
Nickel	0.65			0.33					0.28
Selenium	0.282			ND <0.010					ND <0.010
Silver	0.65			ND <0.010					ND <0.010
Thallium	0.073			ND <0.020					ND <0.020
Zinc	1			ND <0.020					ND <0.020
VOC**									
1,1,1 TCA	NA			0.00625					0.00454
MeCL	NA			ND <0.0005					ND <0.0005
PCE	NA			0.029					0.0314
Toluene	NA			0.0674					0.0613
TCE	NA			0.0125					0.0117
SVOC**	NA			NA					NA
BOD 5	200			11					12
TSS	400			39					39
oil & grease	100								5.5
Phenolics	0.375								0.001
pH	>5 & <10			6.8					6.8

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

Analyte values in bold exceed limit

ATTACHMENT I



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 4-7-2020

Time: 7:40

Field Technician MARTIN KOENIGKE

Weather Conditions Sunny 45°

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10.5"	LCW-1	7:45	9:00	43.5"	134 (GPM)	10,065
	LCW-2	7:45	9:00			
	LCW-3	7:45	8:10			
	LCW-4	7:45	9:00			
Total						<u>10,065</u>

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:15	11:15	6.8	46°	1345165	1355165	10,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	83	20 min	0	16"			
Sample #1	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 5-6-20

Time: 7:00

Field Technician MARTIN KOENNECKE

Weather Conditions P Sunny 35°

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
11"	LCW-1	7:10	10:30			
	LCW-2	7:10	10:30			
	LCW-3	7:10	7:50			
	LCW-4	7:10	8:45			
Total						20,610

65.5" x 305 = 20610
AFTER PUMP OUT - 13"

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	8:40	12:35	6.8	44°	1355165	1375165	20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	85	20min	0	16"			
	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1	5-6-20	sample point	composite	11:30	6.8	44°	

Leachate Effluent sample SPLIT with Oswego POTW
John M.

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego)
Oswego, NY

Date: 6-2-2020

Time: 17:30

Field Technician MARTIN Koennecke

Weather Conditions Overcast 60°

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping					
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
13'	LCW-1	7:45	10:50	63.5" x 30.5"		19,390
	LCW-2	7:45	10:50			
	LCW-3	7:45	8:15			
	LCW-4	7:45	9:30	11" After pump out		
					Total	19,390

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)						
	Start Time	Stop Time	pH	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	8:55	12:50	6.8	50°	1375165	1395165	20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	85	20 min	0	16"			
Sample #1	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)						
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature	
Sample #1							

ATTACHMENT II

Life Science Laboratories, Inc.

5854 Butternut Drive
East Syracuse, NY 13057

(315) 445-1900

Tuesday, June 02, 2020

Mark Byrne
O'Brien & Gere Operations, LLC.
333 W. Washington St.
PO Box 4873
Liverpool, NY 13221-4873

TEL: 315-437-6100

Project: PAS OSWEGO, SEMIANNUAL PERMIT DISCHARGE

RE: Analytical Results

Order No.: 2006303

Dear Mark Byrne:

Life Science Laboratories, Inc. received 3 sample(s) on 5/6/2020 for the analyses presented in the following report. Sample results relate only to the samples as received by the laboratory. The low level mercury analysis by EPA 1631 was sent out to ELAP #11777 for analysis.

Very truly yours,
Life Science Laboratories, Inc.



David J Prichard
Project Manager



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge

Lab ID: 2006303-001A
Client Sample ID: Tank Effluent Leachate, 5/6/20

Location:

W Order: 2006303

Collection Date: 05/06/20 11:30

Matrix: WATER

Date Received: 05/06/20 14:15

Inst. ID: MSN_76

Sample Size: NA

PrepDate:

ColumnID: Rtx-VMS

%Moisture:

BatchNo: R33966

Revision: 05/28/20 13:49

TestCode: 624W

FileID: 1-SAMP-

Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS			EPA 624			
1,1,1-Trichloroethane	4.54		1.00	µg/L	1	05/20/20
Methylene chloride	ND		1.00	µg/L	1	05/20/20
Tetrachloroethene	31.4		1.00	µg/L	1	05/20/20
Toluene	61.3		1.00	µg/L	1	05/20/20
Trichloroethene	11.7		1.00	µg/L	1	05/20/20
Surr: 1,2-Dichloroethane-d4	100		75-130	%REC	1	05/20/20
Surr: 4-Bromofluorobenzene	101		75-125	%REC	1	05/20/20
Surr: Toluene-d8	85		75-125	%REC	1	05/20/20

Qualifiers:	* Value may exceed the Acceptable Level	B Analyte detected in the associated Method Blank
	E Value exceeds the instrument calibration range	H Holding times for preparation or analysis exceeded
	J Analyte detected below the PQL	ND Not Detected at the Practical Quantitation Limit (PQL)
	P Prim./Conf. column %D or RPD exceeds limit	S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge

Lab ID: 2006303-001B
Client Sample ID: Tank Effluent Leachate, 5/6/20

Location:

W Order: 2006303

Collection Date: 05/06/20 11:30

Matrix: WATER

Date Received: 05/06/20 14:15

Inst. ID: MS06_40

Sample Size: 1 mL

PrepDate: 05/11/20 0:00

ColumnID: DB-5MS

%Moisture:

BatchNo: R33977

Revision: 05/28/20 13:14

TestCode 625W

FileID: 1-SAMP-

Col Type:

Analyte	ResultQual	PQL	Units	DF	Date Analyzed
SEMI-VOLATILE ORGANICS COMPOUNDS BY GC/MS			EPA 625		
Phenol	ND	10	µg/L	1	05/21/20
Surr: 2,4,6-Tribromophenol	104	46-149	%REC	1	05/21/20
Surr: 2-Fluorophenol	49	26-130	%REC	1	05/21/20
Surr: Phenol-d5	29	21-134	%REC	1	05/21/20

Qualifiers:

- * Value may exceed the Acceptable Level
- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Practical Quantitation Limit (PQL)
- S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC. **Lab ID:** 2006303-001C
Project: PAS Oswego, Semiannual Permit Discharge **Client Sample ID:** Tank Effluent Leachate, 5/6/20
Location:
W Order: 2006303 **Collection Date:** 05/06/20 11:30
Matrix: WATER **Date Received:** 05/06/20 14:15
Inst. ID: FIMS 100 **Sample Size:** 40 mL **PrepDate:** 05/12/20 11:15
ColumnID: **%Moisture:** **BatchNo:** 27014/R33952
Revision: 06/01/20 12:59 **TestCode** HG245W **FileID:** 1-SAMP-
Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
MERCURY				EPA 245.1, Rev. 3.0 (1994)		(EPA 245.1, REV. 3.0 (1994))
Mercury	ND		0.00020	mg/L	1	05/13/20 14:44

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
E Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge
Location:
W Order: 2006303
Matrix: WATER
Inst. ID: ICAP 61E **Sample Size:** 50 mL
ColumnID: **%Moisture:**
Revision: 05/15/20 17:06 **TestCode** 200.7_NPW
Col Type:

Lab ID: 2006303-001C
Client Sample ID: Tank Effluent Leachate, 5/6/20
Collection Date: 05/06/20 11:30
Date Received: 05/06/20 14:15
PrepDate: 05/07/20 0:00
BatchNo: 27000/R33941
FileID: 1-SAMP-2465

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
TOTAL METALS BY ICP				EPA		(EPA 200.2)
				200.7, Rev. 4.4 (1994)		
Antimony	ND		0.010	mg/L	1	05/11/20 12:38
Arsenic	0.016		0.010	mg/L	1	05/11/20 12:38
Barium	0.40		0.10	mg/L	1	05/11/20 12:38
Beryllium	ND		0.010	mg/L	1	05/11/20 12:38
Cadmium	ND		0.010	mg/L	1	05/11/20 12:38
Chromium	ND		0.010	mg/L	1	05/11/20 12:38
Copper	0.027		0.010	mg/L	1	05/11/20 12:38
Iron	17		0.050	mg/L	1	05/11/20 12:38
Lead	ND		0.010	mg/L	1	05/11/20 12:38
Nickel	0.28		0.010	mg/L	1	05/11/20 12:38
Selenium	ND		0.010	mg/L	1	05/11/20 12:38
Silver	ND		0.010	mg/L	1	05/11/20 12:38
Thallium	ND		0.020	mg/L	1	05/11/20 12:38
Zinc	ND		0.020	mg/L	1	05/11/20 12:38

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
 E Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
 J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
 P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC. **Lab ID:** 2006303-001D
Project: PAS Oswego, Semiannual Permit Discharge **Client Sample ID:** Tank Effluent Leachate, 5/6/20
Location:
W Order: 2006303 **Collection Date:** 05/06/20 11:30
Matrix: WATER **Date Received:** 05/06/20 14:15
Inst. ID: DENVER APX-200 **Sample Size:** 970 mL **PrepDate:** 05/19/20 6:22
ColumnID: **%Moisture:** **BatchNo:** 27045/R33960
Revision: 05/20/20 14:28 **TestCode** OG1664A **FileID:** 1-SAMP-
Col Type:

Analyte	ResultQual	PQL	Units	DF	Date Analyzed
OIL AND GREASE (LLE)			EPA 1664A		(EPA 1664A)
Oil and Grease	ND	5.15	mg/L	1	05/20/20

Qualifiers:

- * Value may exceed the Acceptable Level
- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Practical Quantitation Limit (PQL)
- S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

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East Syracuse, NY 13057

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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC. **Lab ID:** 2006303-001E
Project: PAS Oswego, Semiannual Permit Discharge **Client Sample ID:** Tank Effluent Leachate, 5/6/20
Location:
W Order: 2006303 **Collection Date:** 05/06/20 11:30
Matrix: WATER **Date Received:** 05/06/20 14:15
Inst. ID: AA3 **Sample Size:** 50 mL **PrepDate:** 05/13/20 0:00
ColumnID: **%Moisture:** **BatchNo:** 27023/R33945
Revision: 05/13/20 14:04 **TestCode:** CN335.4W **FileID:** 0-SAMP-
Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
CYANIDE, TOTAL				EPA 335.4		(EPA 335.4)
Cyanide, Total	ND		0.010	mg/L	1	05/13/20

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
E Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC. **Lab ID:** 2006303-001F
Project: PAS Oswego, Semiannual Permit Discharge **Client Sample ID:** Tank Effluent Leachate, 5/6/20
Location:
W Order: 2006303 **Collection Date:** 05/06/20 11:30
Matrix: WATER **Date Received:** 05/06/20 14:15
Inst. ID: GENESYS 20 **Sample Size:** NA **PrepDate:** 05/07/20 8:35
ColumnID: **%Moisture:** **BatchNo:** R33942
Revision: 05/18/20 15:19 **TestCode** CRHEX7196W **FileID:** 0-SAMP-
Col Type:

Analyte	ResultQual	PQL	Units	DF	Date Analyzed
CHROMIUM, HEXAVALENT			SW7196A		
Chromium, Hexavalent	ND	0.010	mg/L	1	05/07/20

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
E Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



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Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.	Lab ID: 2006303-001G
Project: PAS Oswego, Semiannual Permit Discharge	Client Sample ID: Tank Effluent Leachate, 5/6/20
Location:	
W Order: 2006303	Collection Date: 05/06/20 11:30
Matrix: WATER	Date Received: 05/06/20 14:15
Inst. ID: Fisher balance XA	Sample Size: NA
ColumnID:	%Moisture:
Revision: 05/19/20 8:40	TestCode TSS2540D
Col Type:	BatchNo: R33937
	FileID: 0-SAMP-

Analyte	ResultQual	PQL	Units	DF	Date Analyzed
RESIDUE-NON-FILTERABLE (TSS)			SM 2540 D-2011		
Residue-non-filterable (TSS)	39	5.0	mg/L	1	05/07/20

Qualifiers:	* Value may exceed the Acceptable Level	B Analyte detected in the associated Method Blank
	E Value exceeds the instrument calibration range	H Holding times for preparation or analysis exceeded
	J Analyte detected below the PQL	ND Not Detected at the Practical Quantitation Limit (PQL)
	P Prim./Conf. column %D or RPD exceeds limit	S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC. **Lab ID:** 2006303-001G
Project: PAS Oswego, Semiannual Permit Discharge **Client Sample ID:** Tank Effluent Leachate, 5/6/20
Location:
W Order: 2006303 **Collection Date:** 05/06/20 11:30
Matrix: WATER **Date Received:** 05/06/20 14:15
Inst. ID: DO Meter **Sample Size:** NA **PrepDate:** 05/07/20 11:29
ColumnID: **%Moisture:** **BatchNo:** R33957
Revision: 05/19/20 8:38 **TestCode** BODSM5210B **FileID:** 0-SAMP-
Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
BIOCHEMICAL OXYGEN DEMAND (BOD5)				SM 5210B-01,-11		
Biochemical oxygen demand (BOD5)	12		4.0	mg/L	1	05/07/20

Qualifiers: * Value may exceed the Acceptable Level B Analyte detected in the associated Method Blank
 E Value exceeds the instrument calibration range H Holding times for preparation or analysis exceeded
 J Analyte detected below the PQL ND Not Detected at the Practical Quantitation Limit (PQL)
 P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge

Lab ID: 2006303-001H
Client Sample ID: Tank Effluent Leachate, 5/6/20

Location:

W Order: 2006303

Collection Date: 05/06/20 11:30

Matrix: WATER

Date Received: 05/06/20 14:15

Inst. ID: Traacs

Sample Size: 1 mL

PrepDate: 05/15/20 0:00

ColumnID:

%Moisture:

BatchNo: 27082/R33987

Revision: 06/02/20 8:35

TestCode TKN351.2

FileID: 1-SAMP-

Col Type:

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
KJELDAHL NITROGEN - TOTAL (AS N)				EPA 351.2		(EPA 351.2)
Kjeldahl Nitrogen - Total (as N)	18		0.10	mg/L	1	05/15/20

Qualifiers:

- * Value may exceed the Acceptable Level
- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Practical Quantitation Limit (PQL)
- S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.	Lab ID: 2006303-001H
Project: PAS Oswego, Semiannual Permit Discharge	Client Sample ID: Tank Effluent Leachate, 5/6/20
Location:	
W Order: 2006303	Collection Date: 05/06/20 11:30
Matrix: WATER	Date Received: 05/06/20 14:15
Inst. ID: HACH4000	Sample Size: 50 mL
ColumnID:	%Moisture:
Revision: 05/20/20 11:48	TestCode: TP365.3
Col Type:	BatchNo: 27047/R33953
	FileID: 0-SAMP-

Analyte	ResultQual	PQL	Units	DF	Date Analyzed
PHOSPHORUS, TOTAL (AS P)			EPA 365.3		(EPA 365.3)
Phosphorus, Total (As P)	0.17	0.010	mg/L	1	05/15/20

Qualifiers:	* Value may exceed the Acceptable Level	B Analyte detected in the associated Method Blank
	E Value exceeds the instrument calibration range	H Holding times for preparation or analysis exceeded
	J Analyte detected below the PQL	ND Not Detected at the Practical Quantitation Limit (PQL)
	P Prim./Conf. column %D or RPD exceeds limit	S Spike Recovery outside accepted recovery limits



Life Science Laboratories, Inc.

5854 Butternut Drive

East Syracuse, NY 13057

(315) 445-1900

Analytical Results

StateCertNo: 10248

CLIENT: O'Brien & Gere Operations, LLC.
Project: PAS Oswego, Semiannual Permit Discharge

Lab ID: 2006303-002A
Client Sample ID: Trip Blank

Location:

W Order: 2006303

Collection Date: 04/29/20 0:00

Matrix: WATER Q

Date Received: 05/06/20 14:15

Inst. ID: MSN_76

Sample Size: NA

PrepDate:

ColumnID: Rtx-VMS

%Moisture:

BatchNo: R33966

Revision: 05/28/20 13:49

TestCode: 624W

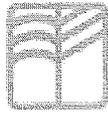
FileID: 1-SAMP-

Col Type:

Analyte	ResultQual	PQL	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS			EPA 624		
1,1,1-Trichloroethane	ND	1.00	µg/L	1	05/20/20
Methylene chloride	ND	1.00	µg/L	1	05/20/20
Tetrachloroethene	ND	1.00	µg/L	1	05/20/20
Toluene	ND	1.00	µg/L	1	05/20/20
Trichloroethene	ND	1.00	µg/L	1	05/20/20
Surr: 1,2-Dichloroethane-d4	107	75-130	%REC	1	05/20/20
Surr: 4-Bromofluorobenzene	101	75-125	%REC	1	05/20/20
Surr: Toluene-d8	97	75-125	%REC	1	05/20/20

Qualifiers:

- * Value may exceed the Acceptable Level
- B Analyte detected in the associated Method Blank
- E Value exceeds the instrument calibration range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below the PQL
- ND Not Detected at the Practical Quantitation Limit (PQL)
- P Prim./Conf. column %D or RPD exceeds limit
- S Spike Recovery outside accepted recovery limits



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

May 14, 2020

Greg Smith
Life Science Laboratories, Inc.
5854 Butternut Dr.
E. Syracuse, NY 13057
TEL: (315) 445-1105
FAX: (315) 445-1301
RE: 2006303

Dear Greg Smith:

Order No.: 20050561

Summit Environmental Technologies, Inc. received 2 sample(s) on 5/12/2020 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Jennifer Woolf
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 011, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 20050561
Date: 5/14/2020

CLIENT: Life Science Laboratories, Inc.
Project: 2006303

WorkOrder Narrative:

20050561: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Sequence Sample Notes:

20050561-001A HG-LL_NPW(1631): Z: Method Deviation: Sample was received without an associated Field or Trip Blank for Low Level Mercury Analysis.

20050561-002A HG-LL_NPW(1631): Z: Method Deviation: Sample was received without an associated Field or Trip Blank for Low Level Mercury Analysis.

Original



Qualifiers and Acronyms

WO#: 20050561
Date: 5/14/2020

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



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Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 20050561
14-May-20

CLIENT: Life Science Laboratories, Inc.
Project: 2006303

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
20050561-001	2006303-0011,J		5/6/2020	5/12/2020 10:15:00 AM	Non-Potable Water
20050561-002	2006303-003A,B		5/6/2020	5/12/2020 10:15:00 AM	Non-Potable Water



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DATES REPORT

WO#: 20050561

14-May-20

Client: Life Science Laboratories, Inc.

Project: 2006303

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
20050561-001A	2006303-001LJ	5/6/2020	Non-Potable Water	Low-Level Mercury (EPA 1631)			5/14/2020 1:59:26 PM
20050561-002A	2006303-003A,B			Low-Level Mercury (EPA 1631)			5/14/2020 2:03:05 PM

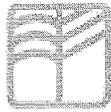
Original



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WO#: 20050561
Date Reported: 5/14/2020
Company: Life Science Laboratories, Inc.
Address: 5854 Butternut Dr.
E. Syracuse NY 13057
Received: 5/12/2020
Project#: 2006303

Client ID#	Lab ID#	Collected	Analyte	Result Units	Qual	Matrix	Method	DF	MDL	PQL	Run	Analyst
2006303-0011,J	001	5/6/2020	Mercury	3.01 ng/L	Z	Non-Potable Water	EPA 1631 E	5	1.24	2.50	5/14/2020	AJT
Client ID#	Lab ID#	Collected	Analyte	Result Units	Qual	Matrix	Method	DF	MDL	PQL	Run	Analyst
2006303-003A,B	002	5/6/2020	Mercury	8.24 ng/L	Z	Non-Potable Water	EPA 1631 E	1	0.247	0.500	5/14/2020	AJT



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 ENVIRONMENTAL TECHNOLOGIES, INC
 Analytical Laboratories

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 Website: <http://www.seitek.com>

**Accreditation Program
 Analytes Report**

WO#: 20050561
 14-May-20

Client: Life Science Laboratories, Inc.

State: NY

Project: 2006303

Program Name: DW_WW_SCM_NI

Sample ID	Matrix	Test Name	Analyte	Status
20050561-001A	Non-Potable Water	Low-Level Mercury (EPA 1631)	Mercury	A
20050561-002A	Non-Potable Water	Low-Level Mercury (EPA 1631)	Mercury	A

Key

DW_WW_SCM_NE A Accredited

Original #1



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QC SUMMARY REPORT

WO#: 20050561
 14-May-20

Client: Life Science Laboratories, Inc.
 Project: 2006303

BatchID: R112941

Sample ID: lcs 1	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCSW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776310						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	49.4	0.500	50.00	0	98.8	77	123				

Sample ID: mblank 1	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: PBW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776311						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

Sample ID: rlc	SampType: RLC	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: BatchQC	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776313						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.599	0.500	0.5000	0	120	50	150				

Sample ID: mblank 2	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: PBW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776325						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range H Holding times for preparation or analy
 J Analyte detected below quantitation limits M Manual Integration used to determine area response MC Value is below Minimum Compound
 ND Not Detected P Second column confirmation exceeds PL Permit Limit
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted reco

Original



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QC SUMMARY REPORT

WO#: 20050561

14-May-20

Client: Life Science Laboratories, Inc.

Project: 2006303

BatchID: R112941

Sample ID: mblank 2	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941					
Client ID: PBW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776325						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCSW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776332						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	45.0	0.500	50.00	0	90.0	77	123				

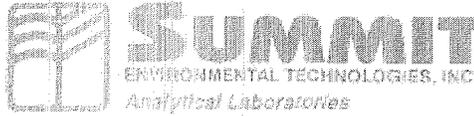
Sample ID: LFB	SampType: LCSD	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCSS02	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776333						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	44.7	0.500	50.00	0	89.5	77	123	49.40	9.88	24	

Sample ID: mblank 3	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: PBW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776339						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	P	Second column confirmation exceeds	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted reco

Original



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QC SUMMARY REPORT

WO#: 20050561
 14-May-20

Client: Life Science Laboratories, Inc.
 Project: 2006303

BatchID: R112941

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCSW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776346						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	42.4	0.500	50.00	0	84.7	77	123				

Sample ID: LFEID	SampType: LCSD	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCSS02	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776347						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	41.6	0.500	50.00	0	83.3	77	123	49.40	17.1	24	

Sample ID: mblank 4	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: PBW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776349						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

Sample ID: ics 2	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCSW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776350						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	43.5	0.500	50.00	0	86.9	77	123				

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
	J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
	ND	Not Detected	P	Second column confirmation exceeds	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted reco

Original



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QC SUMMARY REPORT

WO#: 20050561

14-May-20

Client: Life Science Laboratories, Inc.
Project: 2006303

BatchID: R112941

Sample ID: lcs 2	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941					
Client ID: LCSW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776350						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: mblank 5	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: PBW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776358						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

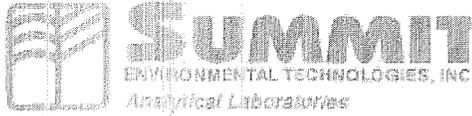
Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCSW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776360						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	43.7	0.500	50.00	0	87.4	77	123				

Sample ID: LFBID	SampType: LCSD	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: LCS02	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776361						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	42.4	0.500	50.00	0	84.8	77	123	49.40	15.2	24	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	P	Second column confirmation exceeds	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted reco

Original



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QC SUMMARY REPORT

WO#: 20050561
 14-May-20

Client: Life Science Laboratories, Inc.
Project: 2006303

BatchID: R112941

Sample ID: mblank 6	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 112941						
Client ID: PBW	Batch ID: R112941	TestNo: E1631		Analysis Date: 5/14/2020	SeqNo: 2776362						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									U

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
	J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
	ND	Not Detected	P	Second column confirmation exceeds	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted reco

●original



Sample Log-In Check List

Client Name: **LIF-NY-13057**

Work Order Number: **20050561**

RcptNo: **1**

Logged by: **John A. Semenik** **5/12/2020 10:15:00 AM**

John A. Semenik

Completed By: **Jacqueline Rasile** **5/13/2020 9:50:12 AM**

Jacqueline Rasile

Reviewed By: **Jennifer Woolf** **5/13/2020 1:29:24 PM**

Jennifer Woolf

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? UPS

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels? Yes No
- (Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No
- (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Not Present			



Life Science Laboratories, Inc.

5854 Butternut Drive
East Syracuse, NY 13057

Phone # (315) 445-1900

Telefax # (315) 445-1104

Chain of Custody Record

Client: O'BRIEN & GERE **Phone #** 315-956-6100

Address: 333 W WASHINGTON ST **Fax #** _____
SYRACUSE NY 13202

Authorization: _____

Contact Person: MARK BYRNE
315-842-7024

LSL Project #: 2006303

Client's Site I.D.: PAS OSWEGO semi Annual Leachate Samples

Client's Project I.D.: _____

LSL Sample Number	Client's Sample Identifications	Sample Date	Sample Time	Type		Matrix	Preserv. Added	Containers		Analyses	Free Cl (mg/L)	Pres. Check
				grab	comp.			#	size/type			
001 AA	LEACHATE EFF	5-6-20	11:30		✓	NPW	HCl	2	40 ml	EPA 624		
002		5-6-20	11:30		✓		None	1	Liter-g	EPA 625		
003		5-6-20	11:30		✓		HNO3	1	250 ml	Metals (see permitt)		
004		5-6-20	11:30		✓		H2SO4	1	Liter-g	Oil & Grease		
005		5-6-20	11:30		✓		Asc/NaOH	1	250 ml	Cu		22
006		5-6-20	11:30		✓		None	1	250 ml	Cr+6		
007		5-6-20	11:30		✓		None	1	Liter-p	BOD, TSS		
008		5-6-20	11:30		✓		H2SO4	1	250 ml	TKN, Phos		22
009		5-6-20	11:30		✓		HCl	2	40 ml	LL Hg (1631)		
002 AA	TRIP BLANK	4-29-20	—			W	HCl	2	40 ml	EPA 624		
003 AB	BLANK	5-6-20	11:30	✓	✓	W	HCl	2	40 ml	LL Hg (1631)		

SAMPLES MUST BE RECEIVED ON ICE

Please Fill Out Completely

SAMPLES MUST BE RECEIVED ON ICE

Notes and Hazard Identifications:
PH-6.8
Temp-44°

Custody Transfers

Sampled and Relinquished By:	Signature:	Date	Time
Print Name: <u>MARTIN KOENNECKE</u>	<u>Martin Koennecke</u>	<u>5-6-20</u>	<u>14:15</u>
Received By:			
Relinquished By:	Received By:		
Relinquished By:	Received for Lab By: <u>[Signature]</u>	<u>5-6-20</u>	<u>14:15</u>

Shipment Method: _____ **Samples Received Intact:** Y N 7.0⁰²

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: **OGINA PAS**

Date and Time Received:

5/6/2020 2:15:00 PM

Work Order Number: **2006303**

Received by: **gis**

Checklist completed by:

 js 5-6-20
Initials Date

Reviewed by:

 [Signature] 5/6/20
Initials Date

Delivery Method: Courier

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Applicable
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No
- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No Not Applicable

<u>pH</u>	<u>Preservative</u>	<u>pH Acceptable</u>
>12	NaOH	Yes <input checked="" type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
<2	HNO3	Yes <input checked="" type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
<2	HSO4	Yes <input checked="" type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
<2	1:1 HCL	Yes <input type="checkbox"/> N <input type="checkbox"/> NA <input checked="" type="checkbox"/>
5-9	Pest/PCBs (608/8081)	Yes <input type="checkbox"/> N <input type="checkbox"/> NA <input checked="" type="checkbox"/>

Sample ID

Volume of Preservative added in Lab.

Comments:

Corrective Action:

ATTACHMENT III

ACTIONS PLANNED

ANNUAL PROGRESS REPORT – Future

Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: *Pollution Abatement Services Site
Oswego, New York*

PERIOD COVERED: JULY 2020 – JUNE 2021

ACTIONS PLANNED FOR THE YEAR

- Leachate removal activities will be performed during the period July 2020 through June 2021 at the PAS Oswego Site in accordance with the Operation, Maintenance and Long-term Monitoring (OM&M) Activities Plan (BBL, 1998 revised July 2012) (Work Plan). The OM&M activities will include pumping approximately 20,000 gallons per month from May through October, and 10,000 gallons per month for the winter and spring months November through April.
- The leachate will be discharged to the Eastside Wastewater Treatment Plant in Oswego, New York (Oswego WWTP) under an approved permit consistent with the schedule presented below. However, the Wastewater Treatment Plant in the City of Auburn, New York will continue to be retained as an alternate leachate treatment and disposal facility.
- Additional leachate sampling will be conducted as needed for treatment and disposal at the Oswego Wastewater Treatment Plant under the approved permit.
- Quarterly ground-water elevation monitoring is scheduled to be conducted on August 5, 2020, November 5, 2020, February 4, 2021 and May 9, 2021.
- Site maintenance activities will be conducted along with other monitoring and removal activities. Maintenance activities include cap vegetation control and inspection and maintenance of the storage shed, spill control materials and the perimeter fence. Snow removal will be performed on an as needed basis throughout the winter months. These activities will be performed in accordance with the approved Work Plan.
- Semi-annual groundwater and leachate quality sampling is scheduled to be conducted on November 5, 2020 and May 9, 2021. Wells LR-8, M-21, LCW-2 and LCW-4 will be monitored over the 2020-2021 period. OD-3, MW- 22 and LR-6 will be sampled in the fall of 2022 to provide data for the next 5 year review.
- The Institutional Control Implementation Plan (ICIP) includes the inspection requirements for the period following the execution and recording of the Easement, which were documented in the approved Remedial Action Completion Report. It states that following implementation of institutional controls on the Industrial Precision Products Property, the Site will be inspected on an annual basis to determine whether any intrusive activities have occurred. In addition, building and property records will be reviewed to ascertain whether or not any filings have been made for

such activities. The ICIP provides for an annual report summarizing the findings of the inspection and record review to be prepared, along with a certification confirming that operation and maintenance activities will continue, and that the annual report would be included in the annual OM&M progress report to be submitted to EPA in July of each year.

- The schedule for leachate removal events and tasks is provided below.

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020						
	July 2020 Removal Events		August 2020 Removal Events		September 2020 Removal Events	
	First Event		First Event		First Event	
Removal	July 8		Aug 5		Sep 9	

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020						
	October 2020 Removal Events		November 2020 Removal Events		December 2020 Removal Events	
	First Event		First Event		First Event	
Removal	Oct 7		Nov 4		Dec 9	

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020						
	January 2021 Removal Events		February 2021 Removal Events		March 2021 Removal Events	
	First Event		First Event		First Event	
Removal	Jan 6		Feb 3		Mar 3	

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020						
	April 2021 Removal Events		May 2021 Removal Events		June 2021 Removal Events	
	First Event		First Event		First Event	
Removal	Apr 8		May 6		June 10	