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Subject:
Results of Third Quarter 2018 System Operation and Monitoring, Bethpage
Park Groundwater Containment System (BPGWCS), Operable Unit 3 (Former
Grumman Settling Ponds), Bethpage, New York, NYSDEC Site
#1-30-003A.

ENVIRONMENT

Date:
November 29, 2018

Dear Jason:

Contact:
Christopher Engler

Enclosed is one electronic PDF copy of the third quarter results of the OU3
BPGWCS operation and monitoring, performed in accordance with the NYSDEC-
approved OU3 Groundwater IRM OM&M Manual (Arcadis 2009) and the
NYSDEC-approved Sampling and Analysis Plan (SAP; Arcadis 2009). As we
have transitioned to electronic submittals (via PDF) in line with NYSDEC's paper
reduction program, hard copies of the report can be provided on request.

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If you have any questions, please do not hesitate to contact me.

Our ref:
NY001496.32TM.RPTI4

Sincerely,

Arcadis of New York, Inc.



Christopher Engler, PE
New York PE-069748
Vice President

Enclosure

Mr. Jason Pelton
November 29, 2018

Copies:

Edward Hannon, Northrop Grumman Corporation
Donald Hesler, NYSDEC
Steven Karpinski, NYS Dept. of Health
John Lovejoy, Nassau County Dept. of Health
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TABLES



Table 1
Operational Summary
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| MONTH | DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Days Operational ¹ |
|--------------|-----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | |
| 2009 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 160 |
| 2010 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 352 |
| 2011 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 351 |
| 2012 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 353 |
| 2013 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 354 |
| 2014 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 349 |
| 2015 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 348 |
| 2016 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 351 |
| 2017 Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 354 |
| 1Q 2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 90 |
| 2Q 2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 81 |
| July 2018 | 2 | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | | | 28 |
| Aug 2018 | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | | | | 30 |
| Sep 2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 |
| 3Q 2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 88 |
| 2018 total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 259 |
| TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3231 |

Legend:

-  Indicates system online the majority or all of the day.
-  Indicates system operated with reduced flow rates.
-  Indicates system off-line the majority or all of the day.

Abbreviations, Notes, and Units on last page.

Table 1
Operational Summary
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

Notes:

1. Days the system was operational for the majority of the day are counted as one day.

Third Quarter 2018

2. RW-3 pump failed on June 26, 2018 and was replaced on July 5, 2018.
3. System shutdown due to electrical issues while installing new blower differential pressure switches.
4. System shutdown due to building sump overflow caused by heavy rainfall.

Abbreviations/Units:

| | |
|------|---------------------------------|
| 1Q | First Quarter |
| 2Q | Second Quarter |
| 3Q | Third Quarter |
| PLC | Programmable Logic Controller |
| PSEG | Public Service Enterprise Group |
| RW | Recovery Well |
| gpm | gallons per minute |

Table 2
Summary of Influent Water Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| Compound | 11/29/17 (µg/L) | 02/01/18 (µg/L) | 04/04/18 (µg/L) | 08/07/18 (µg/L) |
|----------------------------------|--------------------|--------------------|--------------------|--------------------|
| <u>Project VOCs</u> | | | | |
| 1,1,1 - Trichloroethane | < 1.0 | < 1.0 | < 0.50 | < 1.0 |
| 1,1 - Dichloroethane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2 - Dichloroethane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1 - Dichloroethene | < 1.0 | < 1.0 | < 0.50 | < 1.0 J |
| Tetrachloroethene | < 1.0 | < 1.0 | < 0.50 | < 1.0 |
| Trichloroethene | 3.9 | 2.8 | 2.9 | 2.6 |
| Vinyl Chloride | 4.3 | 3.0 | 6.3 | 2.7 |
| cis 1,2-Dichloroethene | 6.2 | 6.5 | 7.5 | 5.3 |
| trans 1,2-Dichloroethene | < 1.0 | < 1.0 | < 0.50 | < 1.0 |
| Benzene | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Toluene | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Subtotal Project VOCs | 14.4 | 12.3 | 16.7 | 10.6 |
| <u>Non-Project VOCs</u> | | | | |
| 1,1,2,2-Tetrachloroethane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Butanone | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 2-Butanone | < 10 | < 10 | < 10 | < 10 |
| 4-Methyl-2-Pentanone | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | < 10 | < 10 | < 10 | < 10 |
| Bromodichloromethane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | < 1.0 J | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | < 5.0 | < 5.0 | < 5.0 | < 5.0 J |
| Chloroethane | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 0.65 J | 0.47 J | 0.54 | < 1.0 |
| Chloromethane | < 1.0 | < 1.0 J | < 1.0 | < 1.0 J |
| cis-1,3-Dichloropropene | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

Abbreviations, Notes, Qualifiers, and Units on last page.

Table 2
Summary of Influent Water Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| Compound | 11/29/17 (µg/L) | 02/01/18 (µg/L) | 04/04/18 (µg/L) | 08/07/18 (µg/L) |
|--|--------------------|--------------------|--------------------|--------------------|
| <u>Non-Project VOCs</u> | | | | |
| Dichlorodifluoromethane (Freon 12) | < 2.0 | < 2.0 J | < 2.0 | < 2.0 J |
| Dichloromethane | < 2.0 | < 2.0 | < 0.50 | < 2.0 |
| Ethylbenzene | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl N-Butyl Ketone | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Methyl Tert-Butyl Ether | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Styrene (Monomer) | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane (Freon 11) | < 2.0 | < 2.0 J | < 2.0 | < 2.0 |
| Trichlorotrifluoroethane (Freon 113) | < 5.0 | < 5.0 | < 0.50 | < 5.0 |
| 1-Chloro-1,1-difluoroethane (Freon 142b) | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Subtotal Non-Project VOCs | 0.65 | 0.47 | 0.54 | 0 |
| Total VOCs¹ | 15 | 13 | 17 | 11 |
| 1,4-Dioxane ² | 0.848 | 0.910 | 1.08 | 0.52 |
| Compound | 11/29/17 (µg/L) | 02/01/18 (µg/L) | 04/04/18 (µg/L) | 08/07/18 (µg/L) |
| <u>Inorganics</u> | | | | |
| Dissolved Cadmium | -- | -- | -- | < 3.0 |
| Total Cadmium | -- | -- | -- | < 3.0 |
| Dissolved Chromium | -- | -- | -- | 10.2 |
| Total Chromium | -- | -- | -- | 10.5 |
| Dissolved Iron | 225 | -- | -- | 108 |
| Total Iron | 1080 | -- | -- | 166 |
| Total Manganese | -- | -- | -- | -- |
| pH ³ | 5.7 | 5.6 | 5.7 | 5.8 |

Abbreviations, Notes, Qualifiers, and Units:

-- Not Analyzed

USEPA United States Environmental Protection Agency

VOC Volatile Organic Compound

- "Total VOCs" represents the sum of individual concentrations of the compounds detected. The values used in calculations referenced in this report have been rounded to the nearest whole number.
- Samples collected prior to July 11, 2018 were analyzed for 1,4-Dioxane using USEPA Method 522-SIM. Samples collected are analyzed for 1,4-Dioxane using USEPA Method 8270D-SIM-CLLE.
- Influent pH samples collected and measured in the field by Arcadis personnel on the dates listed using a field calibrated pH/conductivity meter. pH units are standard units.

3.9 Bold value indicates a detection.

< 1.0 Compound not detected at or above the laboratory quantification limit.

J Result is estimated.

µg/L micrograms per liter

Table 3
Summary of Effluent Water Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| Compound | Discharge Limit ¹ (µg/L) | 01/11/18 (µg/L) | 02/01/18 (µg/L) | 03/01/18 (µg/L) | 04/04/18 (µg/L) | 05/11/18 (µg/L) | 06/07/18 (µg/L) | 07/11/18 (µg/L) | 08/07/18 (µg/L) | 09/05/18 (µg/L) |
|--------------------------------------|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Project VOCs | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 1,1-Dichloroethene | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Tetrachloroethene | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Trichloroethene | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Vinyl Chloride | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| cis 1,2-Dichloroethene | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| trans 1,2-Dichloroethene | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Subtotal Project VOCs | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Non-Project VOCs | | | | | | | | | | |
| Chloroform | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Dichloromethane | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Trichlorotrifluoroethane (Freon 113) | 5 ² | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Subtotal Non-Project VOCs | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total VOCs³ | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Treatment Efficiency ⁴ | | > 99.9% | > 99.9% | > 99.9% | > 99.9% | > 99.9% | > 99.9% | > 99.9% | > 99.9% | > 99.9% |
| Inorganics | | | | | | | | | | |
| Dissolved Cadmium | 5 | -- | < 3.0 | -- | < 3.0 | -- | -- | -- | < 3.0 | -- |
| Total Cadmium | 5 | -- | < 3.0 | -- | < 3.0 | -- | -- | -- | < 3.0 | -- |
| Dissolved Chromium | 50 | -- | < 10 | -- | < 10 | -- | -- | -- | < 10 | -- |
| Total Chromium | 50 | -- | < 10 | -- | < 10 | -- | -- | -- | < 10 | -- |
| Dissolved Iron | 600 | 150 | 116 | 181 | 172 | 158 | < 100 | 141 | < 100 | -- |
| Total Iron | 600 | 204 | 183 | 229 | 218 | 106 | < 100 | 168 | 138 J | < 100 |
| Total Mercury | 250 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | -- |
| Total Manganese | 600 | -- | -- | -- | -- | -- | -- | -- | 50.2 | 46.2 |
| Nitrate and Nitrite | 10,000 | 2,800 | 3,200 | 2,800 | 2,800 | 2,800 | 2,900 | 2,500 | 2,800 | 2,900 |
| Total Kjeldahl Nitrogen | 10,000 | < 200 | < 200 | < 200 | < 200 | < 200 | < 200 | < 200 | < 200 | < 200 |
| Total Nitrogen | 10,000 | 3,000 | 3,200 | 2,800 | 2,800 | 2,800 | 2,900 | 2,500 | 2,800 | 2,900 |
| 1,4-Dioxane ⁵ | NE | 0.819 | 0.997 | 1.45 | 0.997 | 0.984 | 0.646 | 0.71 | 0.52 | 0.45 |
| pH ⁶ | 5.5-8.5 | 6.8 | 6.6 | 6.7 | 6.6 | 7.1 | 7.0 | 6.5 | 7.0 | 6.5 |

Abbreviations, Notes, Qualifiers, and Units on last page.

Table 3
Summary of Effluent Water Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

Abbreviations, Notes, Qualifiers, and Units:

| | |
|--------|---|
| -- | Not Analyzed |
| NE | Not Established |
| NYSDEC | New York State Department of Environmental Conservation |
| SPDES | State Pollutant Discharge Elimination System |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |

1. Discharge limits per the interim SPDES equivalency program or Division of Water Technical and Operational Guidance Series (TOGS 1.1.1) Quality Standards and Guidance Values and Groundwater Effluent Limitations, if the compound is not part of the SPDES Permit Equivalency.
2. As of September 2017, the 10 SPDES VOCs discharge limits are per Site Number 1-30-003A Operable Unit 3 SPDES Permit Equivalency.
3. "Total VOCs" represents the sum of individual concentrations of compounds detected. The values used in calculations referenced in this report have been rounded to the nearest whole number.
4. Treatment efficiency was calculated by dividing the difference between the influent and effluent total VOC concentrations by the influent total VOC concentration.
5. Samples collected prior to July 11, 2018 were analyzed for 1,4-Dioxane using USEPA Method 522-SIM. Samples collected are analyzed for 1,4-Dioxane using USEPA Method 8270D-SIM-CLLE.
6. Effluent pH measured on site using a handheld pH meter. pH units are standard units.

| | |
|------------|--|
| 168 | Bold value indicates a detection. |
| < 1.0 | Compound not detected above the laboratory quantification limit. |
| J | Result is estimated. |
| µg/L | micrograms per liter |

Table 4
Influent Vapor Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| Compound ¹ | 11/29/17 (µg/m ³) | 02/01/18 (µg/m ³) | 04/05/18 (µg/m ³) | 08/07/18 (µg/m ³) |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Project VOCs | | | | |
| 1,1,1 - Trichloroethane | 0.65 | 0.46 | 0.87 | 0.71 |
| 1,1 - Dichloroethane | 3.6 | 2.8 | 4.9 | 3.8 |
| 1,2 - Dichloroethane | < 0.81 | < 0.65 | 0.45 J | < 0.65 |
| 1,1 - Dichloroethene | 2.1 | 1.2 | 1.7 | 1.2 |
| Tetrachloroethene | 5.2 | 2.4 | 3.0 | 2.9 |
| Trichloroethene | 70.4 | 47 | 73.1 | 53.7 |
| Vinyl Chloride | 71.8 | 48.6 | 81.8 | 47.8 |
| cis 1,2-Dichloroethene | 122 | 105 | 137 | 99.5 |
| trans 1,2-Dichloroethene | < 0.79 | 0.28 J | 0.44 J | < 0.63 |
| Benzene | 0.32 J | 0.45 J | 0.61 | 0.77 |
| Toluene | 2.4 | 0.94 | 3.6 | 0.64 |
| o-Xylene | < 0.87 | < 0.69 | 0.74 | < 0.69 |
| m,p-Xylene | 0.69 J | 0.48 J | 1.1 | < 0.69 |
| Subtotal Project VOCs | 279 | 210 | 309 | 211 |
| Non-Project VOCs | | | | |
| 1,1,2,2-Tetrachloroethane | < 0.69 | < 0.55 | < 0.55 | < 0.55 |
| 1,1,2-Trichloroethane | < 0.55 | < 0.44 | < 0.44 | < 0.44 |
| 1,2-Dichloropropane | < 0.92 | 0.25 J | 0.45 J | < 0.74 |
| 1,3-Butadiene | < 0.44 | < 0.35 | < 0.35 | < 0.35 |
| 2-Butanone | 0.62 | 0.41 J | 4.7 | 0.86 |
| 4-Methyl-2-Pentanone | < 0.82 | < 0.66 | < 0.66 | < 0.66 |
| Acetone | 7.1 | 4.0 | 22 | 7.6 |
| Bromodichloromethane | < 0.67 | < 0.54 | < 0.54 | < 0.54 |
| Bromoform | < 0.41 | < 0.33 | < 0.33 | < 0.33 |
| Bromomethane | < 0.78 | < 0.62 | < 0.62 | < 0.62 |
| Carbon Disulfide | < 0.62 | < 0.50 | 7.5 | < 0.50 |
| Carbon Tetrachloride | < 0.25 | 0.47 | 0.62 | 0.59 |
| Chlorobenzene | < 0.92 | < 0.74 | < 0.74 | < 0.74 |
| Chlorodibromomethane | < 0.85 | < 0.68 | < 0.68 | < 0.68 |
| Chlorodifluoromethane (Freon 22) | 16 | 14 | 14 | 15 |
| Chloroethane | < 0.53 | < 0.42 | < 0.42 | < 0.42 |
| Chloroform | 13 | 8.8 | 11 | 8.8 |
| Chloromethane | 1.3 | 1.3 | 1.2 | 1.8 |
| cis-1,3-Dichloropropene | < 0.91 | < 0.73 | < 0.73 | < 0.73 |
| Dichlorodifluoromethane (Freon 12) | 2.4 | 2.4 | 2.5 | 2.4 |
| Dichloromethane | < 0.69 | 0.97 | < 0.56 | 2.8 |
| Ethylbenzene | < 0.87 | 0.37 J | 1.1 | < 0.69 |
| Methyl N-Butyl Ketone | < 0.82 | < 0.65 | < 0.65 | < 0.65 |
| Methyl Tert-Butyl Ether | 0.35 J | 0.36 J | 0.43 J | < 0.58 |
| Styrene (Monomer) | < 0.85 | < 0.68 | < 0.68 | < 0.68 |
| trans-1,3-Dichloropropene | < 0.91 | < 0.73 | < 0.73 | < 0.73 |
| Trichlorofluoromethane (Freon 11) | 1.9 | 1.7 | 1.9 | 1.7 |
| Trichlorotrifluoroethane (Freon 113) | 2.1 | 2.0 | 2.1 | 2.3 |
| 1-Chloro-1,1-difluoroethane (Freon 142b) | < 0.82 | 0.32 J | < 0.66 | 0.45 J |
| Subtotal Non-Project VOCs | 45 | 37 | 70 | 44 |
| Total VOCs² | 324 | 247 | 379 | 255 |

Abbreviations, Notes, Qualifiers, and Units on last page.

Table 4
Influent Vapor Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

Abbreviations, Notes, Qualifiers, and Units:

| | |
|--------|---|
| ELAP | Environmental Laboratory Approval Program |
| NYSDOH | New York State Department of Health |
| OM&M | Operation, Maintenance, and Monitoring |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |

1. Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per Modified USEPA Method TO-15. A VOC analyte list is provided in the DRAFT Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). Influent samples were collected at Vapor Sampling Port-1 (VSP-1); refer to Figure 3 of this OM&M Report for the location of VSP-1.
2. "Total VOCs" represents the sum of individual concentrations of compounds detected. The values used in calculations referenced in this report have been rounded to the nearest whole number.

| | |
|--------------------------|--|
| 53.7 | Bold value indicates a detection. |
| < 1.0 | Compound not detected above the laboratory quantification limit. |
| J | Result is estimated. |
| $\mu\text{g}/\text{m}^3$ | micrograms per cubic meter |

Table 5
Summary of Effluent Vapor Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| Compound ¹ | 12/1/2017 ³ (µg/m ³) | 02/01/18 (µg/m ³) | 04/05/18 (µg/m ³) | 08/07/18 (µg/m ³) |
|--|--|----------------------------------|----------------------------------|----------------------------------|
| Project VOCs | | | | |
| 1,1,1 - Trichloroethane | < 0.55 | < 0.44 | 0.60 | 0.50 |
| 1,1 - Dichloroethane | 3.9 | 3.6 | 4.5 | 3.0 |
| 1,2 - Dichloroethane | < 0.81 | 0.32 J | 0.36 J | < 0.65 |
| 1,1 - Dichloroethene | 0.83 | 1.1 | 1.3 | 0.79 |
| Tetrachloroethene | 0.47 | 0.68 | 1.7 | 1.3 |
| Trichloroethene | 4.2 | 4.0 | 32 | 16 |
| Vinyl Chloride | 8.9 | 16 | 51.1 | 14.0 |
| cis 1,2-Dichloroethene | 31 | 51.9 | 100 | 43.2 |
| trans 1,2-Dichloroethene | < 0.79 | < 0.63 | < 0.63 | < 0.63 |
| Benzene | 1.6 | 1.5 | 1.1 | 1.7 |
| Toluene | < 0.75 | 0.60 | 5.7 | 5.3 |
| o-Xylene | < 0.87 | < 0.69 | 0.34 J | 0.34 J |
| m,p-Xylene | < 0.87 | 0.40 J | 0.69 | 0.56 J |
| Subtotal Project VOCs | 51 | 80 | 199 | 87 |
| Non-Project VOCs | | | | |
| 1,1,1,2-Tetrachloroethane | < 0.69 | < 0.55 | < 0.55 | < 0.55 |
| 1,1,2-Trichloroethane | < 0.55 | < 0.44 | < 0.44 | < 0.44 |
| 1,2-Dichloropropane | < 0.92 | < 0.74 | < 0.74 | < 0.74 |
| 1,3-Butadiene | < 0.44 | < 0.35 | < 0.35 | < 0.35 |
| 2-Butanone | 1.1 | 5.0 | 5.6 | 43.1 |
| 4-Methyl-2-Pentanone | < 0.82 | < 0.66 | < 0.66 | < 0.66 |
| Acetone | 43 | 82.7 D | 23 | 238 |
| Bromodichloromethane | < 0.67 | < 0.54 | < 0.54 | < 0.54 |
| Bromoform | < 0.41 | < 0.33 | < 0.33 | < 0.33 |
| Bromomethane | < 0.78 | < 0.62 | < 0.62 | < 0.62 |
| Carbon Disulfide | < 0.62 | 17 | < 0.50 | 0.26 J |
| Carbon Tetrachloride | < 0.25 | < 0.20 | 0.45 | 0.46 |
| Chlorobenzene | < 0.92 | < 0.74 | < 0.74 | < 0.74 |
| Chlorodibromomethane | < 0.85 | < 0.68 | < 0.68 | < 0.68 |
| Chlorodifluoromethane (Freon 22) | 17 | 15 | < 0.56 | 11 |
| Chloroethane | < 0.53 | < 0.42 | < 0.42 | < 0.42 |
| Chloroform | 20 | 18 | 13 | 9.3 |
| Chloromethane | 1.2 | 1.8 | 1.1 | 2.3 |
| cis-1,3-Dichloropropene | < 0.91 | < 0.73 | < 0.73 | < 0.73 |
| Dichlorodifluoromethane (Freon 12) | 2.3 | 2.4 | 2.5 | 2.3 |
| Dichloromethane | < 0.69 | 0.76 | < 0.56 | 1.3 |
| Ethylbenzene | < 0.87 | < 0.69 | 0.43 J | < 0.69 |
| Methyl N-Butyl Ketone | < 0.82 | < 0.65 | < 0.65 | < 0.65 |
| Methyl Tert-Butyl Ether | < 0.72 | < 0.58 | < 0.58 | < 0.58 |
| Styrene (Monomer) | < 0.85 | < 0.68 | < 0.68 | < 0.68 |
| trans-1,3-Dichloropropene | < 0.91 | < 0.73 | < 0.73 | < 0.73 |
| Trichlorofluoromethane (Freon 11) | 1.9 | 1.9 | 1.9 | 2.1 |
| Trichlorotrifluoroethane (Freon 113) | 2.5 | 2.6 | 2.3 | 2.1 |
| 1-Chloro-1,1-difluoroethane (Freon 142b) | < 0.82 | 0.36 J | < 0.66 | 0.36 J |
| Subtotal Non-Project VOCs | 89 | 148 | 50 | 313 |
| Total VOCs² | 140 | 228 | 250 | 399 |

Abbreviations, Notes, Qualifiers, and Units on last page.

Table 5
Summary of Effluent Vapor Sample Analytical Results
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

Abbreviations, Notes, Qualifiers, and Units:

| | |
|--------|---|
| ELAP | Environmental Laboratory Approval Program |
| NYSDOH | New York State Department of Health |
| OM&M | Operation, Maintenance, and Monitoring |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |

1. Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per Modified USEPA Method TO-15. A VOC analyte list is provided in the DRAFT Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). Effluent samples were collected at Vapor Sampling Port-5 (VSP-5); refer to Figure 3 of this OM&M Report for the location of VSP-5.
2. "Total VOCs" represents the sum of individual concentrations of all compounds detected. The values used in calculations referenced in this report have been rounded to the nearest whole number.
3. 2017 fourth quarter effluent vapor sample collected two days after the influent vapor sample.

| | |
|-------------------|--|
| 16 | Bold value indicates a detection. |
| < 1.0 | Compound not detected above the laboratory quantification limit. |
| J | Result is estimated. |
| µg/m ³ | micrograms per cubic meter |

Table 6
Summary of Effluent Vapor Tentatively Identified Compounds
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| Compound ^{1,2,3} | 12/01/17 (ppbv) | 02/01/18 (ppbv) | 04/05/18 (ppbv) | 08/07/18 (ppbv) |
|---|--------------------|--------------------|--------------------|--------------------|
| Tentatively Identified Compounds | | | | |
| 2-Methyl-1,3-Dioxolane | -- | -- | -- | 5.6 JN |
| 2-Phenyl-2-propanol | -- | -- | -- | 5.5 JN |
| 3-Methyl-Furan | -- | -- | -- | 2.6 JN |
| Acetophenone | -- | -- | -- | 8.0 JN |
| Carbon Dioxide | 290 JNB | 270 JNB | -- | 210 JNB |
| Dimethyl ether | -- | -- | 290 JNB | -- |
| Ethanol | -- | -- | -- | 2.6 JN |
| Isopropylbenzene | -- | -- | 19 JN | 16 JN |
| Pentyl-Cyclohexane | 2.4 JN | -- | -- | -- |
| trans-2-methyl decalin | 3.0 JN | -- | -- | -- |
| Unknown | -- | -- | -- | 1.5 J |
| Total VOC TICs | 5.4 JN | 0 | 19 J | 41.8 J |

Abbreviations, Notes, Qualifiers, and Units:

| | |
|--------|---|
| ELAP | Environmental Laboratory Approval Program |
| NYSDOH | New York State Department of Health |
| OM&M | Operation, Maintenance, and Monitoring |
| TIC | Tentatively Identified Compound |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |

- Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per Modified USEPA Method TO-15. A VOC analyte list is provided in the DRAFT Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). Effluent samples were collected at Vapor Sampling Port-5 (VSP-5); refer to Figure 3 of this OM&M Report for the location of VSP-5.
- The ECUs were placed in a parallel configuration on 3/1/2018 to test for performance gain.
- VSP-5 sample location moved to location parallel ECUs near effluent stack.

| | |
|------------|---|
| 210 | Bold value indicates a detection. |
| -- | TIC not detected. |
| B | TIC was detected in the associated field blank. |
| J | Result is estimated. |
| N | Indicates presumptive evidence of a compound. |
| ppbv | parts per billion by volume |

Table 7
Summary of System Parameters
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

| Date ¹ | Water Flow Rates | | | | | | Water Pressures ² | | | | | Air Flow Rate ² | Air Pressures ⁵ | | | | Air Temp. ⁵ | |
|-------------------|----------------------------|-------------------|-------|-------|--------------------------------|-----------------------|-------------------------------------|-------|-------|-------|----------|----------------------------|----------------------------|------------------|------------------|------------------|------------------------|----------|
| | Remedial Well ² | | | | Combined Influent ³ | Effluent ² | Remedial Well Effluent ⁴ | | | | Effluent | Effluent | ECU Influent | | | | Effluent | Effluent |
| | RW-1 | RW-2 | RW-3 | RW-4 | | | RW-1 | RW-2 | RW-3 | RW-4 | | | GAC-501 | GAC-502 | PPZ-601 | PPZ-602 | | |
| | (gpm) | (gpm) | (gpm) | (gpm) | (gpm) | (gpm) | (psi) | (psi) | (psi) | (psi) | (psi) | (scfm) | (iwc) | (iwc) | (iwc) | (iwc) | (iwc) | (°R) |
| 08/01/17 | 30.7 | 77.1 | 74.6 | 29.5 | 212 | 242 | 55 | 50 | 25 | 55 | 10 | 1,607 | 4.9 | 2.5 | 1.0 | 1.5 | 0.0 | 538 |
| 08/16/17 | 30.3 | 75.0 | 75.0 | 30.8 | 211 | 234 | 55 | 67 | 17 | 54 | 10 | 1,549 | 6.0 | 2.9 | 1.0 | 1.8 | 0.0 | 542 |
| 09/09/17 | 29.2 | 61.2 | 75.3 | 29.8 | 196 | 226 | 56 | 16 | 18 | 55 | 13 | 1,596 | 6.0 | 2.9 | 1.0 | 1.7 | 0.0 | 540 |
| 10/12/17 | 30.4 | 74.0 | 74.4 | 29.9 | 209 | 239 | 55 | 69 | 19 | 55 | 15 | 1,577 | 6.0 | 2.9 | 1.0 | 1.6 | 0.0 | 539 |
| 11/29/17 | 30.8 | 84.3 | 62.8 | 30.2 | 208 | 240 | 54 | 51 | 50 | 54 | 13 | 1,571 | 5.5 | 2.5 | 0.5 | 1.5 | 0.0 | 532 |
| 12/20/17 | 31.0 | 80.5 | 63.6 | 30.4 | 205 | 237 | 54 | 53 | 46 | 54 | 14 | 1,551 | 5.5 | 2.5 | 0.5 | 1.5 | 0.0 | 532 |
| 01/11/18 | 31.0 | 78.8 | 63.6 | 30.0 | 203 | 231 | 54 | 53 | 45 | 54 | 20 | 1,591 | 5.5 | 2.5 | 0.5 | 1.5 | 0.0 | 528 |
| 02/01/18 | 30.9 | 61.5 | 69.8 | 29.5 | 192 | 224 | 54 | 11 | 23 | 55 | 17 | 1,563 | 5.9 | 2.5 | 0.5 | 1.5 | 0.0 | 530 |
| 03/01/18 | 30.5 | 97.0 ⁶ | 60.0 | 29.4 | 217 ⁸ | 248 | 55 | 7 | 52 | 55 | 19 | 1,555 | 0.6 ⁷ | 0.0 ⁷ | 0.2 ⁷ | 0.0 ⁷ | 0.2 | 532 |
| 04/04/18 | 30.4 | 88.5 | 59.7 | 29.8 | 208 | 239 | 55 | 6 | 51 | 55 | 23 | 1,522 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 532 |
| 05/11/18 | 30.1 | 80.4 | 76.0 | 30.3 | 217 | 219 | 54 | 6 | 7 | 54 | 20 | 1,888 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 531 |
| 06/07/18 | 30.1 | 60.0 | 75.6 | 30.0 | 196 | 201 | 54 | 5 | 6 | 55 | 13 | 1,859 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 535 |
| 07/11/18 | 30.2 | 95.5 | 81.5 | 30.7 | 238 | 241 | 52 | 6 | 5 | 53 | 15 | 1,817 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 545 |
| 08/07/18 | 30.7 | 77.8 | 80.7 | 30.7 | 220 | 227 | 53 | 5 | 4 | 54 | 15 | 1,827 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 540 |
| 09/05/18 | 30.6 | 62.7 | 81.0 | 30.9 | 205 | 208 | 53 | 5 | 4 | 53 | 9 | 1,841 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 542 |

Abbreviations, Notes, and Units on last page.

Table 7
Summary of System Parameters
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

Abbreviations, Notes, and Units:

| | |
|-------|--|
| ECU | Emission Control Unit |
| GAC | Granular Activated Carbon |
| HMI | Human-Machine Interface |
| PPZ | Potassium Permanganate-impregnated Zeolite |
| RW | Remedial Well |
| SCADA | Supervisory Control and Data Acquisition |
| Temp | Temperature |

1. Operational data collected by Arcadis on days noted. Parameters listed were typically recorded during compliance monitoring events. Data in this table correspond to approximately the past year of system operation.
2. Instantaneous parameters obtained from the SCADA HMI: Water Flow Rate, Water Pressure, Air Flow Rate.
3. Combined influent water-flow rate is the sum of individual well flow rates via the SCADA System.
4. Remedial Well effluent pressure readings measured at the influent manifold within the treatment system building.
5. Instantaneous values recorded from field-mounted instruments during weekly site visits.
6. RW-2 flow rate was increased on 2/15/2018 to test for performance and life cycle gains.
7. The ECUs were placed in a parallel configuration on 3/1/2018 for performance gain.
8. Combined influent on 3/01/2018 was erroneously reported as 120 gpm in the 1Q OMM Report.

| | |
|------|--------------------------------|
| gpm | gallons per minute |
| iwc | inches of water column |
| psi | pounds per square inch |
| °R | degrees Rankine |
| scfm | standard cubic feet per minute |

Table 8
Summary of Groundwater Recovered, VOC Mass Recovered, and VOC Mass Recovery Rates
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York



| Operating Period ¹ | Volume of Groundwater Recovered (x1,000 gal) ² | | | | | VOC Mass Recovered (lbs) ³ | | | | | | | | | | | | | | | VOC Mass Recovery Rate (lbs/day) ⁴ | | | | | | | | | | | | | | |
|--|--|---------|---------|---------|---------|---------------------------------------|-------|-------|-------|-------|---------------------------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|---|-------|-------|-------|---------------------------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------|-------|
| | | | | | | Total VOCs ⁵ | | | | | Project VOCs ⁶ | | | | | Non-Project VOCs ⁷ | | | | | Total VOCs ⁵ | | | | Project VOCs ⁶ | | | | Non-Project VOCs ⁷ | | | | | | |
| | RW-1 | RW-2 | RW-3 | RW-4 | Total | RW-1 | RW-2 | RW-3 | RW-4 | Total | RW-1 | RW-2 | RW-3 | RW-4 | Total | RW-1 | RW-2 | RW-3 | RW-4 | Total | RW-1 | RW-2 | RW-3 | RW-4 | Total | RW-1 | RW-2 | RW-3 | RW-4 | Total | RW-1 | RW-2 | RW-3 | RW-4 | Total |
| System Pilot Test, Shakedown and Startup Totals⁸ | 137 | 270 | 251 | 150 | 808 | NA | NA | NA | NA | 1.1 | NA | NA | NA | NA | 1.0 | NA | NA | NA | NA | 0.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2010 Totals | 15,726 | 35,127 | 38,160 | 15,689 | 104,702 | 0.56 | 172 | 412 | 89 | 672 | 0.56 | 171 | 28 | 10 | 200 | <0.01 | 0.17 | 383 | 89 | 469 | <0.01 | 0.46 | 1.1 | 0.24 | 1.8 | <0.01 | 0.46 | 0.075 | <0.01 | 0.54 | <0.01 | <0.01 | 1.0 | 0.24 | 1.3 |
| 2011 Totals | 15,218 | 36,570 | 37,682 | 15,196 | 104,666 | 0.36 | 167 | 271 | 78 | 516 | 0.36 | 167 | 35 | 0.090 | 203 | <0.01 | 1.1 | 236 | 78 | 314 | <0.01 | 0.45 | 0.73 | 0.21 | 1.4 | <0.01 | 0.45 | 0.095 | <0.01 | 0.55 | <0.01 | <0.01 | 0.64 | 0.21 | 0.85 |
| 2012 Totals | 15,260 | 35,178 | 36,111 | 15,336 | 101,885 | 0.28 | 114 | 113 | 40 | 267 | 0.25 | 113 | 12 | 0.39 | 126 | <0.01 | 1.5 | 101 | 40 | 141 | <0.01 | 0.31 | 0.31 | 0.11 | 0.73 | <0.01 | 0.31 | 0.032 | <0.01 | 0.35 | <0.01 | <0.01 | 0.28 | 0.11 | 0.39 |
| 2013 Totals | 15,968 | 37,514 | 36,622 | 16,036 | 106,140 | 0.14 | 111 | 41 | 18 | 171 | 0.14 | 110 | 4.3 | 0.36 | 113 | <0.01 | 1.6 | 37 | 18 | 57 | <0.01 | 0.30 | 0.11 | 0.050 | 0.47 | <0.01 | 0.30 | 0.012 | <0.01 | 0.31 | <0.01 | <0.01 | 0.10 | 0.049 | 0.16 |
| 2014 Totals | 15,690 | 33,222 | 31,199 | 15,691 | 95,802 | 0.063 | 67 | 9.9 | 8.1 | 85 | 0.063 | 65 | 2.0 | 0.20 | 67 | <0.01 | 1.5 | 8.1 | 7.9 | 17 | <0.01 | 0.19 | 0.028 | 0.023 | 0.24 | <0.01 | 0.18 | <0.01 | <0.01 | 0.19 | <0.01 | <0.01 | 0.023 | 0.022 | 0.047 |
| 2015 Totals | 15,859 | 38,082 | 34,961 | 14,755 | 103,657 | 0.028 | 47 | 7.1 | 4.5 | 57 | 0.021 | 45 | 1.5 | 0.20 | 45 | <0.01 | 1.7 | 5.6 | 4.2 | 12 | <0.01 | 0.13 | 0.019 | 0.012 | 0.16 | <0.01 | 0.12 | <0.01 | <0.01 | 0.12 | <0.01 | <0.01 | 0.015 | 0.012 | 0.032 |
| 2016 Totals | 15,826 | 34,539 | 39,349 | 15,826 | 105,540 | <0.01 | 38 | 3.2 | 2.2 | 44 | <0.01 | 37 | 1.4 | 0.20 | 39 | <0.01 | 1.5 | 1.7 | 2.0 | 5.2 | <0.01 | 0.10 | <0.01 | <0.01 | 0.12 | <0.01 | 0.10 | <0.01 | <0.01 | 0.11 | <0.01 | <0.01 | <0.01 | <0.01 | 0.014 |
| 2017 Totals | 16,005 | 31,600 | 37,614 | 15,965 | 101,184 | <0.01 | 13 | 2.2 | 1.2 | 17 | <0.01 | 13 | 1.1 | 0.16 | 14 | <0.01 | 0.56 | 1.1 | 1.1 | 2.7 | <0.01 | 0.037 | <0.01 | <0.01 | 0.046 | <0.01 | 0.035 | <0.01 | <0.01 | 0.038 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| January 2018 through March 2018 Totals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 01/01/18 - 02/01/18 | 1,368 | 3,184 | 1,951 | 1,324 | 7,828 | <0.01 | 1.5 | 0.053 | 0.067 | 1.6 | <0.01 | 1.5 | 0.042 | <0.01 | 1.5 | <0.01 | 0.029 | 0.011 | 0.058 | 0.098 | <0.01 | 0.048 | <0.01 | <0.01 | 0.052 | <0.01 | 0.048 | <0.01 | <0.01 | 0.050 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 02/01/18 - 03/01/18 | 1,192 | 2,913 | 1,207 | 1,159 | 6,471 | <0.01 | 1.4 | 0.033 | 0.059 | 1.5 | <0.01 | 1.3 | 0.026 | <0.01 | 1.3 | <0.01 | 0.027 | <0.01 | 0.051 | 0.078 | <0.01 | 0.049 | <0.01 | <0.01 | 0.052 | <0.01 | 0.046 | <0.01 | <0.01 | 0.048 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 03/01/18 - 04/01/18 | 1,343 | 4,300 | 1,828 | 1,322 | 8,794 | <0.01 | 2.0 | 0.050 | 0.067 | 2.1 | <0.01 | 2.0 | 0.040 | <0.01 | 2.0 | <0.01 | 0.039 | 0.010 | 0.058 | 0.11 | <0.01 | 0.065 | <0.01 | <0.01 | 0.068 | <0.01 | 0.065 | <0.01 | <0.01 | 0.066 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Subtotal Jan - Mar 2018 ⁹ | 3,904 | 10,397 | 4,986 | 3,806 | 23,093 | <0.01 | 4.9 | 0.14 | 0.19 | 5.2 | <0.01 | 4.8 | 0.11 | <0.01 | 4.9 | <0.01 | 0.10 | 0.021 | 0.17 | 0.28 | <0.01 | 0.054 | <0.01 | <0.01 | 0.058 | <0.01 | 0.053 | <0.01 | <0.01 | 0.055 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| April 2018 through June 2018 Totals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 04/01/18 - 05/01/18 | 1,132 | 3,140 | 2,376 | 1,105 | 7,754 | <0.01 | 1.5 | 0.059 | 0.057 | 1.6 | <0.01 | 1.5 | 0.044 | <0.01 | 1.5 | <0.01 | 0.026 | 0.015 | 0.052 | 0.09 | <0.01 | 0.050 | <0.01 | <0.01 | 0.054 | <0.01 | 0.049 | <0.01 | <0.01 | 0.051 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 05/01/18 - 06/01/18 | 1,168 | 2,864 | 2,910 | 1,169 | 8,111 | <0.01 | 1.4 | 0.073 | 0.061 | 1.5 | <0.01 | 1.3 | 0.054 | <0.01 | 1.4 | <0.01 | 0.024 | 0.019 | 0.055 | 0.097 | <0.01 | 0.044 | <0.01 | <0.01 | 0.048 | <0.01 | 0.043 | <0.01 | <0.01 | 0.045 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 06/01/18 - 07/01/18 | 1,128 | 2,762 | 2,233 | 1,105 | 7,228 | <0.01 | 1.3 | 0.056 | 0.057 | 1.4 | <0.01 | 1.3 | 0.041 | <0.01 | 1.3 | <0.01 | 0.023 | 0.014 | 0.052 | 0.09 | <0.01 | 0.044 | <0.01 | <0.01 | 0.048 | <0.01 | 0.043 | <0.01 | <0.01 | 0.045 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Subtotal Apr - Jun 2018 ¹⁰ | 3,429 | 8,765 | 7,519 | 3,379 | 23,092 | <0.01 | 4.2 | 0.19 | 0.18 | 4.5 | <0.01 | 4.1 | 0.14 | <0.01 | 4.2 | <0.01 | 0.073 | 0.048 | 0.16 | 0.28 | <0.01 | 0.046 | <0.01 | <0.01 | 0.050 | <0.01 | 0.045 | <0.01 | <0.01 | 0.047 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| July 2018 through September 2018 Totals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 07/01/18 - 08/01/18 | 1,264 | 3,773 | 2,790 | 1,257 | 9,084 | <0.01 | 0.6 | 0.083 | 0.062 | 0.8 | <0.01 | 0.6 | 0.067 | <0.01 | 0.7 | <0.01 | 0.024 | 0.016 | 0.062 | 0.10 | <0.01 | 0.021 | <0.01 | <0.01 | 0.025 | <0.01 | 0.020 | <0.01 | <0.01 | 0.022 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 08/01/18 - 09/01/18 | 1,299 | 3,134 | 3,391 | 1,321 | 9,145 | <0.01 | 0.5 | 0.10 | 0.065 | 0.7 | <0.01 | 0.5 | 0.082 | <0.01 | 0.6 | <0.01 | 0.020 | 0.019 | 0.065 | 0.10 | <0.01 | 0.017 | <0.01 | <0.01 | 0.023 | <0.01 | 0.017 | <0.01 | <0.01 | 0.019 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 09/01/18 - 10/01/18 | 1,306 | 3,552 | 3,479 | 1,302 | 9,639 | <0.01 | 0.6 | 0.10 | 0.064 | 0.8 | <0.01 | 0.6 | 0.084 | <0.01 | 0.7 | <0.01 | 0.022 | 0.020 | 0.064 | 0.11 | <0.01 | 0.020 | <0.01 | <0.01 | 0.026 | <0.01 | 0.019 | <0.01 | <0.01 | 0.022 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Subtotal July - Sept 2018 ¹¹ | 3,869 | 10,459 | 9,660 | 3,880 | 27,868 | <0.01 | 1.8 | 0.29 | 0.19 | 2.3 | <0.01 | 1.7 | 0.23 | <0.01 | 1.9 | <0.01 | 0.065 | 0.055 | 0.19 | 0.31 | <0.01 | 0.019 | <0.01 | <0.01 | 0.024 | <0.01 | 0.019 | <0.01 | <0.01 | 0.021 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 2018 Totals | 11,202 | 29,621 | 22,165 | 11,065 | 74,053 | <0.01 | 10.8 | 0.62 | 0.56 | 12.0 | <0.01 | 10.6 | 0.48 | <0.01 | 11.1 | <0.01 | 0.23 | 0.12 | 0.52 | 0.87 | <0.01 | 0.040 | <0.01 | <0.01 | 0.044 | <0.01 | 0.039 | <0.01 | <0.01 | 0.041 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Total ¹² | 143,483 | 325,561 | 330,559 | 142,283 | 941,886 | 1.6 | 1,015 | 913 | 256 | 2,184 | 1.6 | 1,004 | 104 | 1.9 | 1,112 | <0.01 | 10 | 809 | 254 | 1,066 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units:

NA Not Applicable
VOC Volatile Organic Compound.

1. Represents operating period between consecutive monitoring events.
2. Volume of groundwater recovered is based on individual local well totalized flow readings. Listed value is the difference between totalized flow values recorded between consecutive monitoring events. The total groundwater recovered during a given operating period is the sum of the individual well flow totals. Values shown are rounded to the nearest gallon, but should only be considered accurate to two significant figures to account for error associated with field measurements.
3. Mass recovered per well was calculated by multiplying the Total VOC concentration from the most recent sampling event by the number of gallons extracted during the reporting period. The total amount recovered during a given operating period is the sum of masses recovered from each of the individual wells. Values less than ten pounds are presented using two significant figures and values greater than ten pounds have been rounded to the nearest whole number; however, these values should only be considered accurate to two significant figures to account for error associated with field measurements and analytical data.
4. Mass recovery rates were calculated by dividing the total mass recovered for each well and for the system by the number of days in the respective operating period. Values are presented using two significant figures.
5. "Total VOCs" represents the sum of individual concentrations of the VOCs detected.
6. "Project VOCs" represents the sum of individual compound concentrations of 1,1,1-trichloroethane; 1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichloroethene; tetrachloroethene; trichloroethylene; vinyl chloride; cis-1,2-dichloroethene; trans-1,2-dichloroethene; benzene; toluene; and xylenes-o,m, p.
7. "Non-Project VOCs" represents the difference between Total VOCs and Project VOCs.
8. Values based on operational data recorded prior to system startup on July 21, 2009.
9. The volume of groundwater recovered and mass recovered calculations represent the operational period between January 1, 2018 and April 1, 2018.
10. The volume of groundwater recovered and mass recovered calculations represent the operational period between April 1, 2018 and July 1, 2018.
11. The volume of groundwater recovered and mass recovered calculations represent the operational period between July 1, 2018 and October 1, 2018.
12. "Total" refers to the amounts removed by the Operable Unit 3 Bethpage Park Groundwater Containment System.

< Less than
gal Gallons
lbs Pounds
lbs/day Pounds per day

Table 9
Summary of Air Quality Impact Analysis
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York



| Toxic Air Contaminant | VSP-05 Vapor Effluent (µg/m ³) | Emission Rate ¹ | | | Scaled Impact - Hourly ² (µg/m ³) | Scaled Impact - Annual ² (µg/m ³) | SGC ³ (µg/m ³) | AGC ³ (µg/m ³) | % of SGC | % of AGC |
|--|--|----------------------------|----------|----------|--|--|---------------------------------------|---------------------------------------|----------|----------|
| | 8/7/2018 | lb/yr | lb/hr | g/s | | | | | | |
| Project VOCs | | | | | | | | | | |
| 1,1,1-Trichloroethane | 0.5 | 0.03 | 3.39E-06 | 4.27E-07 | 1.35E-03 | 4.12E-05 | 9,000 | 5.00E+03 | 0.0% | 0.0% |
| 1,1-Dichloroethane | 3 | 0.18 | 2.03E-05 | 2.6E-06 | 8.1E-03 | 2.5E-04 | -- | 0.63 | -- | 0.0% |
| 1,2-Dichloroethane | 0.79 | 0.05 | 5.35E-06 | 6.74E-07 | 2.13E-03 | 6.50E-05 | -- | 3.8E-02 | -- | 0.2% |
| Benzene | 1.7 | 0.10 | 1.15E-05 | 1.5E-06 | 4.6E-03 | 1.4E-04 | 1,300 | 0.13 | 0.0% | 0.1% |
| cis-1,2-Dichloroethene | 43.2 | 2.60 | 2.93E-04 | 3.7E-05 | 1.2E-01 | 3.6E-03 | -- | 63 | -- | 0.0% |
| Tetrachloroethene | 1.3 | 0.08 | 8.80E-06 | 1.1E-06 | 3.5E-03 | 1.1E-04 | 300 | 4 | 0.0% | 0.0% |
| Toluene | 5.3 | 0.31 | 3.59E-05 | 4.5E-06 | 1.4E-02 | 4.4E-04 | 37,000 | 5,000 | 0.0% | 0.0% |
| Trichloroethene | 16 | 0.95 | 1.08E-04 | 1.4E-05 | 4.3E-02 | 1.3E-03 | 20 | 0.20 | 0.2% | 0.7% |
| Vinyl Chloride | 14 | 0.83 | 9.48E-05 | 1.2E-05 | 3.8E-02 | 1.2E-03 | 180,000 | 0.11 | 0.0% | 1.0% |
| Xylene-O | 0.34 J | 0.02 | 2.30E-06 | 2.90E-07 | 9.15E-04 | 2.8E-05 | 22,000 | 100 | 0.0% | 0.0% |
| Xylenes - M,P | 0.56 J | 0.03 | 3.79E-06 | 4.8E-07 | 1.5E-03 | 4.6E-05 | 22,000 | 100 | 0.0% | 0.0% |
| Non-Project VOCs | | | | | | | | | | |
| 1-Chloro-1,1-difluoroethane (Freon 142b) | 0.36 J | 0.02 | 2.44E-06 | 3.07E-07 | 9.69E-04 | 3.0E-05 | -- | 50,000 | -- | 0.0% |
| 2-Butanone | 43.1 | 2.60 | 2.92E-04 | 3.7E-05 | 1.2E-01 | 3.5E-03 | 13,000 | 5,000 | 0.0% | 0.0% |
| Acetone | 238 | 14 | 1.61E-03 | 2.0E-04 | 6.4E-01 | 2.0E-02 | 180,000 | 30,000 | 0.0% | 0.0% |
| Carbon Disulfide | 0.26 J | 0.02 | 1.76E-06 | 2.2E-07 | 7.0E-04 | 2.1E-05 | 6,200 | 700 | 0.0% | 0.0% |
| Carbon Tetrachloride | 0.46 | 0.03 | 3.12E-06 | 3.93E-07 | 1.24E-03 | 3.79E-05 | 1900 | 1.7E-01 | 0.0% | 0.0% |
| Chlorodifluoromethane (Freon 22) | 11 | 0.65 | 7.45E-05 | 9.4E-06 | 3.0E-02 | 9.1E-04 | -- | 50,000 | -- | 0.0% |
| Chloroform | 9.3 | 0.55 | 6.30E-05 | 7.9E-06 | 2.5E-02 | 7.7E-04 | 150 | 15 | 0.0% | 0.0% |
| Chloromethane | 2.3 | 0.14 | 1.56E-05 | 2.0E-06 | 6.2E-03 | 1.9E-04 | 22,000 | 90 | 0.0% | 0.0% |
| Dichlorodifluoromethane (Freon 12) | 2.3 | 0.14 | 1.56E-05 | 2.0E-06 | 6.2E-03 | 1.9E-04 | -- | 12,000 | -- | 0.0% |
| Dichloromethane | 1.3 | 0.08 | 8.80E-06 | 1.1E-06 | 3.5E-03 | 1.1E-04 | 14,000 | 60 | 0.0% | 0.0% |
| Trichlorofluoromethane (Freon 11) | 2.1 | 0.12 | 1.42E-05 | 1.8E-06 | 5.7E-03 | 1.7E-04 | 9,000 | 5,000 | 0.0% | 0.0% |
| Trichlorotrifluoroethane (Freon 113) | 2.1 | 0.12 | 1.42E-05 | 1.8E-06 | 5.7E-03 | 1.7E-04 | 960,000 | 180,000 | 0.0% | 0.0% |

Abbreviations, Notes, and Units on last page.

Table 9
Summary of Air Quality Impact Analysis
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York



Abbreviations, Notes, and Units:

| | |
|--------|---|
| AGC | Annual Guideline Concentration |
| CAS# | Chemical Abstracts Service Registry Number |
| DAR-1 | Division of Air Resources-1 |
| -- | None Specified |
| NYSDEC | New York State Department of Environmental Conservation |
| SGC | Short-term Guideline Concentration |
| VSP | Vapor Sampling Point |
| J | Result is estimated. |

- Emission rate calculated based on VSP-05 effluent concentration and a daily average exit air flow rate of 1,812 ft³/min for 8/7/2018.
 $1,1,1\text{-Trichloroethane (lb/hr)} = \text{TCE } [\mu\text{g/m}^3] \times \text{Air Flow Rate } [\text{ft}^3/\text{min}] \times (1 \text{ m}^3/35.3147 \text{ ft}^3) \times (60 \text{ min/hr}) \times (0.000001 \text{ g/1 } \mu\text{g}) \times (0.0022 \text{ lb/g})$
 $\text{lb/yr} = \text{lb/hr} \times 8,760 \text{ hrs/yr}$
 $\text{g/s} = \text{lb/hr} \times \text{hr}/3,600 \text{ sec} \times 453.59 \text{ g/lb}$
- Ambient impact based on AERMOD modeling using normalized rate of 1 g/s is scaled to the actual emission rate of the pollutant. Modeling was performed using the representative meteorological data from the nearest station (Brookhaven/Farmingdale) for the years 2011 through 2015. The maximum impact from all the years was used for the calculations.
 $\text{Scaled hourly impact } (\mu\text{g/m}^3) = \text{AERMOD predicted hourly ambient impact at 1 g/s } ([\mu\text{g/m}^3]/[\text{g/s}]) \times \text{Actual emission rate (g/s)}$
 $\text{Scaled annual impact } (\mu\text{g/m}^3) = \text{AERMOD predicted annual ambient impact at 1 g/s } ([\mu\text{g/m}^3]/[\text{g/s}]) \times \text{Actual emission rate (g/s)}$

| AERMOD Normalized Ambient Impact at 1 g/s | |
|---|---|
| Hourly ($[\mu\text{g/m}^3]/[\text{g/s}]$) | Annual ($[\mu\text{g/m}^3]/[\text{g/s}]$) |
| 3,153.03 | 96.49 |

- Short-term and annual guideline concentrations specified in the NYSDEC DAR-1 AGC/SGC tables revised August 10, 2016.
- Compounds not detected above the laboratory reporting limit are excluded from the air quality impact analysis summary.

| | |
|-------------------|----------------------------|
| cfm | cubic feet per minute |
| g/s | grams per second |
| lb/hr | pounds per hour |
| lb/yr | pounds per year |
| $\mu\text{g/m}^3$ | micrograms per cubic meter |

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) | Sample Location: | B24MW-2 | B24MW-2 | B24MW-2 | B24MW-2 | B24MW-2 | B24MW-3 | B24MW-3 |
|--------------------------------------|------------------|------------|--------------|--------------|--------------|---------------|---------------|---------------|
| (units in µg/L) | Sample Date: | 11/13/2014 | 12/28/2015 | 12/29/2016 | 8/4/2017 | 8/9/2018 | 11/13/2014 | 12/28/2015 |
| | NYSDEC | | | | | | | |
| | SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 J | < 10 |
| Benzene | 1 | < 1.0 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 4.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 4.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.28 J | 0.30 J |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 5.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 5.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tolene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 2.7 | 2.7 | 2.4 | 2.1 | 2.5 | < 1.0 | 0.25 J |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 2.7 | 2.7 | 2.4 | 2.1 | 2.5 | 0.28 | 0.55 |
| Project VOCs ⁽⁴⁾ | | 2.7 | 2.7 | 2.4 | 2.1 | 2.5 | 0 | 0.25 |
| 1,4-Dioxane | | -- | 0.185 | 0.417 | 0.348 | 0.16 J | -- | 0.257 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) | Sample Location: | B24MW-3 | B24MW-3 | B24MW-3 | B30MW-1 | B30MW-1 | B30MW-1 | B30MW-1 |
|--------------------------------------|------------------|--------------|---------------|---------------|------------|------------------|-------------------|-------------------|
| (units in µg/L) | Sample Date: | 1/20/2017 | 8/2/2017 | 8/9/2018 | 11/13/2014 | 12/31/2015 | 1/4/2017 | 8/3/2017 |
| | NYSDEC | | | | | | | |
| | SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 1.0 | < 1.0 | < 4.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | < 1.0 | 0.59 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 2.0 | < 2.0 | < 5.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 0 | 0.59 | 0 | 0 | 0 | 0 | 0 |
| Project VOCs ⁽⁴⁾ | | 0 | 0.59 | 0 | 0 | 0 | 0 | 0 |
| 1,4-Dioxane | | 0.918 | 0.675 | 0.11 J | -- | < 0.10 | < 0.200 | < 0.200 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) (units in µg/L) | Sample Location: Sample Date: | B30MW-1 8/9/2018 | BCPMW-4-1 11/17/2014 | BCPMW-4-1 10/8/2015 | BCPMW-4-1 12/30/2015 | BCPMW-4-1 12/28/2016 | BCPMW-4-1 7/31/2017 | BCPMW-4-1 7/24/2018 |
|--|----------------------------------|---------------------|-------------------------|------------------------|-------------------------|-------------------------|------------------------|------------------------|
| | NYSDEC SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | 2.4 | 4.2 | 7.3 | 0.36 J | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | 0.42 J | 1.1 | 1.7 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | 7.3 | 13.3 | 27.1 | 3.2 | 1.6 | 0.87 J |
| 1,1-Dichloroethene | 5 | < 1.0 | 1.1 | 0.98 J | 1.7 | 0.42 J | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | 0.70 J | 0.97 J | 1.3 | 0.87 J | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | 0.61 J | 0.95 | 1.5 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 1.0 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 4.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | 0.61 J | 0.70 J | 1.1 | 1.4 | 0.76 J | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | < 1.0 | 207 D | 156 | 252 D | 81.4 | 53.5 | 30.7 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 5.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | 0.80 J | 1.1 | 1.1 | 0.50 J | < 1.0 | < 1.0 |
| Tolene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | 0.59 J | < 1.0 | 0.86 J | 0.49 J | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | < 1.0 | 34.7 | 68.1 | 81.5 | 48.2 | 21.9 | 13.5 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | 21 | 13 | 197 | 3.3 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | 0.70 J | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 0 | 280 | 260 | 570 | 140 | 78 | 45 |
| Project VOCs ⁽⁴⁾ | | 0 | 280 | 260 | 570 | 140 | 77 | 45 |
| 1,4-Dioxane | | < 0.24 | -- | -- | 37.7 | 39.3 | 2.64 | 0.68 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) (units in µg/L) | Sample Location: Sample Date: | BCPMW-4-2 11/18/2014 | BCPMW-4-2 10/8/2015 | BCPMW-4-2 12/31/2015 | BCPMW-4-2 (REP) 12/31/2015 | BCPMW-4-2 12/22/2016 | BCPMW-4-2 (REP) 12/22/2016 | BCPMW-4-2 7/31/2017 |
|--|----------------------------------|-------------------------|------------------------|-------------------------|-------------------------------|-------------------------|-------------------------------|------------------------|
| | NYSDEC SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | 0.48 J | 0.23 J | 0.24 J | 0.22 J | 0.23 J | 0.25 J |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 1.0 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 4.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | 3.2 | 1.3 | 2.0 | 2.0 | 3.9 | 3.6 | 2.3 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 8.6 | 29.7 | 13.3 | 13.2 | 16.9 | 17.4 | 19.9 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 5.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.27 J | < 1.0 |
| Toluene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.62 J | 0.58 J | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 9.1 | 25.6 | 16.0 | 16.3 | 18.0 | 18.1 | 17.6 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | 1.6 | 3.7 | 0.96 J | 0.92 J | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 23 | 61 | 32 | 33 | 40 | 40 | 40 |
| Project VOCs ⁽⁴⁾ | | 19 | 59 | 30 | 31 | 36 | 37 | 38 |
| 1,4-Dioxane | | -- | -- | 0.858 | 0.982 | 2.34 | 2.40 | 1.35 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) | Sample Location: | BCPMW-4-2 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-6-1 |
|--------------------------------------|------------------|---------------|---------------|--------------|---------------|--------------|-------------|------------|
| (units in µg/L) | Sample Date: | 7/24/2018 | 11/17/2014 | 12/31/2015 | 12/22/2016 | 8/3/2017 | 8/8/2018 | 11/11/2014 |
| | NYSDEC | | | | | | | |
| | SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | 0.87 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 1.0 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 1.0 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 4.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 4.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 J | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | 1.3 | 0.58 J | < 1.0 | 0.52 J | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 58.1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 5.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 5.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tolene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 61.5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 J | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 120 | 0.58 | 0 | 0.52 | 0 | 0 | 0 |
| Project VOCs ⁽⁴⁾ | | 120 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1,4-Dioxane | | 2.4 | -- | 0.263 | 0.776 | 0.616 | 0.43 | -- |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) | Sample Location: | BCPMW-6-1 | BCPMW-6-1 | BCPMW-6-1 | BCPMW-6-1 | BCPMW-6-2 | BCPMW-6-2 | BCPMW-6-2 |
|--------------------------------------|------------------|------------|------------|-----------|--------------|---------------|------------|------------|
| (units in µg/L) | Sample Date: | 12/23/2015 | 12/27/2016 | 8/1/2017 | 8/6/2018 | 11/11/2014 | 12/23/2015 | 12/27/2016 |
| | NYSDEC | | | | | | | |
| | SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.41 J | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 4.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | 3.7 J | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.30 J | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 5.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.26 J | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.35 J | < 1.0 | < 1.0 |
| Tolene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 0 | 0 | 0 | 3.7 | 1.3 | 0 | 0 |
| Project VOCs ⁽⁴⁾ | | 0 | 0 | 0 | 0 | 0.76 | 0 | 0 |
| 1,4-Dioxane | | < 0.10 | < 0.200 | < 0.200 | < 0.24 | -- | < 0.10 | < 0.200 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) | Sample Location: | BCPMW-6-2 | BCPMW-6-2 | BCPMW-7-1 | BCPMW-7-1 | BCPMW-7-1 | BCPMW-7-1 | BCPMW-7-1 |
|--------------------------------------|------------------|---------------|----------------|---------------|------------|------------|-----------|-----------|
| (units in µg/L) | Sample Date: | 8/2/2017 | 8/6/2018 | 11/18/2014 | 12/22/2015 | 12/28/2016 | 8/1/2017 | 8/3/2018 |
| | NYSDEC | | | | | | | |
| | SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | 0.21 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 J | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 J | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 J | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 1.0 | < 4.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | < 1.0 | 0.25 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | < 1.0 | 0.97 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 2.0 | < 5.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 1.0 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 0.21 | 0.97 | 0.25 | 0 | 0 | 0 | 0 |
| Project VOCs ⁽⁴⁾ | | 0.21 | 0.97 | 0 | 0 | 0 | 0 | 0 |
| 1,4-Dioxane | | < 0.100 | 0.092 J | -- | < 0.10 | < 0.200 | < 0.200 | -- |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) | Sample Location: | BCPMW-7-1 | MW-200-1 | MW-200-1 | MW-200-1 | MW-200-1 | MW-200-1 | MW-201-1 |
|--------------------------------------|------------------|------------------|------------|--------------|--------------|--------------|-------------|------------|
| (units in µg/L) | Sample Date: | 8/8/2018 | 11/18/2014 | 12/24/2015 | 1/17/2017 | 8/7/2017 | 7/30/2018 | 11/20/2014 |
| | NYSDEC | | | | | | | |
| | SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 J | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 1.0 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 1.0 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 4.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 4.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 J | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 J | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 3.9 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 5.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 5.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 6.3 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Project VOCs ⁽⁴⁾ | | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 1,4-Dioxane | | < 0.24 | -- | 0.309 | 0.725 | 0.537 | 0.40 | -- |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) (units in µg/L) | Sample Location: Sample Date: | MW-201-1 12/24/2015 | MW-201-1 1/18/2017 | MW-201-1 8/8/2017 | MW-201-1 8/1/2018 | MW-202-1 11/19/2014 | MW-202-1 (REP) 11/19/2014 | MW-202-1 12/31/2015 |
|--|----------------------------------|------------------------|-----------------------|----------------------|----------------------|------------------------|------------------------------|------------------------|
| | NYSDEC SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.70 J | 0.69 J | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 2.4 | 2.2 | 2.4 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 1.7 | 1.8 | 1.5 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 1.0 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 4.0 | < 1.0 | < 1.0 | < 1.0 | < 4.0 | < 4.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | 0.43 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 2.0 | 2.0 | 1.5 | 0.87 J | 1.1 | 1.0 | 1.2 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 5.0 | < 2.0 | < 2.0 | < 2.0 | < 5.0 | < 5.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 5.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 2.3 | 2.4 | 2.5 |
| Tolene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 2.3 | 1.6 | 1.3 | 0.90 J | 2.1 | 2.0 | 1.3 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | 1.8 J | 1.8 J | 1.1 J |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 4.7 | 3.6 | 2.8 | 1.8 | 12 | 12 | 10 |
| Project VOCs ⁽⁴⁾ | | 4.3 | 3.6 | 2.8 | 1.8 | 10 | 10 | 8.9 |
| 1,4-Dioxane | | 0.262 | 0.655 | 0.676 | 0.40 | -- | -- | 0.404 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) (units in µg/L) | Sample Location: Sample Date: | MW-202-1 1/19/2017 | MW-202-1 8/9/2017 | MW-202-1 7/31/2018 | MW-203-1 11/19/2014 | MW-203-1 12/30/2015 | MW-203-1 1/20/2017 | MW-203-1 8/10/2017 |
|--|----------------------------------|-----------------------|----------------------|-----------------------|------------------------|------------------------|-----------------------|-----------------------|
| | NYSDEC SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | 0.66 J | 0.80 J | < 1.0 | 0.60 J | 0.38 J | 0.30 J | 0.34 J |
| 1,1-Dichloroethene | 5 | 0.33 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 1.0 | < 1.0 | < 4.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | 1.9 J | 2.0 J | 3.3 J |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | < 1.0 | < 1.0 | 0.34 J | 0.32 J | 0.27 J | 0.35 J |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 0.45 J | < 1.0 | < 1.0 | 0.39 J | 0.35 J | 0.92 J | 0.55 J |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 2.0 | < 2.0 | < 5.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | 1.1 | 0.58 J | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | 1.3 | 1.4 | 1.1 | 1.1 | 1.2 | 0.76 J | 1.2 |
| Toluene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 0.68 J | 0.96 J | 0.70 J | 3.2 | 2.5 | 3.9 | 2.9 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | 0.56 J | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 3.4 | 3.2 | 1.8 | 6.7 | 7.8 | 8.2 | 8.6 |
| Project VOCs ⁽⁴⁾ | | 3.4 | 3.2 | 1.8 | 5.2 | 4.4 | 5.9 | 5.0 |
| 1,4-Dioxane | | 0.396 | 0.518 | 0.30 | -- | 0.134 | 0.401 | 0.262 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) (units in µg/L) | Sample Location: Sample Date: | MW-203-1 8/2/2018 | MW-204-1 12/24/2015 | MW-204-1 1/17/2017 | MW-204-1 8/7/2017 | MW-204-1 (REP) 8/7/2017 | MW-204-1 7/30/2018 | MW-205-1 12/29/2015 |
|--|----------------------------------|----------------------|------------------------|-----------------------|----------------------|----------------------------|-----------------------|------------------------|
| | NYSDEC SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 J | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | 3.0 J |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 J | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 J | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | < 1.0 | 0.50 J | 0.24 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | < 1.0 | 2.5 | 3.4 | < 1.0 | < 1.0 | < 1.0 | 1.1 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 2.6 | 4.0 | 4.1 | 2.4 | 2.5 | 0.63 J | 0.76 J |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 2.6 | 7.0 | 7.7 | 2.4 | 2.5 | 0.63 | 4.9 |
| Project VOCs ⁽⁴⁾ | | 2.6 | 6.5 | 7.5 | 2.4 | 2.5 | 0.63 | 1.9 |
| 1,4-Dioxane | | 0.19 J | < 0.11 | 0.350 | 0.306 | 0.319 | 0.25 J | 0.162 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) (units in µg/L) | Sample Location: Sample Date: | MW-205-1 1/18/2017 | MW-205-1 8/8/2017 | MW-205-1 8/1/2018 | MW-206-1 12/29/2015 | MW-206-1 1/19/2017 | MW-206-1 8/9/2017 | MW-206-1 7/31/2018 |
|--|----------------------------------|-----------------------|----------------------|----------------------|------------------------|-----------------------|----------------------|-----------------------|
| | NYSDEC SCGs | | | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.27 J | 0.76 J | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | 0.44 J | 0.74 J | 3.0 | 0.96 J |
| 1,1-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 0.27 J | 1.7 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | 0.64 J | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 0.39 J | 0.62 J | 0.76 J | 0.32 J | 0.92 J | 1.3 | 0.56 J |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | 0.45 J | 0.56 J | 2.8 | 1.4 |
| Toluene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 0.91 J | 0.41 J | < 1.0 | < 1.0 | < 1.0 | 0.65 J | 0.79 J |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 1.9 | 1.0 | 0.76 | 1.2 | 2.8 | 10 | 3.7 |
| Project VOCs ⁽⁴⁾ | | 1.3 | 1.0 | 0.76 | 1.2 | 2.8 | 10 | 3.7 |
| 1,4-Dioxane | | 0.366 | 0.714 | 0.40 | < 0.10 | 0.301 | 1.06 | 0.34 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

| Compound ^(1,2,3) (units in µg/L) | Sample Location: Sample Date: | MW-208-1 12/29/2015 | MW-208-1 1/20/2017 | MW-208-1 8/10/2017 | MW-208-1 8/2/2018 | MW-208-1 (REP) 8/2/2018 |
|--|----------------------------------|------------------------|-----------------------|-----------------------|----------------------|----------------------------|
| | NYSDEC SCGs | | | | | |
| 1,1,1-Trichloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | 1 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | 2.9 | 2.1 | 1.1 | 0.61 J | < 1.0 |
| 1,1-Dichloroethene | 5 | 0.89 J | 0.70 J | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | 0.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 1 | < 1.0 | 0.35 J | < 1.0 | < 1.0 | < 1.0 |
| 2-Butanone | NE | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Hexanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| 4-Methyl-2-Pentanone | 50 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Acetone | NE | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 1 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodifluoromethane (Freon 22) | NE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloroethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroform | 7 | 3.1 | 2.8 | 1.4 | 0.75 J | 0.71 J |
| Chloromethane | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 546 D | 597 | 268 | 129 | 135 |
| cis-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane (Freon 12) | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl-Tert-Butylether | 5 | 0.39 J | 0.43 J | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Styrene (Monomer) | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tolene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | < 1.0 | 0.60 J | 1.6 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 17.4 | 10.9 | 12.8 | 11.7 | 11.4 |
| Trichlorotrifluoroethane (Freon 113) | 5 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Vinyl Chloride | 2 | 6.4 | 3.3 | 1.8 | 1.1 | 0.98 J |
| o-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m,p-Xylene | 5 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total VOCs ⁽⁴⁾ | | 580 | 620 | 290 | 140 | 150 |
| Project VOCs ⁽⁴⁾ | | 570 | 610 | 290 | 140 | 150 |
| 1,4-Dioxane | | 0.526 | 1.02 | 0.800 | 0.51 | 0.35 |

See Notes and Abbreviations on last page

Table 10
Concentrations of Volatile Organic Compounds and 1,4-Dioxane
in Groundwater Samples Collected from Monitoring Wells,
Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds)
Bethpage, New York

Abbreviations, Notes, Qualifiers, and Units

| | |
|--------|---|
| ASP | Analytical Services Protocol |
| -- | Not Analyzed |
| NE | Not Established |
| NYSDEC | New York State Department of Environmental Conservation |
| REP | Field Replicate QA/QC sample |
| SCGs | Standards, Criteria, and Guidance values |
| SIM | Selective Ion Monitoring |
| TCL | Target compound list. |
| USEPA | United State Environmental Protection Agency |
| VOC | Volatile Organic Compound |

1. All historic data available in previous quarterly reports.
2. Results are validated at 20% frequency, per protocols specified in Sampling and Analysis Plan in the Bethpage Park Groundwater Containment System OM&M Manual (ARCADIS 2016).
3. Samples analyzed for the TCL VOCs using NYSDEC ASP 2005 Method OLM4.3 (prior to November 2014) and per USEPA Method 8260C (after November 2014). Samples analyzed for 1,4-Dioxane using USEPA Method 8270D SIM (prior to 2016), per USEPA Method 522 SIM (2016-2017) and per USEPA Method 8270D SIM (since 2018).
4. "Total VOCs" represents the sum of individual concentrations of the VOCs detected. TVOCs were rounded to two significant figures. "Project VOCs" represents the sum of individual concentrations of 1,1,1-Trichloroethane; 1,1-Dichloroethane; 1,2-Dichloroethane; 1,1-Dichloroethene; Tetrachloroethene; Trichloroethene; Vinyl Chloride; cis-1,2-Dichloroethene; trans-1,2-Dichloroethene; Benzene; Toluene; and Xylenes-o,m, and p.

| | |
|-------------|--|
| | Bolded outline indicates an exceedance of an SCG. |
| < 5 | Compound not detected above its laboratory quantification limit. |
| 0.61 | Bold value indicates a detection. |
| <i> </i> | <i>italicized indicates most recent data</i> |
| D | Constituent identified from secondary dilution |
| J | Result is estimated |
| mg/L | Micrograms per liter |

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2,3)

| Constituents (units in ug/L) | Sample Location: | B24MW-2 | B24MW-2 | B24MW-3 | B24MW-3 | B30MW-1 | BCPMW-4-1 | BCPMW-4-1 | BCPMW-4-1 | BCPMW-4-1 | BCPMW-4-1 | BCPMW-4-1 |
|---------------------------------|------------------|-----------|----------|-----------|----------|----------|------------|-----------|------------|------------|-----------|-----------|
| | Sample Date: | 4/23/2009 | 8/9/2018 | 4/20/2009 | 8/9/2018 | 8/9/2018 | 11/17/2014 | 10/8/2015 | 12/30/2015 | 12/28/2016 | 7/31/2017 | 7/24/2018 |
| | NYSDEC SCGs | | | | | | | | | | | |
| Cadmim, Total | | < 5 | < 6.0 | < 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Cadmim, Dissolved | 5 | < 5 | < 3.0 | < 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Chromim, Total | 50 | 40.3 | 153 | 28.2 | 12.5 | < 10 | 24.7 | 24.9 | 22.7 | < 10 | < 10 | < 10 |
| Chromim, Dissolved | 50 | < 10 | < 10 | 10.6 | < 10 | < 10 | 20.7 | 22.1 | 19.2 | < 10 | < 10 | < 10 |
| Iron (total) | 300 | -- | -- | 597 | -- | -- | -- | -- | -- | -- | -- | -- |
| Iron (dissolved) | 300 | -- | -- | < 100 | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (total) | 300 | -- | -- | 16.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (dissolved) | 300 | -- | -- | 13.7 | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units on last page

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2,3)

| Constituents (units in ug/L) | Sample Location: | BCPMW-4-2 | BCPMW-4-2 | BCPMW-4-2 | BCPMW-4-2 | BCPMW-4-2 (REP) | BCPMW-4-2 | BCPMW-4-2 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-4-3 | BCPMW-4-3 |
|---------------------------------|------------------|--------------|-----------|------------|-------------|-----------------|-----------|-----------|--------------|-----------|------------|-------------|-----------|-----------|
| | Sample Date: | 11/18/2014 | 10/8/2015 | 12/31/2015 | 12/22/2016 | 12/22/2016 | 7/31/2017 | 7/24/2018 | 11/17/2014 | 10/9/2015 | 12/31/2015 | 12/22/2016 | 8/3/2017 | 8/8/2018 |
| | NYSDEC SCGs | | | | | | | | | | | | | |
| Cadmim, Total | | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Cadmim, Dissolved | 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Chromim, Total | 50 | 4.1 B | < 10 | < 10 | 17.3 | 20.5 | < 10 | < 10 | 6.8 B | < 10 | < 10 | 11.2 | < 10 | < 10 |
| Chromim, Dissolved | 50 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | 3.7 B | < 10 | < 10 | < 10 | < 10 | < 10 |
| Iron (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Iron (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units on last page

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2,3)

| Constituents (units in ug/L) | Sample Location: | BCPMW-6-1 | BCPMW-6-1 | BCPMW-6-1 | BCPMW-6-1 | BCPMW-6-1 | BCPMW-6-2 | BCPMW-6-2 | BCPMW-6-2 | BCPMW-6-2 | BCPMW-6-2 |
|---------------------------------|------------------|------------|------------|------------|-----------|-----------|------------|------------|------------|-----------|-----------|
| | Sample Date: | 11/11/2014 | 12/23/2015 | 12/27/2016 | 8/1/2017 | 8/6/2018 | 11/11/2014 | 12/23/2015 | 12/27/2016 | 8/2/2017 | 8/6/2018 |
| | NYSDEC SCGs | | | | | | | | | | |
| Cadmim, Total | | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | 3.3 | < 3.0 |
| Cadmim, Dissolved | 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Chromim, Total | 50 | 11.6 | < 10 | 223 | < 10 | < 10 | 13.9 | < 10 | 13.5 | 87.7 | < 10 |
| Chromim, Dissolved | 50 | < 10 B | < 10 | < 10 | < 10 | < 10 | < 10 B | < 10 | < 10 | < 10 | < 10 |
| Iron (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Iron (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units on last page

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2,3)

| Constituents (units in ug/L) | Sample Location: | BCPMW-7-1 | BCPMW-7-1 | BCPMW-7-1 | BCPMW-7-1 | BCPMW-7-1 | BCPMW-7-1 | MW-200-1 | MW-200-1 | MW-200-1 | MW-200-1 | MW-200-1 |
|---------------------------------|------------------|---------------|------------|-------------|-----------|-----------|-----------|-------------|-------------|-----------|-------------|-------------|
| | Sample Date: | 11/18/2014 | 12/22/2015 | 12/28/2016 | 8/1/2017 | 8/3/2018 | 8/8/2018 | 11/18/2014 | 12/24/2015 | 1/17/2017 | 8/7/2017 | 7/30/2018 |
| | NYSDEC SCGs | | | | | | | | | | | |
| Cadmim, Total | | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Cadmim, Dissolved | 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Chromim, Total | 50 | 5.1 B | < 10 | 66.0 | < 10 | < 10 | < 10 | 96.7 | 54.2 | < 10 | 11.1 | 12.4 |
| Chromim, Dissolved | 50 | 0.90 B | < 10 | < 10 | < 10 | < 10 | < 10 | 19 | 29.5 | < 10 | < 10 | < 10 |
| Iron (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Iron (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units on last page

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2,3)

| Constituents (units in ug/L) | Sample Location: | MW-201-1 | MW-201-1 | MW-201-1 | MW-201-1 | MW-201-1 | MW-202-1 | MW-202-1(REP) | MW-202-1 | MW-202-1 | MW-202-1 | MW-202-1 |
|---------------------------------|------------------|--------------|------------|-----------|-------------|----------|--------------|---------------|-------------|-----------|-------------|-------------|
| | Sample Date: | 11/20/2014 | 12/30/2015 | 1/18/2017 | 8/8/2017 | 8/1/2018 | 11/19/2014 | 11/19/2014 | 12/31/2015 | 1/19/2017 | 8/9/2017 | 7/31/2018 |
| | NYSDEC SCGs | | | | | | | | | | | |
| Cadmim, Total | | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Cadmim, Dissolved | 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Chromim, Total | 50 | 6.7 B | < 10 | < 10 | 11.7 | < 10 | 74.3 | 83.8 | 34.9 | < 10 | 73.4 | 21.4 |
| Chromim, Dissolved | 50 | 1.7 B | < 10 | < 10 | < 10 | < 10 | 2.7 B | 2.3 B | < 10 | < 10 | 14.4 | < 10 |
| Iron (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Iron (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units on last page

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2,3)

| Constituents (units in ug/L) | Sample Location: | MW-203-1 | MW-203-1 | MW-203-1 | MW-203-1 | MW-203-1 | MW-204-1 | MW-204-1 | MW-204-1 | MW-204-1 (REP) | MW-204-1 |
|---------------------------------|------------------|--------------|-------------|-----------|------------|-------------|-------------|-------------|-------------|----------------|-------------|
| | Sample Date: | 11/19/2014 | 12/20/2015 | 1/20/2017 | 8/10/2017 | 8/2/2018 | 12/24/2015 | 1/17/2017 | 8/7/2017 | 8/7/2017 | 7/30/2018 |
| | NYSDEC SCGs | | | | | | | | | | |
| Cadmim, Total | | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Cadmim, Dissolved | 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Chromim, Total | 50 | 22.9 | 81.6 | < 10 | 138 | 22.7 | 85.3 | 57.0 | 175 | 171 | 239 |
| Chromim, Dissolved | 50 | 3.3 B | < 10 | < 10 | < 10 | < 10 | 38.5 | 31.1 | 87.0 | 85.3 | 89.1 |
| Iron (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Iron (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (total) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese (dissolved) | 300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units on last page

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2,3)

| Constituents (units in ug/L) | Sample Location: | MW-205-1 | MW-205-1 | MW-205-1 | MW-205-1 | MW-206-1 | MW-206-1 | MW-206-1 | MW-206-1 | MW-208-1 | MW-208-1 | MW-208-1 | MW-208-1 | MW-208-1 (REP) |
|---------------------------------|------------------|------------|-----------|----------|----------|------------|-----------|----------|-----------|------------|-----------|-----------|----------|----------------|
| | Sample Date: | 12/29/2015 | 1/18/2017 | 8/8/2017 | 8/1/2018 | 12/29/2015 | 1/19/2017 | 8/9/2017 | 7/31/2018 | 12/29/2015 | 1/20/2017 | 8/10/2017 | 8/2/2018 | 8/2/2018 |
| | NYSDEC SCGs | | | | | | | | | | | | | |
| Cadmim, Total | | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Cadmim, Dissolved | 5 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Chromim, Total | 50 | 11.4 | 73.4 | 134 | 88.7 | 12.6 | 162 | 82.0 | 13.6 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Chromim, Dissolved | 50 | < 10 | < 10 | < 10 | 23.7 | < 10 | < 10 | 10.7 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Iron (total) | 300 | | -- | -- | -- | | -- | -- | -- | | -- | -- | -- | -- |
| Iron (dissolved) | 300 | | -- | -- | -- | | -- | -- | -- | | -- | -- | -- | -- |
| Manganese (total) | 300 | | -- | -- | -- | | -- | -- | -- | | -- | -- | -- | -- |
| Manganese (dissolved) | 300 | | -- | -- | -- | | -- | -- | -- | | -- | -- | -- | -- |

Abbreviations, Notes, Qualifiers, and Units on last page

Table 11
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU 3 (Former Settling Ponds),
Bethpage, New York ^(1,2)

Abbreviations, Notes, Qualifiers, and Units:

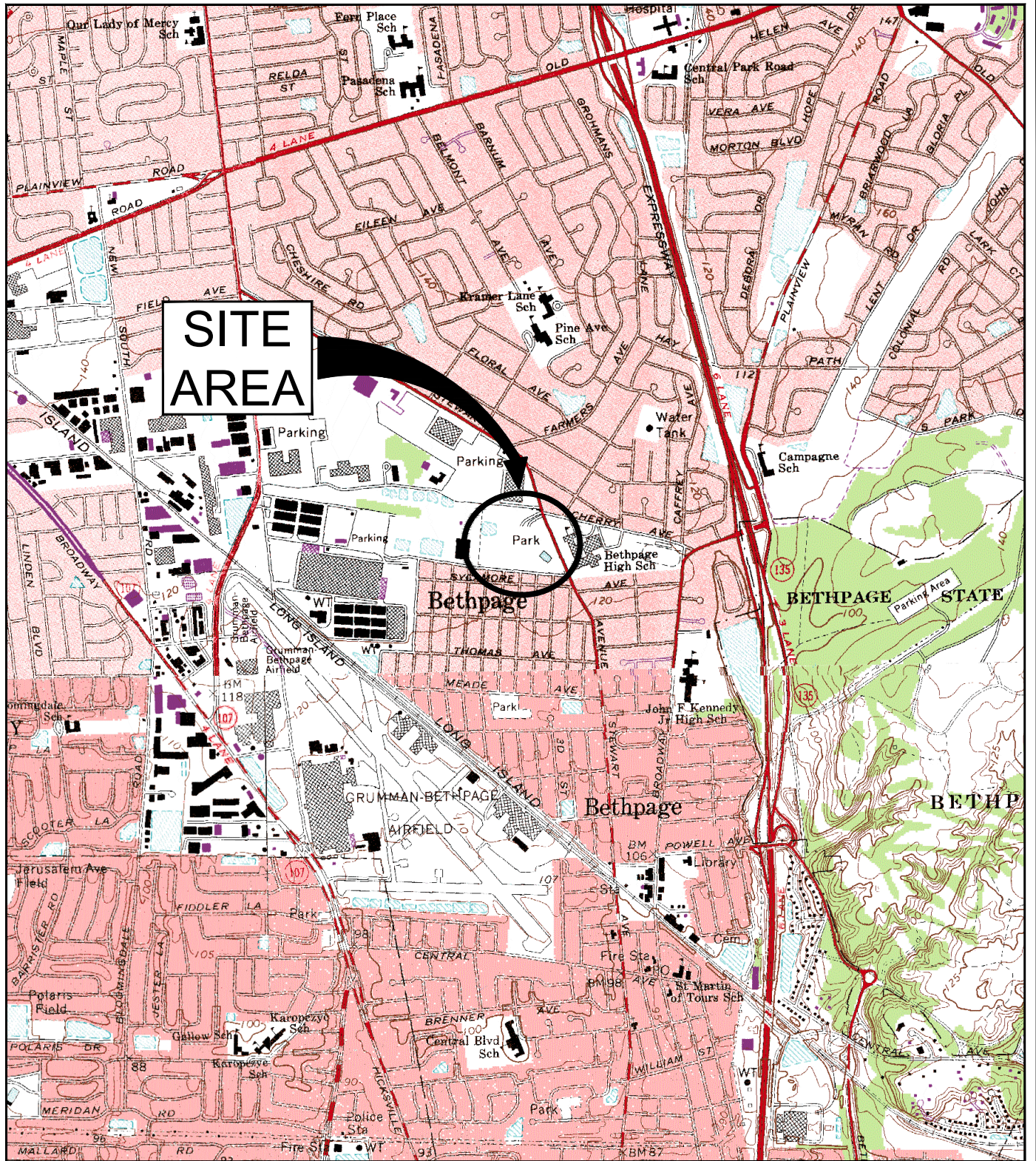
| | |
|--------|---|
| -- | Not Analyzed |
| NYSDEC | New York State Department of Environmental Conservation |
| USEPA | United State Environmental Protection Agency |
| SCGs | Standards, Criteria, and Guidance values |

1. All historic data available in previous quarterly reports.
2. Results are validated at 20% frequency, per protocols specified in Sampling and Analysis Plan in the DRAFT Bethpage Park Groundwater Containment System OM&M Manual (ARCADIS 2016).
3. Samples analyzed for metals using USEPA Method 6010.

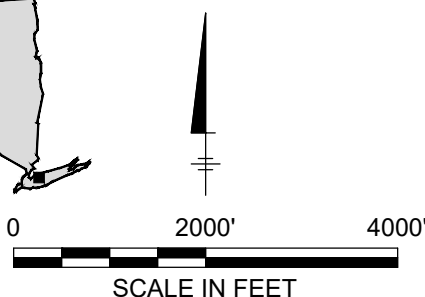
| | |
|--|---|
| 239 | Indicates an exceedance of an SCG |
| < 5 | Bold indicates a detection |
| <i>italicized</i> | Compound not detected above its laboratory quantification limit |
| <i>italicized indicates most recent data</i> | |
| B | Compound detected in associated blank sample |
| J | Result is estimated |
| ug/L | Micrograms per liter |

FIGURES





SOURCE:
 USGS 7.5 MIN. AMITYVILLE QUADRANGLE, AMITYVILLE, N.Y., 1994, FREEPORT QUADRANGLE, FREEPORT, N.Y., 1994,
 HICKSVILLE QUADRANGLE, HICKSVILLE, N.Y., 1967, PHOTOREVISED 1979, HUNTINGTON, N.Y., 1967, PHOTOREVISED 1979



BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

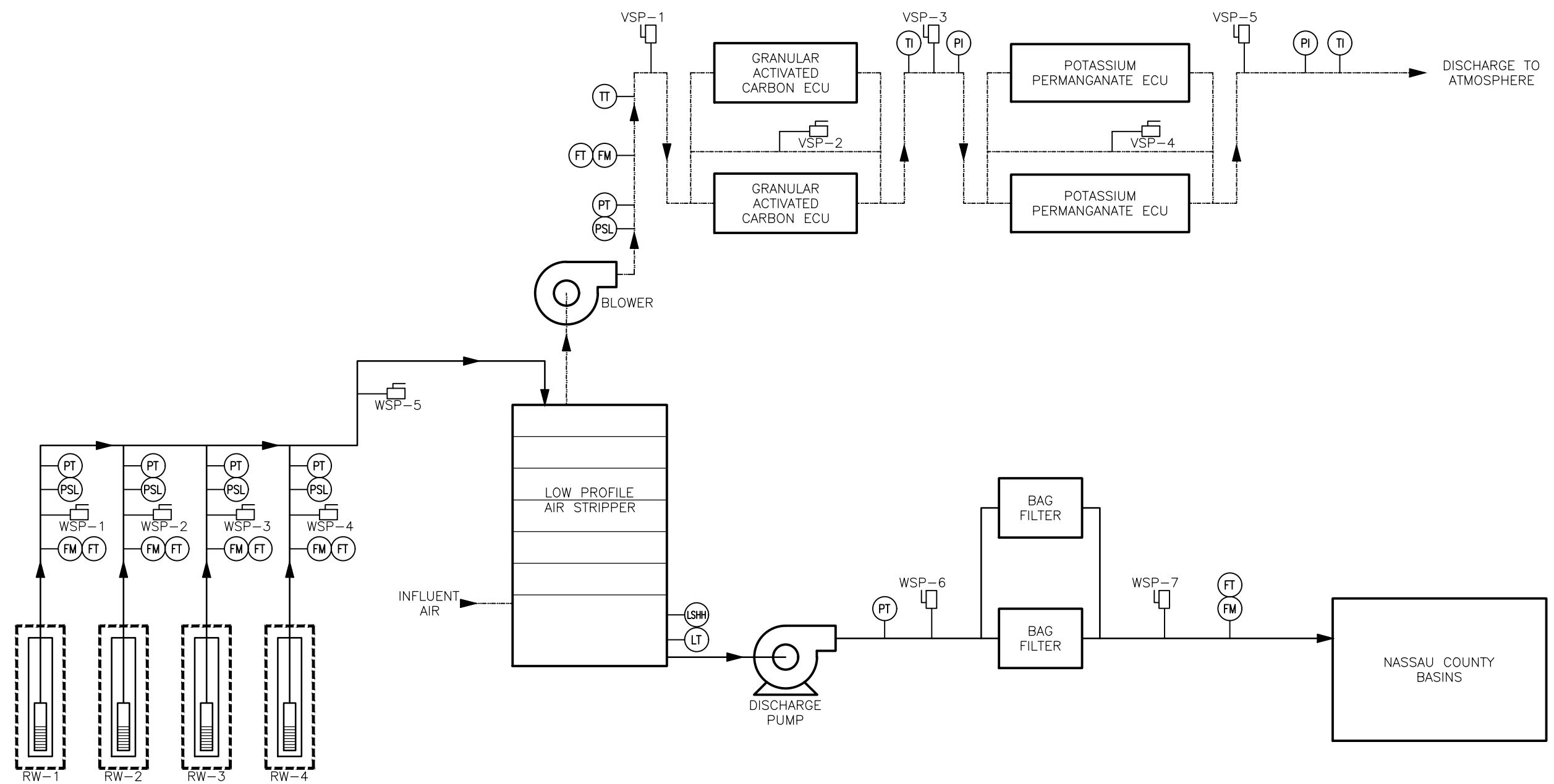
SITE LOCATION

 **ARCADIS** Design & Consultancy for natural and built assets

FIGURE 1

XREFS: IMAGES: PROJECTNAME: ---
 AMITYVILLE.TIF
 FREEPORT.TIF
 HICKSVILLE.TIF
 HUNTINGTON.TIF

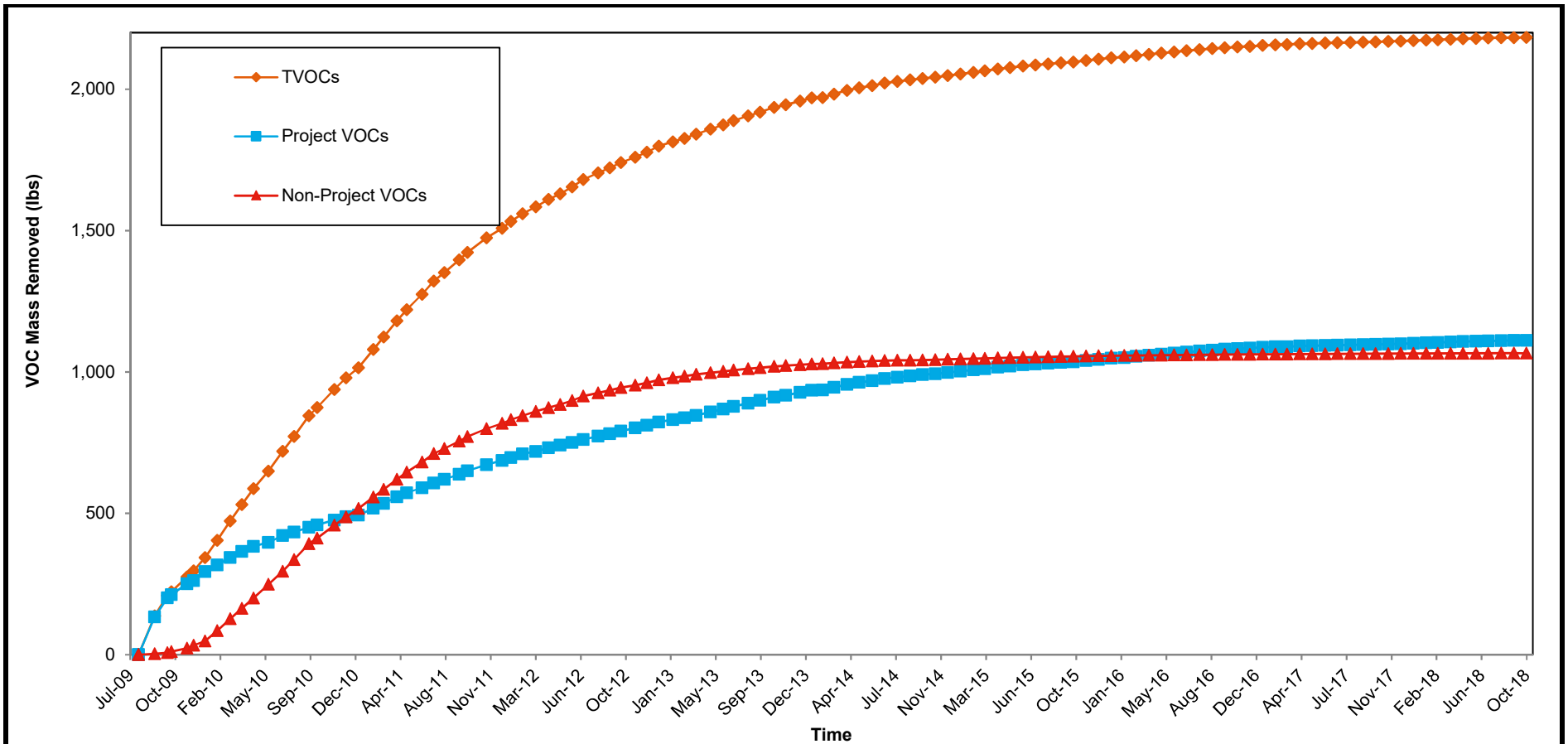
CITY:SYRACUSE-ENV DIV\GROUP:ENV DB:A-SANCHEZ LD:AS PIC:(Opt) PM:(Read) TM:(Opt) Lyr:(Option)-OFF=REF- PLOT:11/11/2015 4:57 PM ACADVER:21.05 (LMS TECH) PAGES:3 LAYOUT:3 SAVED:11/11/2015 4:57 PM BY: SANCHEZ, ADRIAN



- LEGEND:**
- PROCESS WATER
 - - - PROCESS AIR
 - ⊗ FM INSTRUMENT
 - SAMPLE PORT
 - ▶ FLOW DIRECTION
 - FM FLOW METER
 - FT FLOW RATE TRANSMITTER
 - PSL PRESSURE VACUUM LOW
 - PT PRESSURE TRANSMITTER
 - PI PRESSURE INDICATOR
 - LSHH LEVEL SWITCH HIGH HIGH
 - LT LEVEL TRANSMITTER
 - TT TEMPERATURE TRANSMITTER
 - TI TEMPERATURE INDICATOR
 - WSP WATER SAMPLE PORT
 - VSP VAPOR SAMPLE PORT
 - ECU EMISSION CONTROL UNIT

BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

**GROUNDWATER TREATMENT SYSTEM
 PROCESS SCHEMATIC AND
 MONITORING LOCATIONS**



Abbreviations, Notes, and Units:

VOC = Volatile Organic Compound
 TVOCs = Total VOCs detected

Project VOCs = sum of 1,1,1-trichloroethane; 1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichloroethene; tetrachloroethene; trichloroethene; vinyl chloride; cis-1,2-dichloroethene; trans-1,2-dichloroethene; benzene; toluene; and total xylenes.

Non-Project VOCs = sum of VOCs that are not Project VOCs.

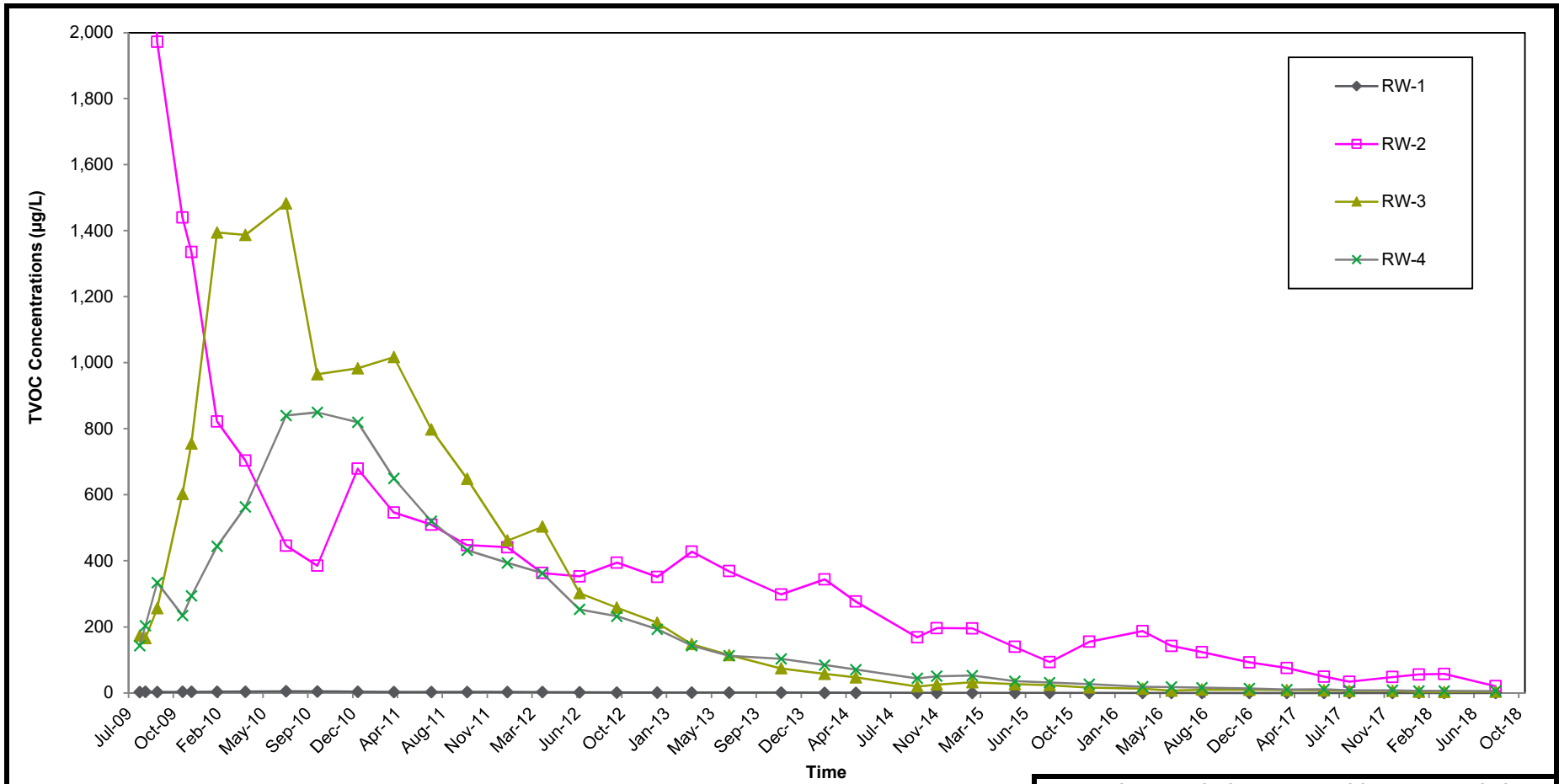
lbs = pounds

BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

**CUMULATIVE TOTAL, PROJECT, AND
 NON-PROJECT VOC MASS REMOVED**



FIGURE
5



Abbreviations, Notes, and Units:

VOC = Volatile Organic Compound
 TVOCs = Total VOCs detected

1. Results prior to September 10, 2009 are not shown to improve figure clarity. The TVOC concentrations are greater than 2,000 µg/L. See previous reports for full data set.

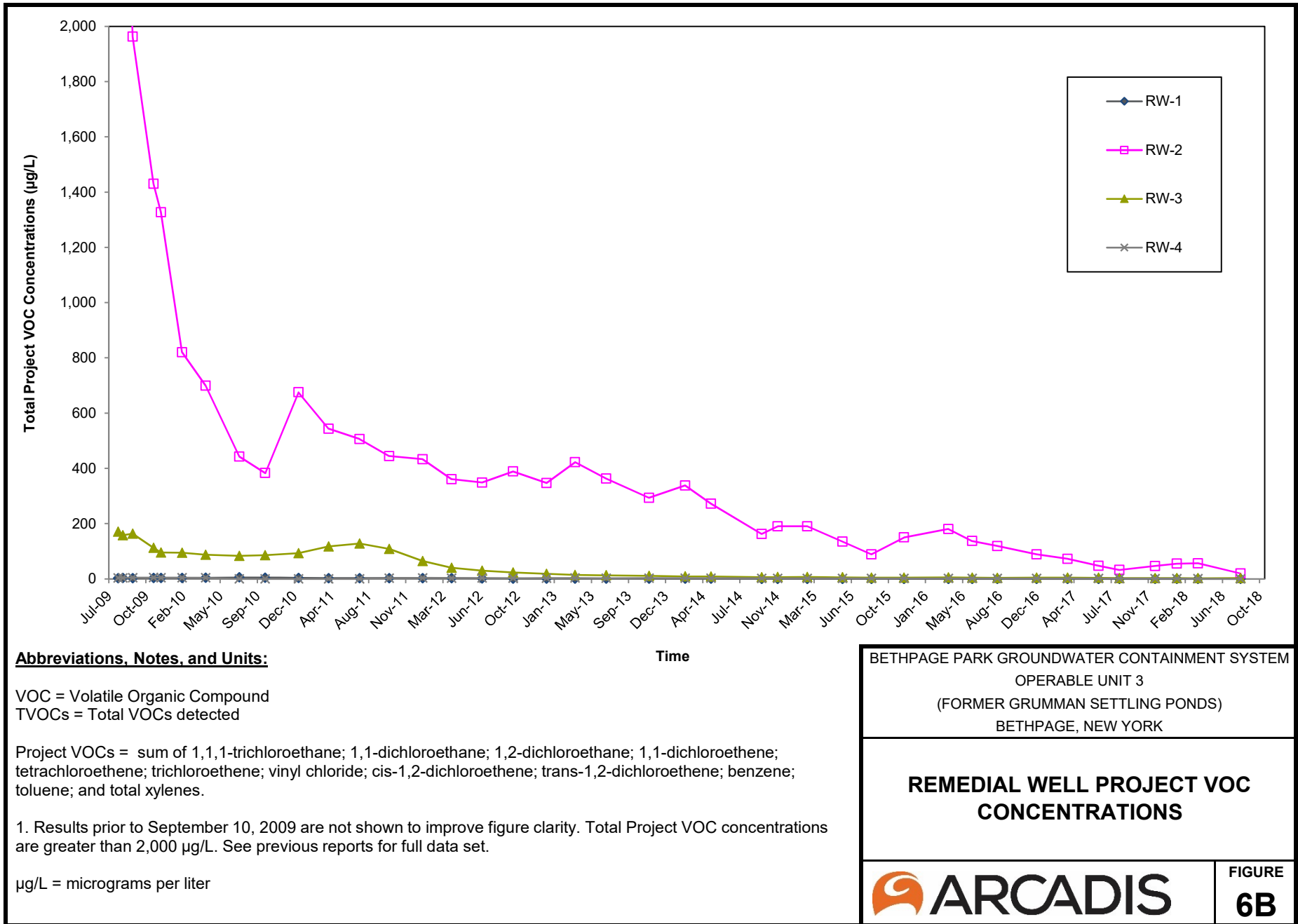
µg/L = micrograms per liter

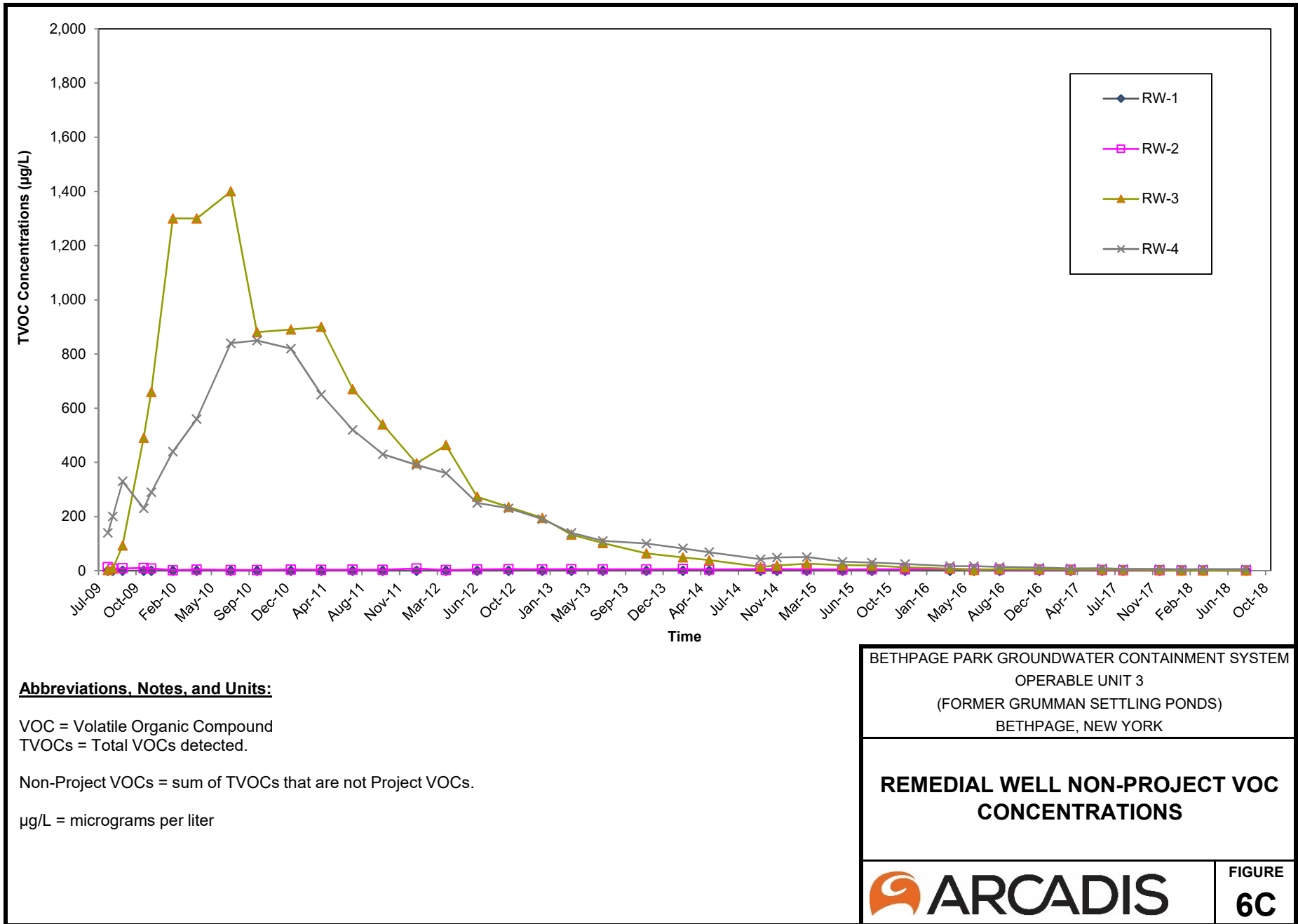
BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

**REMEDIAL WELL TOTAL VOC
 CONCENTRATIONS**



FIGURE
6A





BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

REMEDIAL WELL NON-PROJECT VOC CONCENTRATIONS


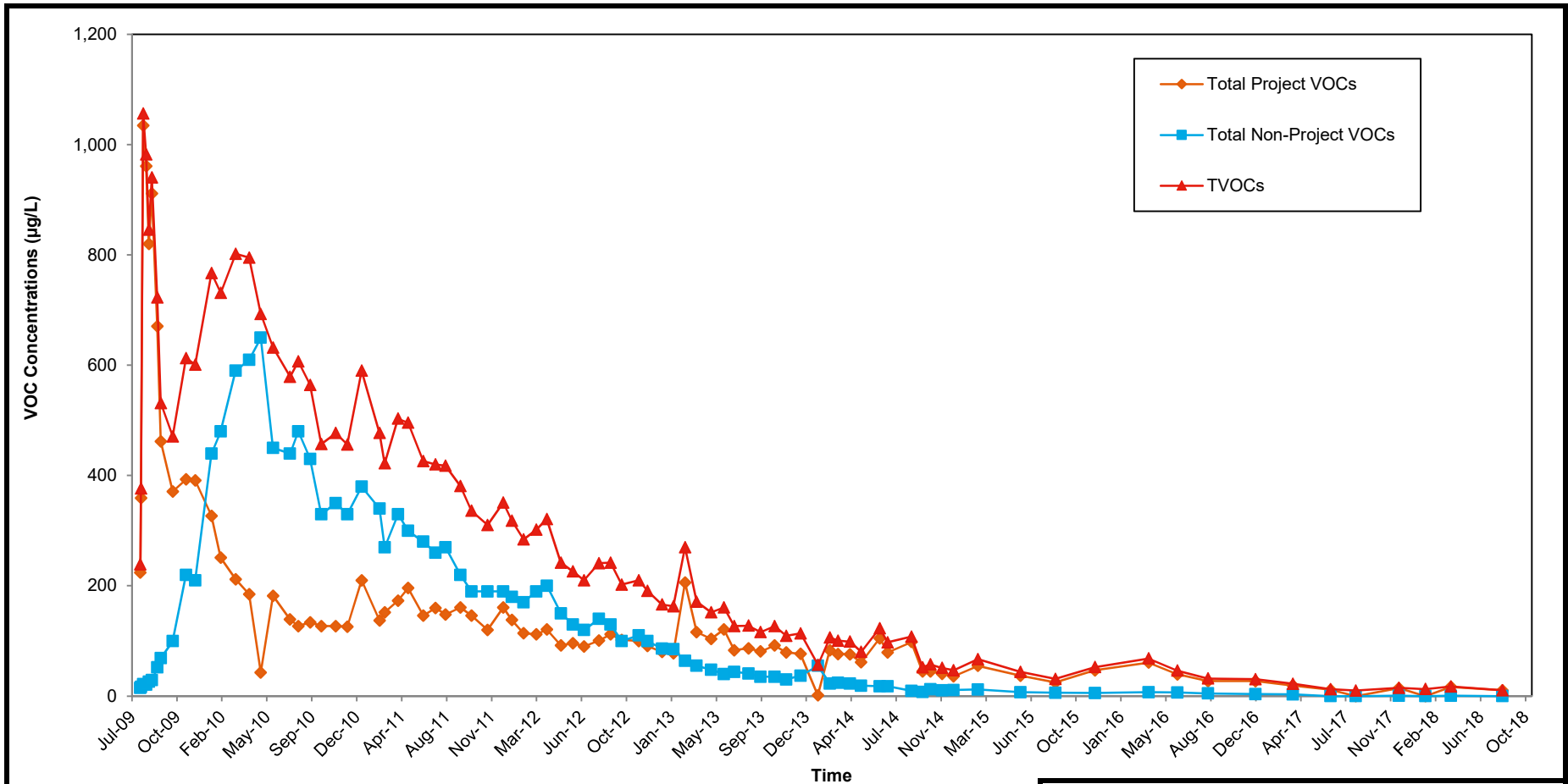
 **ARCADIS**

FIGURE 6C



Abbreviations, Notes, and Units:

VOC = Volatile Organic Compound
 TVOCs = Total VOCs detected.

Project VOCs = sum of 1,1,1-trichloroethane; 1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichloroethene; tetrachloroethene; trichloroethene; vinyl chloride; cis-1,2-dichloroethene; trans-1,2-dichloroethene; benzene; toluene; and total xylenes.

Non-Project VOCs = sum of VOCs that are not Project VOCs.

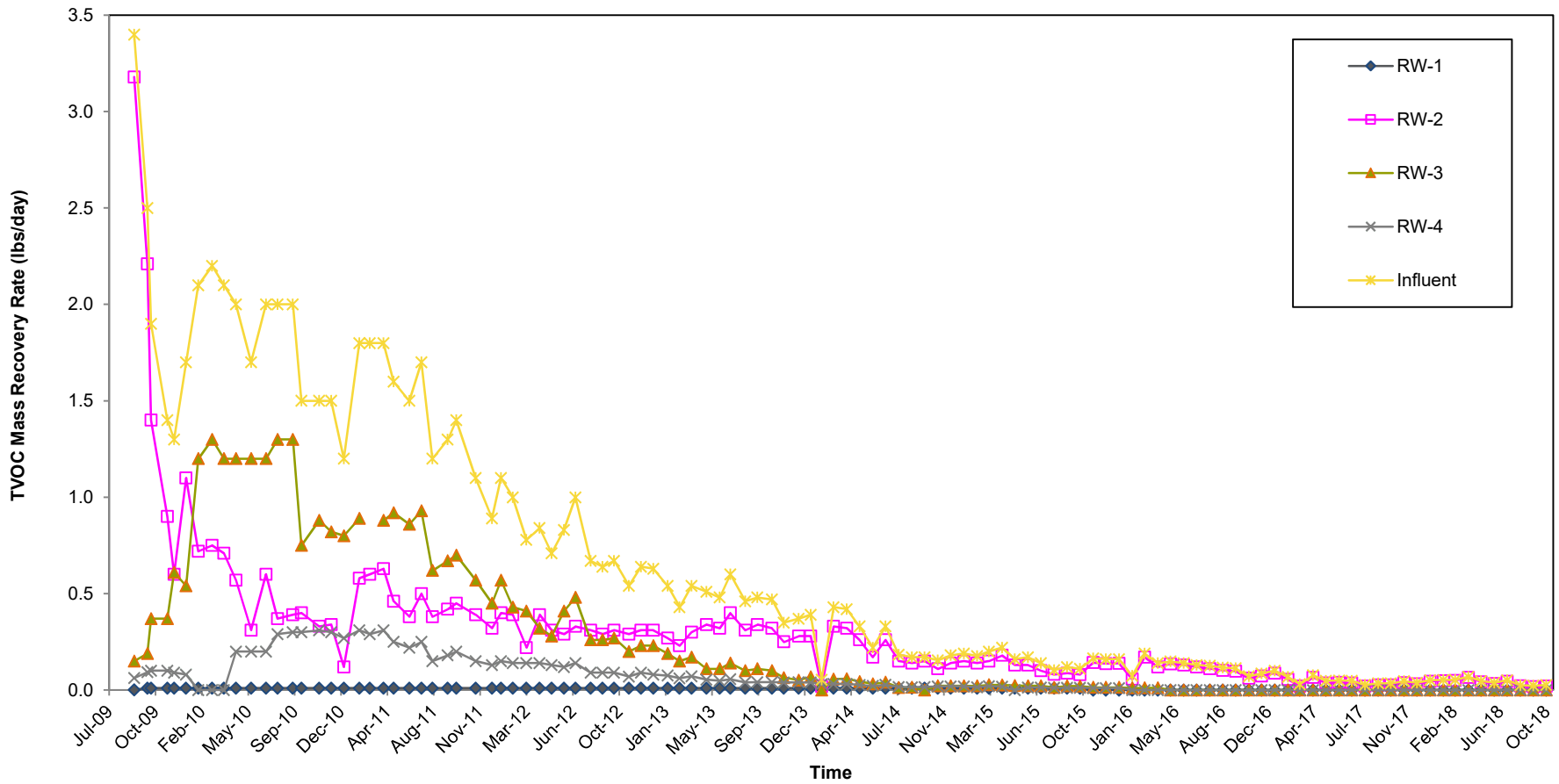
µg/L = micrograms per liter

BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

**INFLUENT TOTAL, PROJECT
 AND NON-PROJECT
 VOC CONCENTRATIONS**



FIGURE
7



Abbreviation, Notes, and Units:

VOC = Volatile Organic Compound
 TVOCs = Total VOCs detected

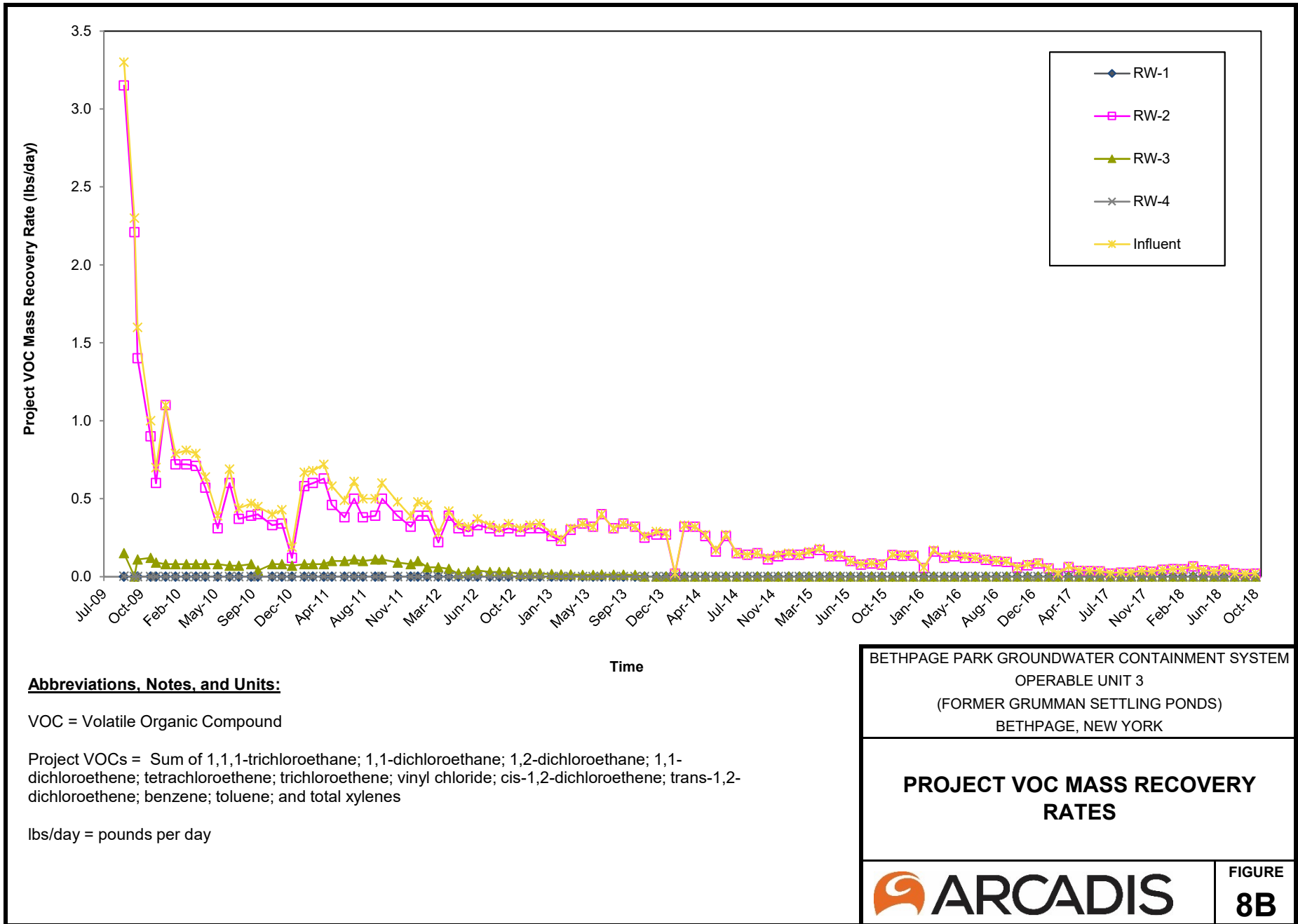
lbs/day = pounds per day

BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

TOTAL VOC MASS RECOVERY RATES




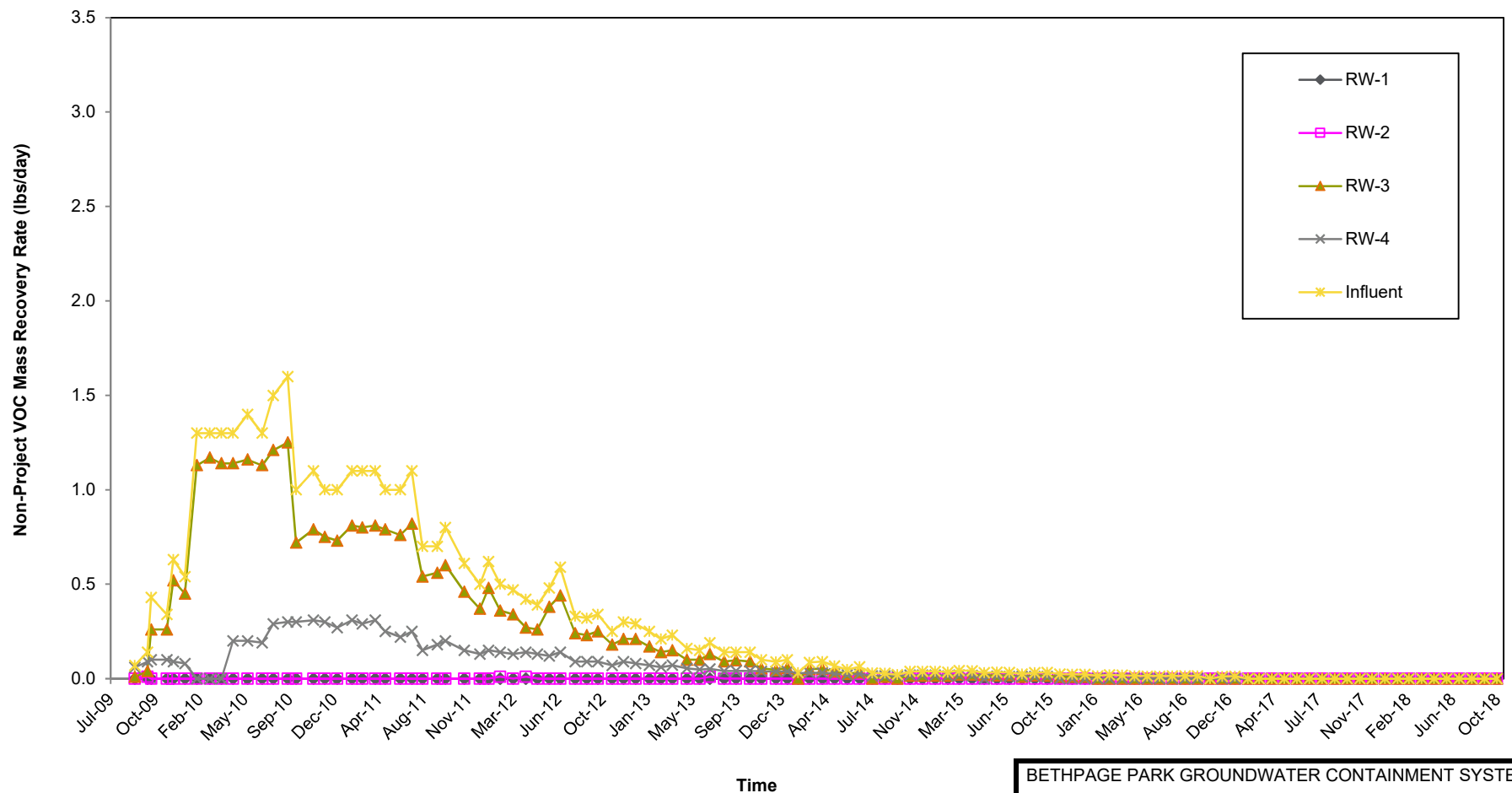
FIGURE
8A



BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

PROJECT VOC MASS RECOVERY RATES

 **FIGURE 8B**



Abbreviations, Notes, and Units:

VOC = Volatile Organic Compound

Non-Project VOCs = sum of VOCs that are not Project VOCs.

lbs/day = pounds per day

BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

NON-PROJECT VOC MASS RECOVERY RATES



FIGURE
8C