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Date: March 31, 2023

Our Ref: 30123958


Subject: 2022 Annual Summary Report - 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.

Dear Jason,

Enclosed is one electronic PDF copy of the 2022 Annual Summary Report for the 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.

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

Sincerely,
Arcadis of New York, Inc.



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Northrop Grumman

2022 Annual Operation, Maintenance, And Monitoring Report

Operable Unit 3 – Groundwater

Bethpage, New York

NYSDEC ID # 1-30-003A

March 31, 2023

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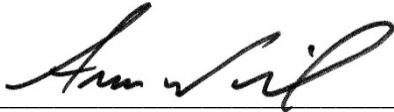
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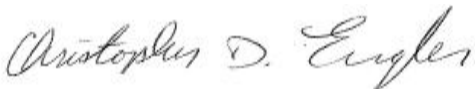
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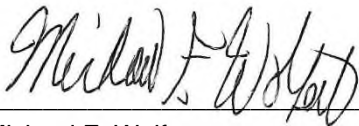
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Operable Unit 3 - Groundwater

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1 Introduction

Pursuant to the Administrative Order on Consent (AOC) Index #W1-0018-04-01 (New York State Department of Environmental Conservation [NYSDEC] 2005) and the Operable Unit 3 (OU3) Record of Decision (ROD) (NYSDEC 2013), Arcadis of New York, Inc. (Arcadis), on behalf of Northrop Grumman, has prepared this OU3 Bethpage Park Groundwater Containment System (BPGWCS) Annual Summary Report for submittal to the NYSDEC. The present-day Bethpage Community Park property (Park), McKay Field Access Road, and Former Plant 24 Access Road, which the NYSDEC has termed the “Former Grumman Settling Ponds Area” and designated as OU3, are referred to herein as the Site Area. **Figure 1** provides a Site Location map.

The BPGWCS (previously referred to as the Groundwater Interim Remedial Measure and also known as the OU3 On-site Containment [ONCT] system) has been operational since July 21, 2009. The operation, maintenance, and monitoring (OM&M) activities performed during 2022 (i.e., January 1 through December 31, 2022 [the “annual reporting period”]) are summarized in this Annual Summary Report. Data summaries for the previous three 2022 quarterly operational periods are available in the following letter reports:

- Results of First Quarter 2022 System Operation and Monitoring for the Bethpage Park Groundwater Containment System, May 2022 (Arcadis 2021a)
- Results of Second Quarter 2022 System Operation and Monitoring for the Bethpage Park Groundwater Containment System, August 2022 (Arcadis 2021b)
- Results of Third Quarter 2022 System Operation and Monitoring for the Bethpage Park Groundwater Containment System, November 2022 (Arcadis 2021c)

During the annual reporting period, the BPGWCS Remedial System was operated and the Environmental Effectiveness Monitoring Programs were conducted in accordance with the OU3 BPGWCS Groundwater Operation, Maintenance, and Monitoring Manual (OM&M Manual; Arcadis 2016).

As discussed in the OU3 Site Area Remedial Investigation Report (Site Area RI) (Arcadis 2011), Northrop Grumman does not take responsibility for certain compounds (e.g., Freon 12 and Freon 22) present in Site Area groundwater. Throughout this Annual Report, a distinction is made between “Project” and “Non-Project” volatile organic compounds (VOCs), defined as follows:

- Project VOCs: VOCs that may be related to former Northrop Grumman historical activities. For this OM&M Report, Project VOCs include 1,1,1-trichloroethane; 1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichloroethene; tetrachloroethene; trichloroethylene (TCE); vinyl chloride (VC); cis-1,2-dichloroethene (cis-1,2-DCE); trans-1,2-dichloroethene (trans-1,2-DCE); benzene; toluene; xylene-O, and xylenes-M,P.
- Non-Project VOCs: VOCs, such as Chloroform, Freon 12 and Freon 22, that are understood to be unrelated to former Northrop Grumman activities but have been detected in Site Area groundwater. As noted in the Site Area RI (Arcadis 2011), a sub-plume of Freon 22 has been identified originating from the area of the Town of Oyster Bay’s (Town) former ice rink. Based on Town information (Zervos 2007), Freon 22 was used by the Town and released to the environment.

2 Bethpage Park Groundwater Containment System Objectives

Remedial action objectives (RAOs) for the BPGWCS are as follows:

- Mitigate the off-site migration of dissolved-phase VOCs in groundwater. Specifically, the BPGWCS was designed to address:
 - Groundwater that has total VOC concentrations greater than 5 micrograms per liter ($\mu\text{g/L}$) in the upper 20 feet of the surficial aquifer across the 1,200-foot-wide lateral extent of the Site Area southern boundary.
 - Groundwater below the upper 20 feet of the surficial aquifer that has total VOC concentrations greater than 50 $\mu\text{g/L}$ across the 1,200-foot-wide lateral extent of the Site Area southern boundary.
- Comply with applicable NYSDEC standards, criteria, and guidance values (SCGs) for treated water and air emissions.

A secondary benefit of the BPGWCS is the creation of a clean-waterfront atop downgradient groundwater, which minimizes the potential for vapor intrusion downgradient of the Site Area.

3 Bethpage Park Groundwater Containment System Description

The BPGWCS consists of:

- A pump-and-treat system where groundwater is:
 - Extracted along the Former Plant 24 Access Road via six remedial wells.
 - Conveyed to a treatment plant at McKay Field via four underground pipelines.
 - Treated via air stripping to reduce concentrations of Project and Non-Project VOCs to comply with applicable NYSDEC SCGs, including SPDES discharge requirements for treated water.
 - Filtered to remove oxidized metals to comply with applicable NYSDEC SCGs for treated water.
 - Returned to the aquifer via a discharge pipeline routed to a recharge basin located on the adjacent former Bethpage Naval Weapons Industrial Reserve Plant (NWIRP) property.
- A vapor-phase treatment system that reduces concentrations of Project VOCs to below AGCs/SGCs in the air stripper off-gas prior to discharge to the atmosphere.
- A groundwater monitoring network utilized to periodically assess the environmental effectiveness of the BPGWCS.

Major components of the BPGWCS are as follows:

- Four remedial wells (RW-1, RW-2, RW-3, and RW-4) with design pumping rates of 30 gallons per minute (gpm), 75 gpm, 75 gpm, and 30 gpm, respectively; for a total design influent flow rate of 210 gpm.
- On August 4, 2022 Monitoring Wells BCPMW-4-1 and BCPMW-4-2 were repurposed to serve as additional recovery wells; water extracted by these wells is conveyed (by pipeline) to the existing RW-1 well pipeline,

which then flows to the treatment system. The pumping rate of RW-1 was reduced to 14 gpm to accommodate the pumping rates of BCPMW-4-1 and BCPMW-4-2, which are 3 gpm and 13 gpm respectively. These three wells have a combined design pumping rate of 30 gpm.

- One low-profile air stripper to remove VOCs from extracted groundwater prior to discharge to the recharge basin.
- Two bag filter units configured so that one is operational, and the other is in standby mode. The system control logic automatically switches from the operational filter unit to the standby filter unit when the pressure differential between the influent and effluent sides of the operational bag filter reaches a pre-set limit to prevent a system shutdown and the spent filters are then replaced.
- Four emission control units operating in series, with the first three containing vapor-phase granular-activated carbon and the last unit containing potassium permanganate-impregnated zeolite, to treat Project VOCs in the air stripper off-gas.
- A groundwater monitoring network, consisting of 47 monitoring locations, including 23 groundwater monitoring wells, six remedial wells, and 20 piezometers.

Figure 2 shows the layout of the BPGWCS, and **Figure 3** provides a schematic drawing of the remedial systems. **Figure 4** shows groundwater sampling locations that form the groundwater monitoring network. **Appendix A** provides construction details for the monitoring wells and piezometers. The latest version of the OM&M Manual (Arcadis 2016) provides additional information.

4 Operation and Maintenance Activities

4.1 Annual System Performance and Alarm Summary

The 2022 system operational up-time is documented in **Table 1** and summarized below along with BPGWCS shutdowns that occurred in 2022.

In 2022:

- The system operated 344 out of 365 days (94% uptime), which is about the same as the 95% runtime observed in 2021.
- The remedial wells operated at reduced flow rates during portions of the year due to pump wear attributed to iron build-up in the pumps, influent pipelines and valves. The reduced flow rates were corrected by adjusting the manifold globe valves or through the performance of periodic system maintenance (i.e., pulling and replacing the remedial well pumps and valve cleaning).
- There were 16 non-routine system shutdowns (less than 12 hours each) due to alarm conditions encountered during normal operation of the system. Alarms in this category were responded to and troubleshooting was completed to restart the system within the same day (less than 12 hours).
- The following seven (7) non-routine system shutdowns resulted in downtime period greater than 12 hours each, of which:
 - 22-hour shutdown from 3/28/22 – 3/29/22 due to a system reset following the E-Stop being triggered.

- 34.5-hour shutdown from 4/30/22 – 5/2/22 due to the building sump high level alarm. The sump alarms were adjusted to resolve the issue.
- 34-hour shutdown from 5/14/22 – 5/16/22 due to a loss of power.
- 53.5-hour shutdown from 5/18/22 – 5/20/22 due to high pressure alarms.
- 122.5-hour reduced flowrate operation from 5/20/22 – 5/25/22 due to maintenance on RW-1 and RW- 4, and the conversion of BCPMW-4-1 and BCPMW-4-2 as recovery wells.
- 32-hour shutdown from 7/21/22 – 7/22/22 due to power loss.
- 21-hour shutdown from 8/5/22 to 8/6/22 due to high water level alarms.

5 System Monitoring Activities

5.1 2022 System Monitoring Activities

The following compliance and performance monitoring activities were conducted during the annual reporting period (see Section 6 of the OM&M Manual for a summary of the compliance and performance monitoring program requirements):

- Fourteen (14) sampling events to collect 42 required water samples (WSP-1 through WSP-5 on a quarterly basis and WSP-7 on a monthly basis) and 10 air samples (influent and effluent on a quarterly basis). Additional water samples (WSP-1 through WSP-7) and air samples (influent and effluent) were collected on a monthly basis during the first quarter due to an increase in TVOC concentration observed in August 2021 in RW-2.
- As of August 8, 2022 WSP-1 includes contributions from new recovery wells BCPMW-4-1 and BCPMW-4-2. Samples collected from remedial wells BCPMW-4-1 and BCPMW-4-2 have been previously provided in monthly progress reports.

Thirty-six (36) weekly site visits to monitor and record key system operational parameters. System O&M results for the annual reporting period are summarized in the following tables and figures:

- Operational Summary, including monitoring events, system operational days, and noteworthy site activities (**Table 1**).
- Summary of Influent and Effluent Water Sample Analytical Results (**Tables 2 and 3**, respectively) – **Table 3** also provides the BPGWCS treatment system removal efficiency.
- Summary of Influent and Effluent Vapor Sample Analytical Results and Summary of Effluent Vapor Tentatively Identified Compounds (**Tables 4, 5 and 6**, respectively) – **Table 5** also provides the BPGWCS treatment system removal efficiency.
- Summary of System Parameters, including flow rates, line pressures, and temperatures (**Table 7**).
- Summary of Groundwater Recovered, VOC Mass Recovered, and VOC Mass Recovery Rates (**Table 8**) – **Table 8** provides a breakdown of these parameters by Remedial Well and System and breaks down the VOC mass recovered and VOC recovery rates into Project, Non-Project, and total VOCs.
- Cumulative Total, Project, and Non-Project VOC Mass Removed (**Figure 5**).

- Remedial Well Total, Project, and Non-Project VOC Concentrations (**Figures 6A, 6B, and 6C**, respectively).
- Influent Total, Project, and Non-Project VOC Concentrations (**Figure 7**); and,
- Total, Project, and Non-Project VOC Mass Recovery Rates (**Figures 8A, 8B, and 8C**, respectively).

5.2 Summary of Monitoring Results and Conclusions

5.2.1 System Operation and Effectiveness

Annual BPGWCS monitoring results and conclusions are summarized below:

- Total volume of groundwater recovered and treated (**Table 8**):
 - 2022 Annual Total: 102 million gallons
 - Cumulative total since system startup: 1.4 billion gallons
- Total VOC mass recovered (**Table 8**):
 - 2022 Annual Total: 112.3 lbs of VOCs
 - Cumulative total since system startup: 2,506 lbs of VOCs
- VOC mass recovered and mass removal rates (**Table 8 and Figures 8A, 8B, and 8C**):
 - The majority of VOCs recovered during the annual reporting period were Project VOCs (96 percent or 107.6 lbs).
 - The majority of Project VOCs were recovered by RW-2 (48 percent or 51.2 lbs).
- The majority of Non-Project VOCs were recovered by RW-1 (35 percent or 1.7 lbs).
- Treatment system influent concentrations (**Table 2, and Figures 6A, 6B, 6C, and 7**):
 - During the annual reporting period, total Project VOC influent concentrations increased from 82.6 µg/L in January to 387.7 µg/L in August. Total Project VOC concentrations decreased to 109.9 µg/l in November.
 - A similar increase and subsequent decrease was observed in total Non-Project VOCs. Influent concentrations ranged from 3.2 µg/L in January to 18.8 µg/L in August. Total Non-Project VOC concentrations decreased to 2.9 µg/l in November. These concentrations were below the peak concentration observed in 2014 (55 µg/L). Total Non-Project VOC influent concentrations have generally decreased since 2010.
- Total iron detected during the annual reporting period ranged from 174 µg/L to 767 µg/L (**Table 3**). On August 17, 2022, an increased total iron concentration of 767 µg/L was observed in the effluent sample. This is likely due to the addition of BCPMW-4-1 and BCPMW-4-2 recovery wells to the system on August 4, 2022, and samples collected after August 4, 2022 decreased in total iron concentration to below the SPDES limit. Iron concentrations have since decreased and have been consistent with historical values.
- Project VOC Concentrations in Remedial Wells (**Table 10**):
 - For RW-1, there was a notable increase in total project VOC concentrations in August to 1,550.5 µg/l. This is most likely due to the addition of new Recovery Wells BCPMW-4-1 and BCPMW-4-2 to the RW-1

influent. The concentrations for RW-1 decreased in the November sample to 461.1 µg/l. This situation will be closely monitored.

- In RW-2, total Project VOC concentrations decreased from a high of 276.4 µg/l in February to 40.9 µg/l in November to.
- In RW-3, total Project VOC concentrations ranged from 32.8 µg/l in May to 54.5 µg/l in February.
- In RW-4, one Project VOC (TCE) was detected in the first and fourth quarters, but the detections were below the applicable SCG, and no VOCs were detected during the second and third quarters.
- In RW-1, non-Project VOC concentrations ranged from non-detect in the first and second quarters to 65.2 µg/l in August. The concentrations decreased to 13.2 µg/l in November. In RW-2, non-Project VOC concentrations ranged from non detect in November to 2.9 µg/l in May. In RW-3, non-Project VOC concentrations ranged from 2.3 µg/l in November to 10.2 µg/l in February. In RW-4, non-Project VOC concentrations ranged from not detected in August to 2.5 µg/l in May.
- The air stripper, air stripper off-gas treatment system, and bag filter system performed within acceptable operating ranges during the annual reporting period, as indicated by:
 - The air stripper VOC removal efficiency was greater than 99.9 percent for Project and Non-Project VOCs (**Table 3**).
 - Both water and air discharges complied with applicable SCGs and discharge limits (**Tables 3, and 9**) except for the water effluent sample collected in August which showed a total iron concentration above the SPDES limit, however, the total iron concentrations have since decreased and are within applicable discharge limits.

5.2.2 Regulatory Status of Discharges

5.2.2.1 Air Discharges

Facility-wide emissions were evaluated for the reporting period to determine compliance with DAR-1 Guideline for The Evaluation and Control of Ambient Air Contaminants Under 6 CRR-NY 212 (Rule 212). Three different emission point sources, that operated for different durations throughout the reporting period, are included in the facility-wide emission sources. These emission sources included:

- OU3 Bethpage Park Groundwater Containment System (BPGWCS) which operated for the entire reporting period.
- OU3 Bethpage Park Soil Gas Containment System (BPSGCS) which operated from May 18, 2022 through December 31, 2022 of the reporting period.
- Combined BPSGCS and ISTR which operated from January 1, 2022 throughout May 18, 2022 of the reporting period.

Pursuant to 6 CRR-NY 212-2.1, for an air contaminant listed in section 212-2.2 table 2 – high toxicity air contaminant (HTAC) list, the facility owner or operator shall either limit the actual annual emissions from all process operations at the facility so as to not exceed the mass emission limit listed for the individual HTAC; or demonstrate compliance with the air cleaning requirements for the HTAC as specified in subdivision 212-2.3(b), table 4 – degree of air cleaning required for non-criteria air contaminants, of this Subpart for the environmental

rating assigned to the contaminant by the department. For each non-HTAC air contaminant, dispersion modeling will not be required if the actual annual emission rate is less than 100 pounds per year facility-wide. Actual annual emission rates used for comparison can take control devices into account and must meet the provisions of 212-1.5(g). Emission source specific and facility-wide emission rates were calculated for the detected constituents for the reporting period and are summarized in Table 9. All detected compounds were below the compound specific mass emission limit for the reporting period and therefore, no further analysis was required.

Based on **Table 9** the facility-wide effluent air discharge for the annual reporting period meets the requirements of Rule 212.

5.2.2.2 Water Discharges

The BPGWCS-treated water effluent met NYSDEC regulatory requirements during the annual reporting period (Table 3 and Appendix B), as noted below:

- The measured concentration of individual VOCs in the treated water effluent were below applicable discharge limits, per the interim State Pollutant Discharge Elimination System (SPDES) equivalency permit dated October 12, 2017, and as amended on September 15, 2022.
- The measured concentrations of total and dissolved iron in the treated water effluent were below applicable SPDES discharge limits except for the August sample which showed a total iron concentration above the SPDES limit, however, the total iron concentrations have since decreased and are within applicable discharge limits.

6 Environmental Effectiveness Monitoring

The OU3 BPGWCS System environmental effectiveness (i.e., hydraulic monitoring and groundwater quality monitoring) activities and results for the annual reporting period are discussed below.

6.1 Hydraulic Monitoring

6.1.1 Activities

In accordance with the OM&M Manual requirements and methodologies (Arcadis 2016), groundwater hydraulic monitoring was performed quarterly during the annual reporting period. Specifically, depth-to-water measurements were completed on March 15-16, June 13, September 6, and November 22, 2022. In March and June, the depth to water measurements were completed at the 43 monitoring wells/piezometers and 4 remedial wells forming the approved monitoring well network (Figure 4). In September and November, the depth to water measurements were completed at the 41 monitoring wells/piezometers and 6 remedial wells following the addition of BCPMW-4-1 and BCPMW-4-2 as recovery wells, forming the approved monitoring well network (Figure 4).

Table 11 summarizes results of depth-to-water measurements to date.

6.1.2 Results

Figure 9 provides the configuration of the shallow potentiometric surface and the inferred horizontal groundwater flow directions on September 6, 2022 (3rd quarter) at the Site Area. Comparing third quarter water-level elevations

from 2022 to those from 2021 reveal that the shallow potentiometric surface was approximately 2.5 feet lower at the time water level elevations were recorded in 2022 as compared to 2021.

Groundwater hydraulic monitoring is conducted quarterly; however, the shallow potentiometric surface is mapped for one quarter each year as the rise and fall of this surface seasonally, due to recharge or lack thereof, has a negligible effect on the capture zone. As **Figure 9** shows, groundwater flow in the area is generally toward the south/southeast north of the remedial wells. The BPGWCS system is capturing groundwater from beneath the entire Bethpage Community Park. The southern edge of the capture zone (groundwater divide) extends to the south of Monitoring Wells MW-204-1, MW-205-1 and MW-206-1 and is generally along Sycamore Avenue and slightly south of Monitoring Wells MW-200-1 through MW-202-1.

Figure 10 provides a cross-sectional view of vertical groundwater flow (based on groundwater levels measured on September 6, 2022), and Project VOC concentrations in groundwater (based on results from the July/August 2022 annual groundwater sampling round). **Figure 10** indicates groundwater containing Project VOCs is being captured and removed by the remedial wells (at all depths), which exceeds the RAOs for the OU3 BPGWCS System.

Figure 9 in combination with **Figure 10** indicate that the OU3 BPGWCS System provides effective vertical and horizontal hydraulic control of groundwater containing Project VOCs and prevents its movement offsite.

6.2 Groundwater Quality Monitoring

6.2.1 Activities

An annual groundwater sampling round was performed in July and August 2022 as part of site-wide sampling activity. Groundwater samples were collected from 19 monitoring wells that are specified for sampling in the OM&M Manual (Arcadis 2016). Additionally, in response to elevated VOC concentrations observed in wells BCPMW-4-2 and RW-2 in late 2021 and early 2022 a sampling program was initiated in March 2022 increasing the frequency of sampling wells in the area of BCPMW-4-1 and BCPMW-4-2

6.2.2 Results

Groundwater samples collected from the 19 monitoring wells were analyzed for Target Compound List (TCL) VOCs, plus Freon 12 and Freon 22, using USEPA Method 8260C, 1,4-Dioxane using USEPA Method 8270D SIM and total (unfiltered) and dissolved (filtered) metals (cadmium and chromium) using USEPA Method 6010. Samples collected as part of the BCPMW-4-1/4-2 area investigation were analyzed for Target Compound List (TCL) VOCs, plus Freon 12 and Freon 22, using USEPA Method 8260C.

Groundwater quality data, including historical results to date, are summarized in **Table 12** (for VOCs and 1,4-Dioxane) and **Table 13** (for metals).

Except as described below, total Project and Non-Project VOCs concentrations in samples collected from the 19 monitoring wells during the July/August 2022 annual sampling event have been consistent with previous historical results and did not show notable increases during 2022. Similar to the increase in VOC concentrations observed in RW-2 in August 2021, TVOC concentrations in monitoring well BCPMW-4-2, located approximately 85 feet west of RW-2, had also increased from 100 ug/L on July 20, 2020 to 1,700 ug/L on August 2, 2021. In response to this increase in TVOC concentrations in BCPMW-4-2, groundwater samples were collected from BCPMW-4-1, BCPMW-4-2, PZ 1A, PZ-3, PZ-4 in May and July 2022 and elevated concentrations were detected in BCPMW-4-

1, BCPMW-4-2, PZ1A, PZ-3, and PZ4. In response to these elevated concentrations four monitoring wells (MW-200-1, MW201-1, WM-204-1, and MW205-1) located immediately downgradient of the BPGWCS remedial wells were sampled numerous times throughout 2022 to confirm there was no off-site migration of VOCs. Analytical results from the 2022 sampling events are provide in **Table 12**. Results from the additional samples from the downgradient monitoring wells MW-200-1, MW-201-1, MW-204-1, MW-205-1 (**Table 12**) were consistent with previous historical results and did not show notable increases indicating that VOCs were not migrating offsite.

6.3 Environmental Effectiveness Monitoring Conclusions

As discussed above, **Figures 9** and **10** indicate that the OU3 BPGWCS System is operating as designed, that the expected associated capture zone has developed, and that off-site migration of groundwater containing Project VOCs is being prevented.

Groundwater monitoring results presented in **Table 12** confirm that the OU3 BPGWCS is effectively preventing Project VOCs in groundwater from migrating offsite.

7 Suggestions

Based on the information provided herein, operation of the BPGWCS shall continue in accordance with the consent order and approved plans. No system modifications or upgrades are needed at this time.

8 Certification

Statement of Certification

On behalf of Northrop Grumman, I hereby certify and attest that the Operable Unit 3 Bethpage Park Groundwater Containment System is operated in compliance with the remedial action objectives provided within the NYSDEC approved Groundwater Interim Remedial Measure Work Plan (Arcadis 2007), which was prepared pursuant to NYSDEC Administrative Order on Consent Index # W1-0018-04-01 (NYSDEC 2005) referencing the Former Grumman Settling Ponds Site and dated July 4, 2005.



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Engineer of Record
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9 References

- Arcadis of New York, Inc. 2007. Operable Unit 3 – Groundwater Interim Remedial Measure Work Plan, Former Grumman Settling Ponds, Bethpage, New York, Site #1-30-003A. December 12, 2007.
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Operable Unit 3 - Groundwater

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Tables

Table 1
Operational Summary
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Northrop Grumman,
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
2018 Total																																		348
2019 Total																																		355
2020 Total																																		345
2021 Total																																		346
Oct 2022																																		31
Nov 2022																																		30
Dec 2022																																		31
4Q 2022																																		92
2022 Total																																		344
TOTAL																																		4710

Legend:

-  Indicates system online for greater than 18 hours.
-  Indicates system operated with reduced flows for 6 hours or greater.
-  Indicates system off-line for 6 hours or greater.

Notes, Abbreviations, and Units on last page.

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



Notes:

1. Days the system was operational for greater than 18 hours are counted as one day.

Fourth Quarter 2022

Abbreviations/Units:

4Q Fourth Quarter

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

Compound ³ (All Constituent Concentrations in µg/L)	01/24/22	02/14/22	03/09/22	05/16/22	08/17/22	11/16/22
Project VOCs						
1,1,1 - Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1 - Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	0.64 J	< 1.0
1,2 - Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1 - Dichloroethene	< 1.0	< 1.0	< 1.0	< 1.0	0.96 J	< 1.0
Tetrachloroethene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	14.8	17.9	16.3	11.6	56.8	49.1
Vinyl Chloride	3.8	3.9	2.9	3.3	11.8	4.5
cis 1,2-Dichloroethene	56.3	65.1	56.9	44.0	125	49.1
trans 1,2-Dichloroethene	0.61 J	0.66 J	0.55 J	< 1.0	1.2	0.78 J
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	0.97	< 0.50
Toluene	3.4	2.6	4.6	7.9	140	3.3
o-Xylene	1.8	2.4	1.8	1.7	21.4	1.5
m,p-Xylene	1.9	2.4	2.2	2.0	28.3	1.6
Subtotal Project VOCs	82.6	95.0	85.3	70.5	387.7	109.9
Non-Project VOCs						
1,1,1,2-Tetrachloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	< 10	< 10	< 10	< 10	< 10	< 10
Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane (Freon 22)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	3.2	3.8	2.8	1.7	1.4	1.2
Chloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes, Abbreviations, 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)
Northrop Grumman,
Bethpage, New York

Compound ³ (All Constituent Concentrations in µg/L)	01/24/22	02/14/22	03/09/22	05/16/22	08/17/22	11/16/22
Non-Project VOCs						
Dichlorodifluoromethane (Freon 12)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichloromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	0.66 J	17.4	1.7
Methyl N-Butyl Ketone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert-Butyl Ether	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane (Freon 11)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorotrifluoroethane (Freon 113)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane (Freon 142b)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Subtotal Non-Project VOCs	3.2	3.8	2.8	2.4	18.8	2.9
Total VOCs^{1,4}	86	99	88	73	407	113
1,4-Dioxane	0.78	0.78	0.79	0.70	2.8	2.0
pH ²	5.9	5.9	5.8	5.4	--	5.1

Notes, Abbreviations, Qualifiers, and Units:

- "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.
- 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.
- Results validated following protocols specified in Sampling and Analysis Plan in the Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). See previous annual reports for historical analytical results.
- As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.

-- pH not recorded due to a field recording error.

VOC Volatile Organic Compound

2.9 Bold value indicates a detection.

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

µg/L micrograms per liter

J Result is estimated.

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



Compound ⁶ (All Constituent Concentrations in µg/L)	Discharge Limit ¹	01/24/22	02/14/22	03/09/22	04/14/22	05/16/22	06/13/22	07/25/22	08/17/22	09/15/22	10/13/22	11/16/22	12/12/22
Project VOCs													
1,1,1-Trichloroethane	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans 1,2-Dichloroethene	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Subtotal Project VOCs		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Compound ⁶ (All Constituent Concentrations in µg/L)	Discharge Limit ¹	01/24/22	02/14/22	03/09/22	04/14/22	05/16/22	06/13/22	07/25/22	08/17/22	09/15/22	10/13/22	11/16/22	12/12/22
Non-Project VOCs													
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chloroform	5 ²	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.1	< 1.1	< 1.0
Dichloromethane	5 ²	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.1	< 2.1	< 2.0
Trichlorotrifluoroethane (Freon 113)	5 ²	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.1	< 5.1	< 5.0
Subtotal Non-Project VOCs		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs^{3,7}		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Treatment Efficiency ⁴		> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%	> 99.9%
Compound ⁶ (All Constituent Concentrations in µg/L)	Discharge Limit ¹	01/24/22	02/14/22	03/09/22	04/14/22	05/16/22	06/13/22	07/25/22	08/17/22	09/15/22	10/13/22	11/16/22	12/12/22
Inorganics													
Total Iron	600	388	174	236	195	323	474	208	767	286	281	214	186
Total Manganese	600	50.3	55.5	49.4	46.4	69.8	56.0	42.6	127.0	82.9	82.0	67.3	70.6
Nitrate and Nitrite	10,000	2,700	3,500	2,400	2,800	2,800	2,600	2,700	2,500	3,100	2,700	3,200	2,800
Total Kjeldahl Nitrogen	10,000	< 200	< 200	< 200	< 200	380.0	< 200	< 200	< 200	< 200	< 200	< 200	< 200
Total Nitrogen	10,000	2,700	3,500	2,400	3,000	3,200	2,600	2,700	2,500	3,100	2,700	3,500	3,000
1,4-Dioxane	NE	0.93	1.1	0.80	0.91	0.82	1.1	0.84	1.8	1.4	1.4	1.2	0.90
pH ⁵	5.5-8.5	6.3	5.9	6.9	6.9	6.9	7.1	7.6	--	7.2	5.9	6.2	7.0

Notes, Abbreviations, 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)
Northrop Grumman,
Bethpage, New York



Notes, Abbreviations, Qualifiers, and Units:

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. Effluent pH measured on site using a handheld pH meter. pH units are standard units.
6. Results validated following protocols specified in Sampling and Analysis Plan in the Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). See previous annual reports for historical analytical results.
7. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.

SPDES	State Pollutant Discharge Elimination System
VOC	Volatile Organic Compound
NE	Not Established
--	pH not recorded due to a field recording error.
1.0	Bold value indicates a detection.
< 1.0	Compound not detected above the laboratory quantification limit.
µg/L	micrograms per liter
ND	Analyte not detected at, or above its laboratory quantification limit.

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



Compound ^{1,3} (All Constituent Concentrations in µg/m ³)	01/31/22	02/14/22	03/09/22	05/16/22	08/17/22
<u>Project VOCs</u>					
1,1,1 - Trichloroethane	0.82	0.60	< 11	< 4.4	< 2.2
1,1 - Dichloroethane	6.1	6.1	< 16	5.7 J	6.5
1,2 - Dichloroethane	< 0.65	< 0.65	< 16	< 6.5	< 3.2
1,1 - Dichloroethene	5.2	5.6	< 3.2	5.6	8.7
Tetrachloroethene	2.2	< 0.22	< 5.4	2.3	3.2
Trichloroethene	304	123	260	261	602
Vinyl Chloride	44.2	58.8	24	54.4	109
cis 1,2-Dichloroethene	1260	1070	1170	1160	1410
trans 1,2-Dichloroethene	11	11	11 J	8.7	13
Benzene	6.4	1.5	< 13	4.5 J	8.3
Toluene	72.0	0.68	102	227	1,050
o-Xylene	38	< 0.69	38	50.0	140
m,p-Xylene	34	< 0.69	44.7	67.8	180
Subtotal Project VOCs	1784	1277	1650	1847	3531
<u>Non-Project VOCs</u>					
1,1,1,2,2-Tetrachloroethane	< 0.55	< 0.55	< 14	< 5.5	< 2.7
1,1,1,2-Trichloroethane	< 0.44	< 0.44	< 11	< 4.4	< 2.2
1,2-Dichloropropane	0.65 J	< 0.74	< 18	< 7.4	< 3.7
1,3-Butadiene	< 0.35	< 0.35	< 8.8	< 3.5	< 1.8
2-Butanone	1.9	4.1	< 12	< 4.7	1.9 J
4-Methyl-2-Pentanone	< 0.66	< 0.66	< 16	< 6.6	< 3.3
Acetone	11	9.0	8.6 J	4.0	10
Bromodichloromethane	2.5	1.4	< 13	< 5.4	< 2.7
Bromoform	< 0.33	< 0.33	< 8.3	< 3.3	< 1.7
Bromomethane	< 0.62	< 0.62	< 16	< 6.2	< 3.1
Carbon Disulfide	< 0.50	< 0.50	< 12	< 5.0	< 2.5
Carbon Tetrachloride	< 0.20	< 0.20	< 5.0	< 2.0	< 1.0
Chlorobenzene	< 0.74	< 0.74	< 18	< 7.4	< 3.7
Chlorodibromomethane	< 0.68	< 0.68	< 17	< 6.8	< 3.4
Chlorodifluoromethane (Freon 22)	< 0.56	3.9	< 14	< 5.6	2.8 J
Chloroethane	< 0.42	< 0.42	< 11	< 4.2	< 2.1
Chloroform	64.9	53.7	52.7	38	23
Chloromethane	1.1	1.4	< 8.3	1.9 J	1.4 J
cis-1,3-Dichloropropene	< 0.73	< 0.73	< 18	< 7.3	< 3.6
Dichlorodifluoromethane (Freon 12)	1.7	1.8	< 20	< 5.6	2.1 J
Dichloromethane	0.80	1.2	8.0 J	< 5.6	19
Ethylbenzene	5.6	< 0.69	< 17	28	108
Methyl N-Butyl Ketone	< 0.65	< 0.65	< 16	< 6.5	< 3.3
Methyl Tert-Butyl Ether	< 0.58	< 0.58	< 14	< 5.8	< 2.9
Styrene (Monomer)	0.51 J	< 0.68	< 17	< 6.8	< 3.4
trans-1,3-Dichloropropene	< 0.73	< 0.73	< 18	< 7.3	< 3.6
Trichlorofluoromethane (Freon 11)	1.2	1.2	< 11	< 4.5	2.6
Trichlorotrifluoroethane (Freon 113)	1.5	1.5	< 15	< 6.1	< 3.1
1-Chloro-1,1-difluoroethane (Freon 142b)	< 0.66	< 0.66	< 16	< 6.6	< 3.3
Subtotal Non-Project VOCs	93	79	69	72	171
Total VOCs^{2,4,5,6}	1877	1356	1719	1920	3702

Notes, Abbreviations, 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)
Northrop Grumman,
Bethpage, New York



Notes, Abbreviations, Qualifiers, and Units:

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.
3. Results validated following protocols specified in Sampling and Analysis Plan in the Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). See previous annual reports for historical analytical results.
4. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.
5. Influent vapor samples were not analyzed for the Q4 2022 reporting period due to a laboratory error. Influent vapor sample results from the Q1 2023 event were in line with historic concentrations.
6. Monthly vapor samples collected through Q1 2022 due to the increase in VOCs detected in groundwater in 2021.

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

2.6	Bold value indicates a detection.
< 3.3	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)
Northrop Grumman,
Bethpage, New York



Compound ^{1,3} (All Constituent Concentrations in µg/m ³)	01/31/22	02/14/22	03/09/22	05/16/22	08/17/22
Project VOCs					
1,1,1 - Trichloroethane	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44
1,1 - Dichloroethane	0.89	0.93	1.1	0.81	1.3
1,2 - Dichloroethane	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65
1,1 - Dichloroethene	0.36	0.40	0.48	0.39	0.83
Tetrachloroethene	0.28	0.25	0.33	0.28	0.54
Trichloroethene	20	19	18	13	33
Vinyl Chloride	13	15	13	12	25
cis 1,2-Dichloroethene	51.1	52.3	56.3	42.4	71.8
trans 1,2-Dichloroethene	0.22 J	0.25 J	0.31 J	< 0.63	0.48 J
Benzene	0.77	0.93	1.3	0.80	1.5
Toluene	9.8	8.7	18	31	166
o-Xylene	6.1	6.1	5.6	5.6	14
m,p-Xylene	4.8	6.1	6.5	7.4	17
Subtotal Project VOCs	107	110	121	114	331
Non-Project VOCs					
1,1,1,2,2-Tetrachloroethane	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55
1,1,1,2-Trichloroethane	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44
1,2-Dichloropropane	< 0.74	< 0.74	< 0.74	< 0.74	< 0.74
1,3-Butadiene	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35
2-Butanone	0.68	1.1	1.1	3.8	3.8
4-Methyl-2-Pentanone	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66
Acetone	7.6	8.1	17	25.7	28.0
Bromodichloromethane	0.53 J	< 0.54	< 0.54	< 0.54	< 0.54
Bromoform	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Bromomethane	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62
Carbon Disulfide	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chlorobenzene	< 0.74	< 0.74	< 0.74	< 0.74	< 0.74
Chlorodibromomethane	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68
Chlorodifluoromethane (Freon 22)	< 0.56	3.5	2.7	2.9	3.3
Chloroethane	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42
Chloroform	9.3	8.8	8.8	5.4	4.1
Chloromethane	1.0	1.2	0.95	1.6	1.4
cis-1,3-Dichloropropene	< 0.73	< 0.73	< 0.73	< 0.73	< 0.73
Dichlorodifluoromethane (Freon 12)	2.0	1.8	1.4	2.9	1.9
Dichloromethane	0.56	0.94	1.8	8	21
Ethylbenzene	0.52 J	0.69	0.74	2.2	7.8
Methyl N-Butyl Ketone	< 0.65	< 0.65	< 0.65	< 0.65	1.4
Methyl Tert-Butyl Ether	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58
Styrene (Monomer)	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68
trans-1,3-Dichloropropene	< 0.73	< 0.73	< 0.73	< 0.73	< 0.73
Trichlorofluoromethane (Freon 11)	< 0.45	< 0.45	< 0.45	1.0	1.9
Trichlorotrifluoroethane (Freon 113)	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61
1-Chloro-1,1-difluoroethane (Freon 142b)	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66
Subtotal Non-Project VOCs	22	26	34	53	75
Total VOCs^{2,4,5}	130	136	155	166	406

Notes, Abbreviations, 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)
Northrop Grumman,
Bethpage, New York



Notes, Abbreviations, Qualifiers, and Units:

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. Results validated following protocols specified in Sampling and Analysis Plan in the Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). See previous annual reports for historical analytical results.
4. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.
5. Effluent vapor samples were not analyzed for the Q4 2022 reporting period due to a laboratory recording error.

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

- 1.9** Bold value indicates a detection.
- < 0.66 Compound not detected above the laboratory quantification limit.
- J Result is estimated.
- µg/m³ 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)
Northrop Grumman,
Bethpage, New York



Compound ^{1,4} (All Constituent Concentrations in ppbv)	01/31/22	02/14/22	03/09/22	05/16/22	08/17/22
<u>Tentatively Identified Compounds</u>					
Carbon Dioxide	210 JNB	120 JNB	50 JNB	440 JNB	530 JNB
1-Hexanol, 2-ethyl	1.6 JN	ND	ND	ND	ND
Acetic acid, 2-ethylhexyl ester	1.2 JN	ND	ND	ND	ND
Ethyl Acetate	ND	ND	10 JN	ND	ND
Cyclohexane, methyl-	ND	ND	ND	ND	1.9 JN
Total VOC TICs^{2,3,5,6}	2.8 J	ND	10 JN	ND	1.9 J

Notes, Abbreviations, Qualifiers, and Units:

- 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.
- VSP-5 sample location moved to new sample port at ECU effluent stack.
- Compounds found in associated method blank are not included in Total VOC TICs.
- Results validated following protocols specified in Sampling and Analysis Plan in the Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). See previous annual reports for historical analytical results.
- As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.
- Effluent vapor samples were not analyzed for the Q4 2022 reporting period due to a laboratory recording error.

ECU	Emission Control Unit
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
530	Bold value indicates a detection.
ND	TIC were not detected.
B	TIC was detected in the associated method 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)
Northrop Grumman,
Bethpage, New York



Date ¹	Water Flow Rates (All Flows in gpm)						Water Pressures (All Pressures in psi)					Air Flow Rate (scfm) ²	Air Pressures (All Pressures in iwc) ^{5,6}					Air Temp. (°R) ⁵	
	Remedial Well ²				Combined Influent ³	Effluent ²	Remedial Well Effluent ^{2,4}				Effluent ⁵		Effluent	ECU Influent					Effluent
	RW-1 ⁸	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)	(iwc)	(°R)
01/24/22	30.4	75.4	75.4	30.2	211	201	57	38	45	57	26	1,442	5.5	< 1.0	0.5	< 1.0	< 1.0	< 1.0	526
02/14/22	30.4	75.3	75.5	31.0	212	200	57	38	45	56	20	1,450	5.4	< 1.0	0.4	< 1.0	0.4	0.4	517
3/9/2022 ⁷	30.3	74.3	75.2	30.4	210	203	56	36	45	30	22	1,434	5.0	< 1.0	1.0	< 1.0	1.0	1.0	519
04/14/22	30.2	74.5	74.7	30.3	210	200	57	32	48	57	12	1,309	5.0	< 1.0	1.0	< 1.0	1.0	1.0	540
05/16/22	30.6	75.5	75.4	30.4	212	198	57	26	46	57	16	1,425	5.0	< 1.0	1.0	< 1.0	1.0	1.0	542
06/13/22	30.8	74.9	76.3	30.3	212	190	57	18	47	56	15	1,419	5.0	< 1.0	1.0	< 1.0	1.0	1.0	546
07/25/22	28.8	75.1	74.9	30.3	209	203	57	17	48	56	27	1,314	4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	550
08/17/22	17.5	75.7	74.8	30.4	198	182	92	13	43	55	11	1,308	4.0	< 1.0	< 1.0	< 1.0	0.5	0.5	548
09/15/22	18.3	66.2	74.7	30.5	190	184	90	8	43	55	10	1,282	4.0	< 1.0	< 1.0	< 1.0	0.5	0.5	549
10/13/22	15.9	65.6	74.8	29.9	186	178	22	8	43	55	10	1,125	3.5	< 1.0	< 1.0	< 1.0	0.5	0.5	538
11/16/22	14.5	66.2	73.1	29.9	184	175	23	8	47	56	11	1,109	3.5	< 1.0	< 1.0	< 1.0	6.5	6.5	528
12/12/22	14.1	66.1	75.0	30.0	185	189	22	8	41	56	20	1,173	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	536

Notes, Abbreviations, and Units on last page.

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



Notes, Abbreviations, and Units:

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. Pressure readings recorded as < 1.0 iwc due to pressure being too low for gauge sensitivity.
7. Data recorded by Northrop Grumman Operator on 03/08/2022 due to field recording error.
8. As of August 4, 2022 the RW-1 flow rate presented includes the combined flow rates from wells BCPMW-4-1 and BCPMW-4-2 as additional recovery wells.

ECU	Emission Control Unit
GAC	Granular Activated Carbon
HMI	Human-Machine Interface
RW	Remedial Well
SCADA	Supervisory Control and Data Acquisition
Temp	Temperature
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)
 Northrop Grumman,
 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 ⁹	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	NA		
2010 Totals	15,726	35,127	38,160	15,689	104,702	0.56	172	412	89	672	0.56	171	28	0.10	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			
2018 Totals	15,145	37,712	32,473	14,917	100,247	< 0.01	13.71	0.90	0.56	15.2	< 0.01	13.5	0.70	< 0.01	14.2	< 0.01	0.27	0.19	0.52	0.97	< 0.01	0.038	< 0.01	< 0.01	0.042	< 0.01	0.037	< 0.01	< 0.01	0.039	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
2019 Totals	15,456	32,470	38,416	15,343	101,685	< 0.01	11.51	1.36	0.22	13.10	< 0.01	11.51	1.07	< 0.01	12.59	< 0.01	< 0.01	0.29	0.18	0.63	< 0.01	0.032	< 0.01	< 0.01	0.036	< 0.01	0.032	< 0.01	< 0.01	0.034	< 0.01	< 0.01	0.001	< 0.01				
2020 Totals	14,475	35,814	37,537	15,113	102,939	< 0.01	19.3	1.3	< 0.01	20.6	< 0.01	19.3	0.91	< 0.01	20.2	< 0.01	< 0.01	0.36	< 0.01	0.36	< 0.01	0.053	< 0.01	< 0.01	0.056	< 0.01	0.053	< 0.01	< 0.01	0.055	< 0.01	< 0.01	< 0.01	< 0.01				
2021 Totals	14,490	36,403	38,153	15,324	104,370	< 0.01	171.4	1.9	0.05	173.3	< 0.01	167.7	1.14	< 0.01	168.9	< 0.01	3.6	0.75	0.11	4.49	< 0.01	1.865	< 0.01	< 0.01	1.886	< 0.01	1.825	< 0.01	< 0.01	1.839	< 0.01	0.04	< 0.01	< 0.01	0.0470			
January 2022 through March 2022																																						
01/01/22 - 02/01/22	1,348	3,412	3,380	1,356	9,496	< 0.01	7.41	1.78	< 0.01	9.19	< 0.01	7.0	1.50	< 0.01	8.5	< 0.01	0.344	0.28	0.02	0.639	< 0.01	0.239	0.057	< 0.01	0.296	< 0.01	0.227	0.048	< 0.01	0.276	< 0.01	0.01	< 0.01	< 0.01	0.0210			
02/01/22 - 03/01/22	1,222	3,038	3,044	1,244	8,548	< 0.01	7.03	1.64	< 0.01	8.67	< 0.01	6.7	1.38	< 0.01	8.1	< 0.01	0.263	0.26	0.02	0.538	< 0.01	0.251	0.059	< 0.01	0.310	< 0.01	0.241	0.049	< 0.01	0.290	< 0.01	0.01	< 0.01	< 0.01	0.0190			
03/01/22 - 04/01/22	1,304	3,245	3,264	1,305	9,118	< 0.01	7.03	1.65	< 0.01	8.69	< 0.01	6.6	1.39	< 0.01	8.0	< 0.01	0.422	0.26	0.01	0.693	< 0.01	0.227	0.053	< 0.01	0.280	< 0.01	0.213	0.045	< 0.01	0.258	< 0.01	0.01	< 0.01	< 0.01	0.0220			
Subtotal Jan - Mar 2022	3,874	9,694	9,688	3,905	27,162	< 0.01	21.47	5.07	< 0.01	26.55	< 0.01	20.4	4.28	< 0.01	24.7	< 0.01	1.029	0.80	0.05	1.87	< 0.01	0.239	0.056	< 0.01	0.295	< 0.01	0.226	0.048	< 0.01	0.274	< 0.01	0.01	< 0.01	< 0.01	0.0210			
April 2022 through June 2022																																						
04/01/22 - 05/01/22	1,278	3,191	3,213	1,283	8,966	< 0.01	6.13	1.01	< 0.01	7.14	< 0.01	6.1	0.88	< 0.01	6.9	< 0.01	0.077	0.13	0.03	0.235	< 0.01	0.204	0.034	< 0.01	0.238	< 0.01	0.202	0.029	< 0.01	0.231	< 0.01	0.00	< 0.01	< 0.01	< 0.01			
05/01/22 - 06/01/22	901	2,741	2,748	989	7,379	< 0.01	5.27	0.86	< 0.01	6.13	< 0.01	5.2	0.75	< 0.01	6.0	< 0.01	0.066	0.11	0.02	0.199	< 0.01	0.170	0.028	< 0.01	0.198	< 0.01	0.168	0.024	< 0.01	0.192	< 0.01	0.00	< 0.01	< 0.01	< 0.01			
06/01/22 - 07/01/22	1,217	3,203	3,249	1,286	8,955	< 0.01	6.15	1.02	< 0.01	7.17	< 0.01	6.1	0.89	< 0.01	7.0	< 0.01	0.077	0.13	0.03	0.237	< 0.01	0.205	0.034	< 0.01	0.239	< 0.01	0.203	0.030	< 0.01	0.232	< 0.01	0.00	< 0.01	< 0.01	< 0.01			
Subtotal Apr - Jun 2022	3,396	9,135	9,210	3,558	25,299	< 0.01	17.55	2.89	< 0.01	20.44	< 0.01	17.3	2.51	< 0.01	19.8	< 0.01	0.220	0.38	0.08	0.67	< 0.01	0.193	0.032	< 0.01	0.225	< 0.01	0.190	0.028	< 0.01	0.218	< 0.01	0.00	< 0.01	< 0.01	< 0.01			
July 2022 through September 2022																																						
07/01/22 - 08/01/22	1,177	3,137	3,127	1,267	8,709	15.8	3.60	1.24	< 0.01	20.65	15.2	3.6	1.16	< 0.01	19.9	0.6	0.029	0.08	< 0.01	0.750	0.510	0.116	0.040	< 0.01	0.666	0.490	0.115	0.037	< 0.01	0.642	0.02	0.00	< 0.01	< 0.01	0.0240			
08/01/22 - 09/01/22	789	3,048	3,008	1,231	8,076	10.6	3.49	1.19	< 0.01	15.28	10.2	3.5	1.12	< 0.01	14.7	0.4	0.028	0.08	< 0.01	0.535	0.342	0.113	0.038	< 0.01	0.493	0.328	0.112	0.036	< 0.01	0.476	0.01	0.00	< 0.01	< 0.01	0.0170			
09/01/22 - 10/01/22	720	3,022	3,263	1,319	8,323	9.7	3.46	1.29	< 0.01	14.43	9.3	3.4	1.21	< 0.01	13.9	0.4	0.028	0.08	< 0.01	0.503	0.322	0.115	0.043	< 0.01	0.481	0.309	0.115	0.040	< 0.01	0.464	0.01	0.00	< 0.01	< 0.01	0.0170			
Subtotal Jul - Sep 2022	2,686	9,207	9,398	3,817	25,108	36.1	10.56	3.73	< 0.01	50.36	34.6	10.5	3.49	< 0.01	48.6	1.5	0.085	0.24	< 0.01	1.79	0.392	0.115	0.041	< 0.01	0.547	0.376	0.114	0.038	< 0.01	0.528	0.02	0.00	< 0.01	< 0.01	0.0190			
October through December 2022																																						
10/01/22 - 11/01/22	708	2,959	3,375	1,339	8,381	2.8	1.01	1.03	< 0.01	4.83	2.7	1.0	0.97	< 0.01	4.7	0.1	< 0.01	0.07	< 0.01	0.143	0.090	0.033	0.033	< 0.01	0.156	0.087	0.033	0.031	< 0.01	0.151	0.00	< 0.01	< 0.01	< 0.01				
11/01/22 - 12/01/22	626	2,860	3,214	1,287	7,987	2.5	0.97	0.99	< 0.01	4.43	2.4	1.0	0.92	< 0.01	4.3	0.1	< 0.01	0.06	< 0.01	0.131	0.082	0.032	0.033	< 0.01	0.148	0.080	0.032	0.031	< 0.01	0.143	0.00	< 0.01	< 0.01	< 0.01				
12/01/22 - 01/01/23	934	2,946	3,345	1,332	8,558	3.7	1.00	1.03	< 0.01	5.71	3.6	1.0	0.96	< 0.01	5.5	0.1	< 0.01	0.06	< 0.01	0.167	0.119	0.032	0.033	< 0.01	0.184	0.115	0.032	0.031	< 0.01	0.179	0.00	< 0.01	< 0.01	< 0.01				
Subtotal Oct - Dec 2022</																																						

Notes, Abbreviations, Qualifiers, and Units:

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. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.

NA	Not Applicable
VOC	Volatile Organic Compound.
<	Less than
gal	Gallons
lbs	Pounds
lbs/day	Pounds per day

Table 9
 2022 Rule 212 Evaluation
 Bethpage Park Soil Gas Containment System, ISTR, and Groundwater Containment System
 Operable Unit 3 (Former Grumman Settling Ponds)
 Northrop Grumman,
 Bethpage, New York



Project VOCs	CAS#	HTAC? ¹	2022 BPGWCS Maximum Effluent Conc. (ug/m3) ^{2,8}	2022 BPSGCS Maximum Effluent Conc.- not combined with ISTR (ug/m3) ^{2,8}	2022 BPSGCS Maximum Effluent Conc.- combined with ISTR (ug/m3) ^{2,8}	2022 BPGWCS Emissions (lb/yr) ⁴	2022 BPSGCS Emissions - combined with ISTR (lb/yr) ⁴	Facility Wide Emissions (lb/yr) ⁵	Rule 212 Emission Limit (lb/yr) ⁶	Further evaluation Required? ⁷
1,1,1-Trichloroethane	71-55-6	No		5.1	3.9	0.000	0.020	0.261	100	N
1,1 - Dichloroethane	75-34-3	No	1.3	8.1	21	0.067	0.110	0.558	100	N
1,1 - Dichloroethene	75-35-4	No	0.83	1.2	6.3	0.043	0.033	0.132	100	N
Benzene	71-43-2	Yes	1.5	2.8	2.3	0.077	0.012	0.221	100	N
cis- 1,2-Dichloroethene	156-59-2	No	71.8	157	971	3.705	5.064	16.163	100	N
Tetrachloroethene	127-18-4	Yes	0.54	780	2.6	0.028	0.014	36.777	1000	N
Toluene	108-88-3	No	166	14	3.8	8.566	0.020	9.245	100	N
trans- 1,2-Dichloroethene	156-60-5	No	0.48	2.7	33	0.025	0.172	0.324	100	N
Trichloroethene	79-01-6	Yes	33	256	2	1.703	0.011	13.771	500	N
Vinyl Chloride	75-01-4	Yes	25	1.3	43.5	1.290	0.227	1.578	100	N
Xylenes ³	1330-20-7	No	31	3.8	10	1.600	0.052	1.831	100	N
Non-Project VOCs										
1-Chloro-1,1-difluoroethane (Freon 142B)	75-68-3	No		129		0.000	0.000	6.076	100	N
2-Butanone	78-93-3	No	3.8	4.70	12	0.196	0.063	0.480	100	N
4-Methyl-2-Pentanone	108-10-1	No		3.1		0.000	0.000	0.146	100	N
Acetone	67-64-1	No	28.0	15	75.5	1.445	0.394	2.545	100	N
Bromodichloromethane	75-27-4	No	0.53			0.027	0.000	0.027	100	N
Carbon Disulfide	75-15-0	No		0.78	16	0.000	0.083	0.120	100	N
Carbon Tetrachloride	56-23-5	Yes		1.10		0.000	0.000	0.052	100	N
Chlorodifluoromethane (Freon 22)	75-45-6	No	3.5	0.91		0.181	0.000	0.223	100	N
Chloroethane	75-00-3	No		0.26		0.000	0.000	0.012	100	N
Chloromethane	74-87-3	No	1.6	1.1	3.1	0.083	0.016	0.151	100	N
Chloroform	67-66-3	Yes	9.3	28	71.8	0.480	0.374	2.173	100	N
Dichlorodifluoromethane (Freon 12)	75-71-8	No	2.9	2.5	4.5	0.150	0.023	0.291	100	N
Ethylbenzene	100-41-4	No	7.8	0.65	2.8	0.403	0.015	0.448	100	N
Methylene Chloride	75-09-2	No	21	16	5.6	1.084	0.029	1.866	100	N
Styrene (Monomer)	100-42-5	No		5.50		0.000	0.000	0.259	100	N

Footnotes on last page

Table 9
2022 Rule 212 Evaluation
Bethpage Park Soil Gas Containment System, ISTR, and Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Northrop Grumman,
Bethpage, New York



Project VOCs	CAS#	HTAC? ¹	2022 BPGWCS Maximum Effluent Conc. (ug/m3) ^{2,8}	2022 BPSGCS Maximum Effluent Conc.- not combined with ISTR (ug/m3) ^{2,8}	2022 BPSGCS Maximum Effluent Conc.- combined with ISTR (ug/m3) ^{2,8}	2022 BPGWCS Emissions (lb/yr) ⁴	2022 BPSGCS Emissions - combined with ISTR (lb/yr) ⁴	Facility Wide Emissions (lb/yr) ⁵	Rule 212 Emission Limit (lb/yr) ⁶	Further evaluation Required? ⁷
Non-Project VOCs (cont'd)										
Trichlorofluoromethane (Freon 11)	75-69-4	No	1.9	3.2	3.7	0.098	0.019	0.268	100	N
Trichlorotrifluoroethane (Freon 113)	76-13-1	No		1.2		0.000	0.000	0.057	100	N
1,2,4-Trimethylbenzene	95-36-3	No			1.9	0.000	0.010	0.010	100	N
2,2,4-Trimethylpentane	540-84-1	No			9.8	0.000	0.051	0.051	100	N
Cyclohexane	110-82-7	No			3.3	0.000	0.017	0.017	100	N
Ethanol	64-17-5	No		5.5	83.3	0.000	0.434	0.693	100	N
Ethyl Acetate	141-78-6	No		2.0	47.1	0.000	0.246	0.340	100	N
Hexane	110-54-3	No			2	0.000	0.010	0.010	100	N
Isopropyl Alcohol	67-63-0	No		13	90	0.000	0.469	1.082	100	N
Propylene	115-07-1	No			18.4	0.000	0.096	0.096	100	N

Flowrates

Description	Flow (cfm)
BPGWCS	1576
BPSGCS - combined with ISTR	953

Notes:

- High toxicity air contaminant (HTAC) based on 6 CRR-NY Rule 212-2.2, Table 2 – high toxicity air contaminant list.
- Maximum effluent concentrations for soil gas effluent from VSP-601, GW vapor from VSP-05, and combined soil gas/ISTR from VGAC4 based on sampling performed in 2022. Compounds not detected above the laboratory reporting limit are excluded from the air quality impact analysis summary.
- Total for xylenes m, o, and P.
- Emission rate calculated based on maximum effluent concentration and maximum air flow rates measured during the sampling events. Emission rate standardized at 70 °F and 1 atm.
 e.g., TCE (lb/yr) = TCE [µg/m³] x Air Flow Rate [ft³/min] x (1 m³/35.3147 ft³) x (60 min/hr) x (0.000001 g/1 µg) x (0.0022 lb/g) x 8,760 hrs/yr
- Combined 2022 emissions from groundwater, ISTR, and soil gas containment systems.
- 100 lb/yr for non-HTACs, and mass emission limits based on Rule 212-2.2, Table 2 for HTACs.
- For HTACs, no further demonstration (i.e., comparison to SGCs, AGCs, or air modeling) is required if the actual facility-wide emissions are less than mass emission limit. For non-HTACs, no further demonstration is required if the actual facility-wide emissions are less than 100 lbs/yr.
- Blank cell indicates that the compound was not detected above its laboratory quantification limit.

Table 10
Summary of Remedial Well Groundwater Sample Analytical Results - VOCs
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Northrop Grumman,
Bethpage, New York



Compound ¹ (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: NYSDEC SCGs	RW-1 1/24/2022	RW-1 2/14/2022	RW-1 3/9/2022	RW-1 5/16/2022	RW-1 8/17/2022	RW-1 11/16/2022	RW-2 1/24/2022	RW-2 2/14/2022	RW-2 3/9/2022	RW-2 5/16/2022	RW-2 8/17/2022	RW-2 11/16/2022
Project VOCs													
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	2.3	2.1	0.94 J	1.1	0.84 J	0.68 J	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	3.2	1.5	1.4	0.93 J	0.70 J	0.96 J	0.69 J	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.60 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene	5	< 1.0	0.58 J	< 1.0	< 1.0	192	192	31.3	36.6	33.8	27.6	24.4	12.9
Vinyl Chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	45.3	27.1	13.8	12.7	9.5	12.1	6.9	1.7
cis-1,2-dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	414	188	183	192	181	154	96.7	26.3
trans-1,2-dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	4.6	3.8	1.4	1.6	1.4	1.8	0.92 J	< 1.0
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	3.8	1.6	0.92	1.0	0.74	0.90	0.54	< 0.50
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	690	21.2	12.1	10.4	15.6	33.5	3.5	< 1.0
Xylene-o	5	< 1.0	< 1.0	< 1.0	< 1.0	85.3	11.4	7.2	10.1	7.2	7.1	0.93 J	< 1.0
Xylenes-m,p	5	< 1.0	< 1.0	< 1.0	< 1.0	110	11.8	7.4	10	8.3	8.6	1.9	< 1.0
Subtotal Project VOCs		ND	0.6	ND	ND	1,550.5	461.1	259.5	276.4	259.1	247.2	136.5	40.9
Non-Project VOCs													
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	0.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-methyl-2-pentanone	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	0.59 J	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.53 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	< 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	< 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	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	65.2	12.7	1.2	1.3	1.0	2.9	1.1	< 1.0
Methyl N-Butyl Ketone	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-Butyl Ether	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane (Freon 11)	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorotrifluoroethane (Freon 113)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane (Freon 142b)	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Subtotal Non-Project VOCs		ND	ND	ND	ND	65.2	13.2	1.2	1.9	1.0	2.9	1.1	ND
Total VOCs^{2,3}		ND	0.6	ND	ND	1616	474	260.7	278.3	260.1	250.1	137.6	40.9
1,4-Dioxane		0.24	0.22 J	0.22 J	0.25	11	11.0	2.3	2.1	2.1	1.4	1.6	0.64

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

Table 10
Summary of Remedial Well Groundwater Sample Analytical Results - VOCs
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Northrop Grumman,
Bethpage, New York



Compound ¹ (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: NYSDEC SCGs	RW-3 1/24/2022	RW-3 2/14/2022	RW-3 3/9/2022	RW-3 5/16/2022	RW-3 8/17/2022	RW-3 11/16/2022	RW-4 1/24/2022	RW-4 2/14/2022	RW-4 3/9/2022	RW-4 5/16/2022	RW-4 8/17/2022	RW-4 11/16/2022
Project VOCs													
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene	5	20.7	23.2	22.2	13.2	17.0	10.0	< 1.0	0.57 J	< 1.0	< 1.0	< 1.0	0.56 J
Vinyl Chloride	2	0.82 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene	5	30.4	30.5	28.5	18.8	27.5	24.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene	5	0.76 J	0.75 J	0.56 J	0.76 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	5	0.60 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes-m,p	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Subtotal Project VOCs		53.3	54.5	51.3	32.8	44.5	35	ND	0.57	ND	ND	ND	0.56
Non-Project VOCs													
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	0.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-methyl-2-pentanone	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 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	< 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	< 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	1.4 J	1.5 J	1.2 J	2.5 J	< 5.0	0.78 J
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	9.9	10.2	9.5	4.9	3.1	2.3	< 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	< 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	< 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	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-Butyl Ether	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane (Freon 11)	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorotrifluoroethane (Freon 113)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane (Freon 142b)	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Subtotal Non-Project VOCs		9.9	10.2	9.5	4.9	3.1	2.3	1.4	1.5	1.2	2.5	ND	0.78
Total VOCs^{2,3}		63.2	64.7	60.8	37.7	47.6	36.8	1.4	2.1	1.2	2.5	ND	1.3
1,4-Dioxane		0.58	0.64	0.60	0.73	0.58	1.1	< 0.24	< 0.24	< 0.23	< 0.24	0.15 J	0.12

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

Table 10
Summary of Remedial Well Groundwater Sample Analytical Results - VOCs
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Northrop Grumman,
Bethpage, New York



Notes, Abbreviations, Qualifiers, and Units:

1. Water samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per NYSDEC ASP 2005, Method OLM 4.3 (prior to September 1, 2014) and per USEPA Method 8260C (after September 1, 2014). Results validated following protocols specified in Sampling and Analysis Plan in the DRAFT Bethpage Park Groundwater Containment System OM&M Manual (Arcadis 2016). See previous quarterly reports for historical analytical results.
2. "Total VOCs" represents the sum of individual concentrations of the VOCs detected.
3. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.

ASP	Analytical Services Protocol
ELAP	Environmental Laboratory Approval Program
NE	Not Established
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OLM	Ozone Limited Method
OM&M	Operation, Maintenance, and Monitoring
SCGs	Standards, Criteria, and Guidance values
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

2.1	Bold cell outline indicates an exceedance of an SCG
< 1.0	Bold data indicates a detection
J	Compound not detected above its laboratory quantification limit
ND	Compound detected below its reporting limit; value is estimated
µg/L	Analyte not detected at, or above its laboratory quantification limit.
	micrograms per liter

Table 11
Summary of Water-Level Elevations
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York



Well/Piezometer Identification (All Elevations in ft msl)	Measuring Point Elevation	Q1 2022 3/15-16/2022	Q2 2022 6/13/2022	Q3 2022 9/6/2022	4Q 2022 11/22/2022	Comments
Recovery Wells						
RW-1	125.18	70.15	70.29	68.95	67.97	
RW-2	124.48	60.02	NM	59.48	68.56	
RW-3	122.84	65.18	66.72	65.49	65.30	
RW-4	121.24	69.37	69.30	69.34	64.02	
BCPMW-4-1 ⁽¹⁾	123.31 ⁽³⁾	--	--	64.21	66.72	
BCPMW-4-2 ⁽¹⁾	123.32 ⁽³⁾	--	--	63.32	66.48	
Monitoring Wells						
B24MW-2	126.96	74.83	73.81	71.34	71.41	
B24MW-3	127.11	72.17	73.09	--	70.39	
B30MW-1	128.33	72.46	72.54	70.27	69.78	
BCPMW-1	125.73	--	--	--	--	Abandoned
BCPMW-2	126.39	--	--	--	--	Can not locate
BCPMW-3	124.94	67.31	68.12	NA	NA	
BCPMW-4-1 ⁽¹⁾	128.71 ⁽³⁾	71.12	71.61	--	--	
BCPMW-4-2 ⁽¹⁾	129.33 ⁽³⁾	74.26	71.23	--	--	
BCPMW-4-3	129.20	71.22	71.30	70.00	72.04	
BCPMW-5-1	129.37	--	--	--	--	Abandoned
BCPMW-6-1	126.01	71.63	70.71	71.20	68.11	
BCPMW-6-2	125.16	70.57	70.36	70.04	67.73	
BCPMW-7-1	124.81	69.87	70.60	68.53	67.91	
MW-200-1	123.49	72.18	71.00	68.84	68.31	
MW-201-1	121.69	77.01	70.71	68.57	68.05	
MW-202-1	119.27	70.83	70.62	68.45	67.97	
MW-203-1	118.25	70.73	70.60	68.45	67.90	
MW-204-1	124.95	71.74	71.01	68.75	68.24	
MW-205-1	123.47	70.41	70.65	68.49	67.98	
MW-206-1	120.80	73.01	70.60	68.47	67.98	
MW-207A-1R ⁽²⁾	120.38	67.35	70.31	68.13	67.62	
MW-207B-1R ⁽²⁾	120.48	70.54	70.48	68.30	67.92	
MW-208-1	118.56	63.91	70.50	68.80	68.61	
Piezometers						
PZ-1a	128.82	70.64	70.51	68.21	67.74	
PZ-1b	128.92	--	70.91	68.56	68.06	
PZ-1c	128.96	--	71.07	68.82	67.95	
PZ-2a	128.36	73.92	70.78	68.56	68.03	
PZ-2b	128.37	70.87	70.72	68.50	68.19	
PZ-2c	128.55	70.78	70.93	71.70	68.28	
PZ-3	124.99	70.81	69.97	68.36	67.95	
PZ-4	125.31	70.47	68.16	68.55	68.03	
PZ-5a	129.07	71.71	71.58	69.33	70.35	
PZ-5b	129.06	71.60	71.41	69.34	70.75	
PZ-5c	128.84	71.57	71.40	69.27	70.25	
PZ-6a	125.67	70.45	70.55	68.39	65.96	
PZ-6b	125.74	69.53	70.46	68.30	66.63	
PZ-7a	125.10	70.99	70.81	68.72	68.10	
PZ-7b	125.06	70.75	70.57	68.39	67.93	
PZ-8a	127.63	70.59	70.52	69.75	70.16	
PZ-8b	127.54	70.65	70.57	70.31	70.56	
PZ-8c	127.57	71.19	70.76	70.63	69.89	
PZ-9a	125.30	--	--	--	--	Destroyed
PZ-10a	125.27	71.58	71.65	69.22	68.83	

Notes and abbreviations on last page.

Table 11
Summary of Water-Level Elevations
Bethpage Park Groundwater Containment System
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York



Notes and Abbreviations:

- | | |
|--------|---|
| 1. | BCPMW-4-1 and BCPMW-4-2 were converted to recovery wells. Q1 and Q2 data recorded as monitoring wells, Q3 and Q4 data recorded as recovery wells |
| 2. | Wells installed by EMAGIN in 2017 to replace monitoring wells MW-207-1a (replaced by MW-207A-1R) and MW-207-1b (replaced by MW-207B-1R) installed by ERM in 2015. |
| 3. | Wells resurveyed following conversion to recovery wells. Lower elevations applied to Q3 and Q4 measurements. |
| ft msl | Feet relative to mean sea level |
| -- | Not measured |
| NA | Not Accessible |

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	B24MW-2 12/29/2016 B24MW-2	B24MW-2 8/4/2017 B24MW-2	B24MW-2 8/9/2018 B24MW-2	B24MW-2 7/18/2019 B24MW-2	B24MW-2 7/16/2020 B24MW-2	B24MW-2 7/23/2021 B24MW-2	B24MW-2 7/20/2022 B24MW-2	B24MW-2 7/20/2022 REP200722PQ	B24MW-3 1/20/2017 B24MW-3	B24MW-3 8/2/2017 B24MW-3	B24MW-3 8/9/2018 B24MW-3	B24MW-3 7/16/2019 B24MW-3
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0 J	--	--	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J	< 10 J	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J	< 10 J	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J	< 2.0 J	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 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	< 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	< 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 J	< 1.0 J	< 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	0.64 J	0.57 J	< 1.0	0.59 J	< 1.0	3.2
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	2.4	2.1	2.5	4.0	6.1	4.2	4.1	4.5	< 1.0	< 1.0	< 1.0	1.3
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J	< 1.0 J	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		2.4	2.1	2.5	4	6.1	4.2	4.74	5.07	0	0.59	0	4.5
Project VOCs⁽⁵⁾		2.4	2.1	2.5	4	6.1	4.2	4.74	5.07	0	0.59	0	4.5
1,4-Dioxane⁽⁶⁾		--	--	0.16 J	0.29	0.91	0.52	0.85	0.82	--	--	0.11 J	< 0.24

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	B24MW-3 7/9/2020 B24MW-3	B24MW-3 7/21/2021 B24MW-3	B24MW-3 7/20/2022 B24MW-3	B30MW-1 1/4/2017 B30MW-1	B30MW-1 8/3/2017 B30MW-1	B30MW-1 8/9/2018 B30MW-1	B30MW-1 7/17/2019 B30MW-1	B30MW-1 7/21/2020 B30MW-1	B30MW-1 7/23/2021 B30MW-1	B30MW-1 7/20/2022 B30MW-1	BCPMW-4-1 12/28/2016 BCPMW-4-1	BCPMW-4-1 7/31/2017 BCPMW4-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.36 J	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	3.2	1.6
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.42 J	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.87 J	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0 J	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	--	--
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--
2-Butanone (MEK)	50	< 10	< 10	< 10 J	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10 J	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0 J	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	1.4	0.76 J
Chloromethane	5	< 1.0	< 1.0	< 1.0 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	81.4	53.5
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	0.50 J	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	0.49 J	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	48.2	21.9
Vinyl chloride	2	< 1.0	< 1.0	< 1.0 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J	3.3	< 1.0
Total VOCs⁽⁴⁾		0	0	0	0	0	0	0	0	0	0	140.14	77.76
Project VOCs⁽⁵⁾		0	0	0	0	0	0	0	0	0	0	138.74	77
1,4-Dioxane⁽⁶⁾		0.31	0.10 J	0.25	--	--	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	--	--

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	BCPMW-4-1 7/24/2018 BCPMW-4-1	BCPMW-4-1 7/11/2019 BCPMW-4-1	BCPMW-4-1 7/20/2020 BCPMW4-1	BCPMW-4-1 7/20/2021 BCPMW4-1	BCPMW-4-1 4/8/2022 BCPMW-4-1	BCPMW-4-1 5/2/2022 BCPMW-4-1	BCPMW-4-2 12/22/2016 BCPMW-4-2	BCPMW-4-2 12/22/2016 REP122216PP1	BCPMW-4-2 7/31/2017 BCPMW4-2	BCPMW-4-2 7/24/2018 BCPMW-4-2	BCPMW-4-2 7/11/2019 BCPMW-4-2	BCPMW-4-2 7/20/2020 BCPMW4-2
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	1.4	< 1.0	< 25	< 50	< 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	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 130	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	0.87 J	0.73 J	6.2	3.4	15.9 J	< 50	0.22 J	0.23 J	0.25 J	0.87 J	0.97 J	0.59 J
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	0.60 J	73.4	65.5	< 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	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 130	< 250	--	--	--	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 130	< 250	--	--	--	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 250	< 500	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 130	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	104 J	< 500	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	31.2	26.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 50	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 50	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	--	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 50	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 130	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	3.9	3.6	2.3	1.3	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	30.7	20.7	96.7	38.6	8570	5060	16.9	17.4	19.9	58.1	68.5	54.6
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 50	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	728	639	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	2480	2180	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 130	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	< 1.0	< 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	1090	857	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	0.27 J	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	9810	9690 D	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	0.99 J	52.4	52.9	0.62 J	0.58 J	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	13.5	8.9	32.9	46.8	226	132	18.0	18.1	17.6	61.5	37.0	44.1
Vinyl chloride	2	< 1.0	< 1.0	5.6	6.8	263	234	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.97 J
Total VOCs⁽⁴⁾		45.07	30.33	142.8	97.19	23443.9	18936.9	39.64	40.18	40.05	121.77	106.47	100.26
Project VOCs⁽⁵⁾		45.07	30.33	142.8	97.19	22611.9	18297.9	35.74	36.58	37.75	120.47	106.47	100.26
1,4-Dioxane⁽⁶⁾		0.68	7.4	31	15	--	--	--	--	--	2.4	0.77	10

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	BCPMW-4-2 8/2/2021 BCPMW4-2	BCPMW-4-2 3/7/2022 BCPMW-4-2	BCPMW-4-2 3/25/2022 BCP MW4-2	BCPMW-4-2 4/8/2022 BCPMW-4-2	BCPMW-4-2 5/2/2022 BCPMW-4-2	BCPMW-4-3 12/22/2016 BCPMW-4-3	BCPMW-4-3 8/3/2017 BCPMW-4-3	BCPMW-4-3 8/8/2018 BCPMW-4-3	BCPMW-4-3 7/11/2019 BCPMW-4-3	BCPMW-4-3 7/21/2020 BCPMW4-3	BCPMW-4-3 8/2/2021 BCPMW4-3	BCPMW-4-3 4/11/2022 BCPMW-4-3
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 50	< 500	< 5.0	< 500	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 10	< 100	18.5	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 10	< 100	23.8	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 50	< 500	< 5.0	< 500	< 250	--	--	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 50	< 500	< 5.0	< 500	< 250	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 100	< 1000	< 10	< 1000	< 500	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 50	< 500	12.7	< 500	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 100	< 1000	76.9	< 1000	< 500	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 5.0	63.7	56.3	57.2	22.7 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 20	< 200	< 2.0	< 200	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 20	< 200	< 2.0	< 200	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 20	--	--	--	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--
CFC-12	5	< 20	< 200	< 2.0	< 200	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 50	< 500	< 5.0	< 500	< 250	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 10	< 100	< 1.0	< 100	< 50	0.52 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	342	5300	3660	2800	1550	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 20	< 200	< 2.0	< 200	< 100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	13.0	1270	749	611	371	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	27.6	3100	2060	1580	816	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 50	< 500	< 5.0	< 500	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 10	--	--	--	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	--
o-Xylene	5	13.6	1500	983	753	352	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	1230	16700	27500	25400	15500 D	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 10	< 100	8.1	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 10	< 100	< 1.0	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	42.4	< 100	26.1	< 100	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	33.9	495	250	255	158	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		1702.5	28428.7	35424.4	31456.2	18769.7	0.52	0	0	0	0	0	0
Project VOCs⁽⁵⁾		1689.5	27158.7	34585.8	30845.2	18398.7	0	0	0	0	0	0	0
1,4-Dioxane⁽⁶⁾		27	--	--	--	--	--	--	0.43	0.41	0.44	0.26	--

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	BCPMW-4-3 5/3/2022 BCPMW-4-3	BCPMW-4-3 7/22/2022 BCPMW-4-3	BCPMW-6-1 12/27/2016 BCPMW-6-1	BCPMW-6-1 8/1/2017 BCPMW-6-1	BCPMW-6-1 8/6/2018 BCPMW-6-1	BCPMW-6-1 7/15/2019 BCPMW-6-1	BCPMW-6-1 7/13/2020 BCPMW6-1	BCPMW-6-1 8/2/2021 BCPMW6-1	BCPMW-6-1 8/1/2022 BCPMW-6-1	BCPMW-6-2 12/27/2016 BCPMW-6-2	BCPMW-6-2 8/2/2017 BCPMW-6-2	BCPMW-6-2 8/6/2018 BCPMW-6-2
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	0.21 J	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	3.7 J	4.1 J	3.0 J	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	0.65 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.97 J
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	--	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	0.58 J	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		1.23	0	0	0	3.7	4.1	3	0	0	0	0.21	0.97
Project VOCs⁽⁵⁾		1.23	0	0	0	0	0	0	0	0	0	0.21	0.97
1,4-Dioxane⁽⁶⁾		--	0.27	--	--	< 0.24	< 0.23	< 0.23	< 0.23	0.11 J	--	--	0.092 J

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Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	BCPMW-6-2 7/16/2019 BCPMW-6-2	BCPMW-6-2 7/13/2020 BCPMW6-2	BCPMW-6-2 7/20/2021 BCPMW6-2	BCPMW-6-2 8/1/2022 BCPMW-6-2	BCPMW-7-1 12/28/2016 BCPMW-7-1	BCPMW-7-1 8/1/2017 BCPMW-7-1	BCPMW-7-1 8/3/2018 BCPMW-7-1	BCPMW-7-1 8/8/2018 BCPMW-7-1	BCPMW-7-1 7/10/2019 BCPMW-7-1	BCPMW-7-1 7/9/2020 BCPMW7-1	BCPMW-7-1 7/21/2021 BCPMW7-1	BCPMW-7-1 7/21/2022 BCPMW-7-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	0.92 J	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		0.92	0	0	0	0	0	0	0	0	0	0	0
Project VOCs⁽⁵⁾		0.92	0	0	0	0	0	0	0	0	0	0	0
1,4-Dioxane⁽⁶⁾		0.096 J	0.16 J	0.092 J	0.15 J	--	--	--	< 0.24	< 0.24	< 0.24	< 0.23	< 0.17

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-200-1 1/17/2017 MW-200-1	MW-200-1 8/7/2017 MW-200-1	MW-200-1 7/30/2018 MW-200-1	MW-200-1 7/8/2019 MW-200-1	MW-200-1 7/14/2020 MW-200-1	MW-200-1 7/27/2021 MW-200-1	MW-200-1 11/30/2021 MW 200-1	MW-200-1 5/5/2022 MW-200-1	MW-200-1 7/26/2022 MW-200-1	MW-200-1 9/15/2022 MW-200-1	MW-200-1 9/29/2022 MW-200-1	MW-200-1 10/10/2022 MW-200-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0 J	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0 J	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 2.0	< 2.0 J	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0 J	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--	< 2.0	--	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 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	< 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	< 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	< 1.0	< 1.0 J	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 1.0	< 1.0 J	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		0	0	0	0	0	0	0	0	0	0	0	0
Project VOCs⁽⁵⁾		0	0	0	0	0	0	0	0	0	0	0	0
1,4-Dioxane⁽⁶⁾		--	--	0.40	0.26	0.35	0.13 J	0.11 JB	--	0.098 J	--	--	--

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-200-1 10/27/2022 MW-200-1	MW-200-1 11/16/2022 MW-200-1	MW-200-1 11/29/2022 MW-200-1	MW-200-1 12/15/2022 MW-200-1	MW-200-1 12/29/2022 MW-200-1	MW-201-1 1/18/2017 MW-201-1	MW-201-1 8/8/2017 MW-201-1	MW-201-1 8/1/2018 MW-201-1	MW-201-1 7/8/2019 MW-201-1	MW-201-1 7/14/2020 MW-201-1	MW-201-1 7/30/2021 MW-201-1	MW-201-1 12/1/2021 MW-201-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0 J	< 5.0	< 5.0	< 5.0 J	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10 J	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	--	--	--	--	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 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	< 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	< 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	2.0	1.5	0.87 J	< 1.0	0.60 J	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	--	--	--	--	--	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.6	1.3	0.90 J	0.69 J	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		0	0	0	0	0	3.6	2.8	1.77	0.69	0.6	0	0
Project VOCs⁽⁵⁾		0	0	0	0	0	3.6	2.8	1.77	0.69	0.6	0	0
1,4-Dioxane⁽⁶⁾		--	--	--	--	--	--	--	0.40	0.30	0.47	0.34	0.22 JB

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-201-1 5/6/2022 MW-201-1	MW-201-1 7/29/2022 MW-201-1	MW-201-1 9/16/2022 MW-201-1	MW-201-1 9/30/2022 MW-201-1	MW-201-1 10/11/2022 MW-201-1	MW-201-1 10/28/2022 MW-201-1	MW-201-1 11/17/2022 MW-201-1	MW-201-1 11/30/2022 MW-201-1	MW-201-1 12/16/2022 MW-201-1	MW-201-1 12/30/2022 MW-201-1	MW-202-1 1/19/2017 MW-202-1	MW-202-1 8/9/2017 MW-202-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	0.66 J	0.80 J
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.33 J	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0 J	< 5.0	--	--
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 2.0	< 2.0 J	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	--	< 2.0	< 2.0	< 2.0	--	--	--	--	--	--	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	1.6	1.2	2.0	0.78 J	1.0	1.1	1.8	1.6	1.7	0.45 J	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	--	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	1.3	1.4
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	0.74 J	0.54 J	0.75 J	< 1.0	< 1.0	0.61 J	0.83 J	0.61 J	0.75 J	0.68 J	0.96 J
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		0	2.34	1.74	2.75	0.78	1	1.71	2.63	2.21	2.45	3.42	3.16
Project VOCs⁽⁵⁾		0	2.34	1.74	2.75	0.78	1	1.71	2.63	2.21	2.45	3.42	3.16
1,4-Dioxane⁽⁶⁾		--	0.37	--	--	--	--	--	--	--	--	--	--

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-202-1 7/31/2018 MW-202-1	MW-202-1 7/10/2019 MW-202-1	MW-202-1 7/17/2020 MW-202-1	MW-202-1 7/29/2021 MW-202-1	MW-202-1 12/2/2021 MW-202-1	MW-202-1 5/9/2022 MW-202-1	MW-202-1 7/28/2022 MW-202-1	MW-203-1 1/20/2017 MW-203-1	MW-203-1 8/10/2017 MW-203-1	MW-203-1 8/2/2018 MW-203-1	MW-203-1 7/9/2019 MW-203-1	MW-203-1 7/15/2020 MW-203-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	0.98 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	0.30 J	0.34 J	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	2.0 J	3.3 J	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	0.27 J	0.35 J	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	0.56 J	< 1.0	0.92 J	0.55 J	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.76 J	1.2	< 1.0	1.2	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	0.70 J	< 1.0	< 1.0	< 1.0	< 1.0	0.54 J	0.76 J	3.9	2.9	2.6	2.3	3.2
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		1.8	0	0	0	0	1.1	1.74	8.15	8.64	2.6	3.5	3.2
Project VOCs⁽⁵⁾		1.8	0	0	0	0	1.1	0.76	5.88	4.99	2.6	3.5	3.2
1,4-Dioxane⁽⁶⁾		0.30	0.17 J	0.24	0.26	0.42 B	--	0.53	--	--	0.19 J	0.24	0.27

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-203-1 7/26/2021 MW-203-1	MW-203-1 12/3/2021 MW-203-1	MW-203-1 5/10/2022 MW-203-1	MW-203-1 7/25/2022 MW-203-1	MW-204-1 1/17/2017 MW-204-1	MW-204-1 8/7/2017 MW-204-1	MW-204-1 8/7/2017 REP080717AD1	MW-204-1 7/30/2018 MW-204-1	MW-204-1 7/8/2019 MW-204-1	MW-204-1 7/14/2020 MW-204-1	MW-204-1 7/27/2021 MW-204-1	MW-204-1 11/30/2021 MW-204-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0 J	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	--	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	--	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 2.0 J	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	0.24 J	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	0.61 J	< 1.0	< 1.0	< 1.0	3.4	< 1.0	< 1.0	< 1.0	< 1.0	1.0	3.2	0.62 J
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	--	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	2.6	2.5	1.4	1.4	4.1	2.4	2.5	0.63 J	< 1.0	1.7	3.0	2.2
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		3.21	2.5	1.4	1.4	7.74	2.4	2.5	0.63	0	2.7	6.2	2.82
Project VOCs⁽⁵⁾		3.21	2.5	1.4	1.4	7.5	2.4	2.5	0.63	0	2.7	6.2	2.82
1,4-Dioxane⁽⁶⁾		--	0.22 J	--	0.14 J	--	--	--	0.25 J	0.14 J	< 0.23	< 0.24	< 0.23

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-204-1 11/30/2021 REP113021PQ1	MW-204-1 3/24/2022 MW204-1	MW-204-1 4/7/2022 MW-204-1	MW-204-1 5/5/2022 MW-204-1	MW-204-1 7/26/2022 MW-204-1	MW-204-1 7/26/2022 REP260722PQ	MW-204-1 9/15/2022 MW-204-1	MW-204-1 9/29/2022 MW-204-1	MW-204-1 10/10/2022 MW-204-1	MW-204-1 10/27/2022 MW-204-1	MW-204-1 11/16/2022 MW-204-1	MW-204-1 11/29/2022 MW-204-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J	< 1.0 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10 J	< 10 J	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J	< 2.0 J	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	--	--	--	< 2.0	< 2.0	--	< 2.0	< 2.0	--	--	--
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J	< 1.0 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	0.60 J	< 1.0	0.57 J	0.58 J	< 1.0	< 1.0	< 1.0	0.61 J	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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 J	< 1.0 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	2.1	1.4	1.5	1.2	0.92 J	0.93 J	1.0	1.1	0.68 J	0.55 J	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		2.7	1.4	2.07	1.78	0.92	0.93	1	1.71	0.68	0.55	0	0
Project VOCs⁽⁵⁾		2.7	1.4	2.07	1.78	0.92	0.93	1	1.71	0.68	0.55	0	0
1,4-Dioxane⁽⁶⁾		< 0.24	--	--	--	< 0.24	< 0.24	--	--	--	--	--	--

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Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-204-1 12/15/2022 MW-204-1	MW-204-1 12/29/2022 MW-204-1	MW-205-1 1/18/2017 MW-205-1	MW-205-1 8/8/2017 MW-205-1	MW-205-1 8/1/2018 MW-205-1	MW-205-1 7/8/2019 MW-205-1	MW-205-1 7/14/2020 MW-205-1	MW-205-1 7/30/2021 MW-205-1	MW-205-1 12/1/2021 MW-205-1	MW-205-1 3/24/2022 MW205-1	MW-205-1 4/7/2022 MW-205-1	MW-205-1 5/6/2022 MW-205-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0 J	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10 J	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0 J	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	--	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--	--	--
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	0.64 J	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	0.39 J	0.62 J	0.76 J	< 1.0	< 1.0	< 1.0	0.85 J	4.5	6.9	4.4
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	--	--	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	< 1.0	0.91 J	0.41 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	2.4	1.7
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		0	0	1.94	1.03	0.76	0	0	0	0.85	5.9	9.3	6.1
Project VOCs⁽⁵⁾		0	0	1.3	1.03	0.76	0	0	0	0.85	5.9	9.3	6.1
1,4-Dioxane⁽⁶⁾		--	--	--	--	0.40	0.16 J	0.30	< 0.23	< 0.24	--	--	--

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-205-1 7/29/2022 MW-205-1	MW-205-1 9/16/2022 MW-205-1	MW-205-1 9/30/2022 MW-205-1	MW-205-1 10/11/2022 MW-205-1	MW-205-1 10/28/2022 MW-205-1	MW-205-1 11/17/2022 MW-205-1	MW-205-1 11/30/2022 MW-205-1	MW-205-1 12/16/2022 MW-205-1	MW-205-1 12/30/2022 MW-205-1	MW-206-1 1/19/2017 MW-206-1	MW-206-1 8/9/2017 MW-206-1	MW-206-1 7/31/2018 MW-206-1
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	0.74 J	3.0	0.96 J
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0 J	< 5.0	--	--	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	--	--	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 2.0 J	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	--	--	--	--	--	--	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	4.0	4.1	4.2	5.1	5.4	3.1	2.7	2.6	2.2	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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	0.56 J	2.8	1.4
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	2.0	1.7	1.7	2.1	2.4	1.6	1.4	1.3	0.88 J	< 1.0	0.65 J	0.79 J
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		6	5.8	5.9	7.2	7.8	4.7	4.1	3.9	3.08	2.76	10.21	3.71
Project VOCs⁽⁵⁾		6	5.8	5.9	7.2	7.8	4.7	4.1	3.9	3.08	2.76	10.21	3.71
1,4-Dioxane⁽⁶⁾		< 0.24	--	--	--	--	--	--	--	--	--	--	0.34

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-206-1 7/9/2019 MW-206-1	MW-206-1 7/17/2020 MW-206-1	MW-206-1 7/29/2021 MW-206-1	MW-206-1 12/2/2021 MW-206-1	MW-206-1 5/9/2022 MW-206-1	MW-206-1 7/28/2022 MW-206-1	MW-207A-1R 7/10/2019 MW-207A-1R	MW-207A-1R 7/16/2020 MW-207A-1R	MW-207A-1R 7/28/2021 MW-207A-1R	MW-207A-1R 7/27/2022 MW-207A-1R	MW-207B-1R 7/10/2019 MW-207B-1R	MW-207B-1R 7/16/2020 MW-207B-1R
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	0.62 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	0.58 J	1.7	0.83 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	0.86 J	< 1.0	< 1.0	< 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	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	1.7	1.3	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	< 1.0	< 1.0	--	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	1.3	1.6	1.3	< 1.0	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	0.75 J	0.76 J	0.73 J	0.72 J	0.58 J	< 1.0	< 1.0	< 1.0	< 1.0	0.88 J	0.69 J
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		0	2.63	6.62	4.16	0.72	1.2	0	0	0	0	0.88	0.69
Project VOCs⁽⁵⁾		0	2.63	6.62	4.16	0.72	0.58	0	0	0	0	0.88	0.69
1,4-Dioxane⁽⁶⁾		0.21 J	0.59	0.32	0.40 B	--	0.38	0.45	0.45	0.30	0.52	0.68	0.87

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-207B-1R 7/28/2021 MW-207B-1R	MW-207B-1R 7/27/2022 MW-207B-1R	MW-208-1 1/20/2017 MW-208-1	MW-208-1 8/10/2017 MW-208-1	MW-208-1 8/2/2018 MW-208-1	MW-208-1 8/2/2018 REP080218DC1	MW-208-1 7/9/2019 MW-208-1	MW-208-1 7/9/2019 REP070919DC1	MW-208-1 7/15/2020 MW-208-1	MW-208-1 7/15/2020 REP071520SV1	MW-208-1 7/26/2021 MW-208-1	MW-208-1 7/26/2021 REP072621PQ
	NYSDEC SCGs												
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	2.1	1.1	0.61 J	< 1.0	0.69 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	0.70 J	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	0.35 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 5.0	--	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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	< 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	< 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	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	2.8	1.4	0.75 J	0.71 J	0.53 J	0.62 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	597	268	129	135	176 J	166	44.6	44.4	24.6	25.8
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	< 1.0	0.43 J	< 1.0	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	0.60 J	1.6	< 1.0	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	0.75 J	0.56 J	10.9	12.8	11.7	11.4	9.1	9.4	4.5	4.5	2.4	2.6
Vinyl chloride	2	< 1.0	< 1.0	3.3	1.8	1.1	0.98 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		0.75	0.56	618.18	286.7	143.16	148.09	186.32	176.02	49.1	48.9	27	28.4
Project VOCs⁽⁵⁾		0.75	0.56	614.6	285.3	142.41	147.38	185.79	175.4	49.1	48.9	27	28.4
1,4-Dioxane⁽⁶⁾		0.62	0.97	--	--	0.51	0.35	0.38	0.40	0.40	0.41	--	--

See Notes and Abbreviations on Last Page

Table 12
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) (All Constituent Concentrations in µg/L)	Sample Location: Sample Date: Sample ID:	MW-208-1 7/25/2022 MW-208-1	PZ-1A 5/2/2022 PZ-01A	PZ-1A 7/18/2022 PZ-1A	PZ-3 5/3/2022 PZ-03	PZ-3 7/19/2022 PZ-3	PZ-4 5/3/2022 PZ-04	PZ-4 7/19/2022 PZ-4
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	0.97 J
1,1,1,2-Tetrachloroethane	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 100	< 50	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	0.63 J
1,1-Dichloroethane	5	< 1.0	13.1 J	6.0 J	< 1.0	< 1.0	1.2	3.4
1,1-Dichloroethene	5	< 1.0	53.5	15.6	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Butadiene	NE	< 5.0	< 100	< 50	< 5.0	< 5.0	< 5.0	< 5.0
1-Chloro-1,1-difluoroethane	NE	< 5.0	< 100	< 50	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	50	< 10	< 200	< 100	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 100	< 50	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 200	< 100	8.6 J	< 10	< 10	< 10
Benzene	1	< 0.50	40.1	11.4	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 40	< 20	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 40	< 20	< 2.0	< 2.0	< 2.0	1.3 J
Carbon Tetrachloride	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
CFC-11	5	< 2.0	--	< 20	--	< 2.0	--	< 2.0
CFC-12	5	< 2.0	< 40	< 20	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 100	< 50	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	0.66 J
Chloromethane	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	14.2	9700 D	4390	< 1.0	2.3	93.5	227
cis-1,3-Dichloropropene	0.4	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 40	< 20	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	969	273	< 1.0	< 1.0	< 1.0	< 1.0
m&p-Xylenes	5	< 1.0	1060	48.8	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 100	< 50	< 5.0	< 5.0	< 5.0	< 5.0
Methyl-tert-butylether	10	< 1.0	--	< 10	--	< 1.0	--	< 1.0
o-Xylene	5	< 1.0	1550	308	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	2550	1150	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	74.4	20.4	< 1.0	< 1.0	0.73 J	0.77 J
trans-1,3-Dichloropropene	0.4	< 1.0	< 20	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	1.6	3420	224	< 1.0	2.7	36.8	86.3
Vinyl chloride	2	< 1.0	475	53.4	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs⁽⁴⁾		15.8	19905.1	6500.6	8.6	5	132.23	321.03
Project VOCs⁽⁵⁾		15.8	18936.1	6227.6	0	5	132.23	318.44
1,4-Dioxane⁽⁶⁾		0.29	--	--	--	--	--	--

See Notes and Abbreviations on Last Page

Table 12
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

Notes and Abbreviations

1. Historical 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 USEPA Method 8260C.
4. "Total VOCs" represents the sum of individual concentrations of the VOCs detected. TVOCs were rounded to two significant figures.
5. "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.
6. 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).

Bolded outline indicates an exceedance of an SCG.

- < 5 Compound not detected above its laboratory quantification limit.
- 2.1** Bold value indicates a detection.
- D Constituent identified from secondary dilution
- J Result is estimated
- ug/L Micrograms per liter
- NE Not Established
- Not Analyzed
- 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
- OU Operable Unit



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	BCPMW-4-1	BCPMW-4-1	BCPMW-4-1	BCPMW-4-1	BCPMW-4-1	BCPMW-4-2	BCPMW-4-2
	Sample Date:	7/31/2017	7/24/2018	7/11/2019	7/20/2020	7/20/2021	12/22/2016	7/31/2017
	Sample ID:	BCPMW-4-1	BCPMW-4-1	BCPMW-4-1	BCPMW-4-1	BCPMW-4-1	REP122216PP1	BCPMW-4-2
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	17.2	27.6	44.4	< 10	< 10
Chromium (Total)	50	< 10	< 10	19.4	30.3	45.6	20.5	< 10



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	BCPMW-4-2	BCPMW-4-2	BCPMW-4-2	BCPMW-4-2	BCPMW-4-3	BCPMW-4-3	BCPMW-4-3
	Sample Date:	7/24/2018	7/11/2019	7/20/2020	8/2/2021	8/3/2017	8/8/2018	7/11/2019
	Sample ID:	BCPMW-4-2	BCPMW-4-2	BCPMW-4-2	BCPMW-4-2	BCPMW-4-3	BCPMW-4-3	BCPMW-4-3
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	BCPMW-4-3	BCPMW-4-3	BCPMW-4-3	BCPMW-6-1	BCPMW-6-1	BCPMW-6-1	BCPMW-6-1
	Sample Date:	7/21/2020	8/2/2021	7/22/2022	8/1/2017	8/6/2018	7/15/2019	7/13/2020
	Sample ID:	BCPMW-4-3	BCPMW-4-3	BCPMW-4-3	BCPMW-6-1	BCPMW-6-1	BCPMW-6-1	BCPMW-6-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10

Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	BCPMW-6-1	BCPMW-6-1	BCPMW-6-2	BCPMW-6-2	BCPMW-6-2	BCPMW-6-2	BCPMW-6-2
	Sample Date:	8/2/2021	8/1/2022	8/2/2017	8/6/2018	7/13/2020	7/20/2021	8/1/2022
	Sample ID:	BCPMW-6-1	BCPMW-6-1	BCPMW-6-2	BCPMW-6-2	BCPMW-6-2	BCPMW-6-2	BCPMW-6-2
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	3.3	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	< 10	< 10	87.7	< 10	19.8	< 10	< 10



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	BCPMW-7-1	BCPMW-7-1	BCPMW-7-1	BCPMW-7-1	BCPMW-7-1	BCPMW-7-1	BCPMW-7-1
	Sample Date: Sample ID:	8/1/2017 BCPMW-7-1	8/3/2018 BCPMW-7-1	8/8/2018 BCPMW-7-1	7/10/2019 BCPMW-7-1	7/9/2020 BCPMW-7-1	7/21/2021 BCPMW-7-1	7/21/2022 BCPMW-7-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	< 10	< 10	< 10	< 10	11.6	11.1	< 10



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-200-1	MW-200-1	MW-200-1	MW-200-1	MW-200-1	MW-200-1	MW-201-1
	Sample Date:	8/7/2017	7/30/2018	7/8/2019	7/14/2020	7/27/2021	7/26/2022	8/8/2017
	Sample ID:	MW-200-1	MW-200-1	MW-200-1	MW-200-1	MW-200-1	MW-200-1	MW-201-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	11.1	12.4	11.5	15.4	14.3	< 10	11.7



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-201-1	MW-201-1	MW-201-1	MW-201-1	MW-201-1	MW-202-1	MW-202-1
	Sample Date:	8/1/2018	7/8/2019	7/14/2020	7/30/2021	7/29/2022	8/9/2017	7/31/2018
	Sample ID:	MW-201-1	MW-201-1	MW-201-1	MW-201-1	MW-201-1	MW-202-1	MW-202-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	14.4	< 10
Chromium (Total)	50	< 10	< 10	18.0	< 10	< 10	73.4	21.4



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-202-1	MW-202-1	MW-202-1	MW-202-1	MW-203-1	MW-203-1	MW-203-1
	Sample Date:	7/10/2019	7/17/2020	7/29/2021	7/28/2022	8/10/2017	8/2/2018	7/9/2019
	Sample ID:	MW-202-1	MW-202-1	MW-202-1	MW-202-1	MW-203-1	MW-203-1	MW-203-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	13.2	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	26.5	71.4	10.8	< 10	138	22.7	< 10



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-203-1	MW-203-1	MW-203-1	MW-204-1	MW-204-1	MW-204-1	MW-204-1
	Sample Date:	7/15/2020	7/26/2021	7/25/2022	8/7/2017	8/7/2017	7/30/2018	7/8/2019
	Sample ID:	MW-203-1	MW-203-1	MW-203-1	MW-204-1	REP080717AD1	MW-204-1	MW-204-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	87.0	85.3	89.1	< 10
Chromium (Total)	50	13.1	< 10	10.0	175	171	239	30.1



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-204-1	MW-204-1	MW-204-1	MW-204-1	MW-205-1	MW-205-1	MW-205-1
	Sample Date:	7/14/2020	7/27/2021	7/26/2022	7/26/2022	8/8/2017	8/1/2018	7/8/2019
	Sample ID:	MW-204-1	MW-204-1	MW-204-1	REP260722PQ	MW-205-1	MW-205-1	MW-205-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	23.7	22.1
Chromium (Total)	50	18.9	22.3	< 10	< 10	134	88.7	70.2



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-205-1	MW-205-1	MW-205-1	MW-206-1	MW-206-1	MW-206-1	MW-206-1
	Sample Date:	7/14/2020	7/30/2021	7/29/2022	8/9/2017	7/31/2018	7/9/2019	7/17/2020
	Sample ID:	MW-205-1	MW-205-1	MW-205-1	MW-206-1	MW-206-1	MW-206-1	MW-206-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	80.0	22.8	< 10	10.7	< 10	< 10	< 10
Chromium (Total)	50	242	39.7	16.5	82.0	13.6	10.7	24.7



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-206-1	MW-206-1	MW-207A-1R	MW-207A-1R	MW-207A-1R	MW-207A-1R	MW-207B-1R
	Sample Date:	7/29/2021	7/28/2022	7/10/2019	7/16/2020	7/28/2021	7/27/2022	7/10/2019
	Sample ID:	MW-206-1	MW-206-1	MW-207A-1R	MW-207A-1R	MW-207A-1R	MW-207A-1R	MW-207B-1R
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	20.2	23.4	< 10	< 10	< 10	< 10	86.6



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-207B-1R	MW-207B-1R	MW-207B-1R	MW-208-1	MW-208-1	MW-208-1	MW-208-1
	Sample Date:	7/16/2020	7/28/2021	7/27/2022	8/10/2017	8/2/2018	8/2/2018	7/9/2019
	Sample ID:	MW-207B-1R	MW-207B-1R	MW-207B-1R	MW-208-1	MW-208-1	REP080218DC1	MW-208-1
	NYSDEC SCGs							
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	12.8	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	215	98.7	< 10	< 10	< 10	< 10	< 10



Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Constituents (All Constituent Concentrations in µg/L)	Sample Location:	MW-208-1	MW-208-1	MW-208-1	MW-208-1	MW-208-1	MW-208-1
	Sample Date:	7/9/2019	7/15/2020	7/15/2020	7/26/2021	7/26/2021	7/25/2022
	Sample ID:	REP070919DC1	MW-208-1	REP071520SV1	MW-208-1	REP072621PQ	MW-208-1
	NYSDEC SCGs						
Cadmium (Dissolved)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cadmium (Total)	5	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chromium (Dissolved)	50	< 10	< 10	< 10	< 10	< 10	< 10
Chromium (Total)	50	< 10	< 10	< 10	< 10	< 10	< 10



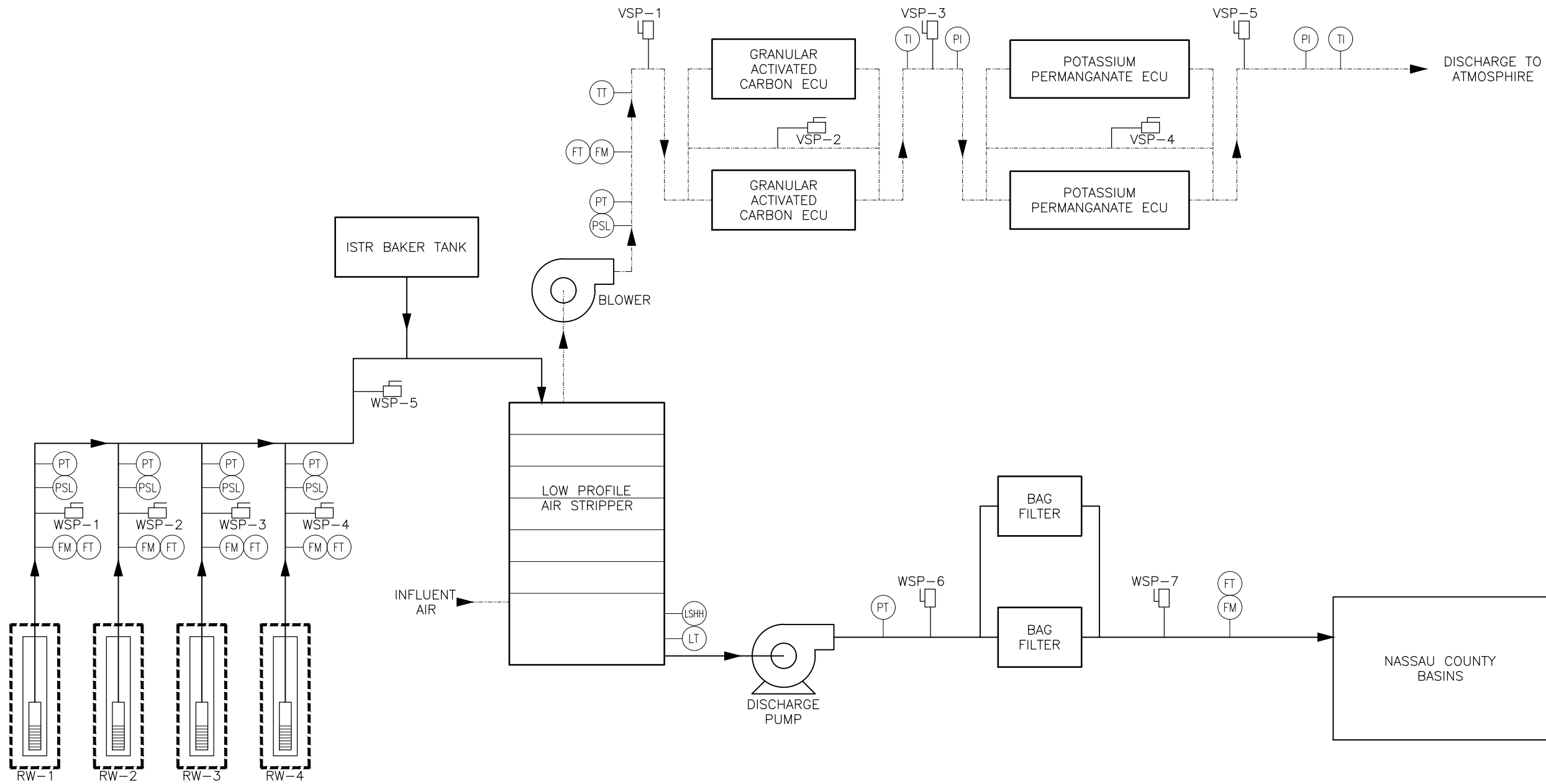
Table 13
Concentrations of Metals in Groundwater Samples Collected
from Monitoring Wells, Bethpage Park Groundwater Containment System,
OU3 (Former Settling Ponds),
Bethpage, New York

Notes and Abbreviations:

- 1. Historical 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 metals using USEPA Method 6010.

ug/L	Micrograms per liter
	Indicates an exceedance of an SCG
12.5	Bold indicates a detection
< 3.0	Compound not detected above its laboratory quantification limit
USEPA	United State Environmental Protection Agency
NYSDEC	New York State Department of Environmental Conservation
SCGs	Standards, Criteria, and Guidance values
OU	Operable Unit

Figures

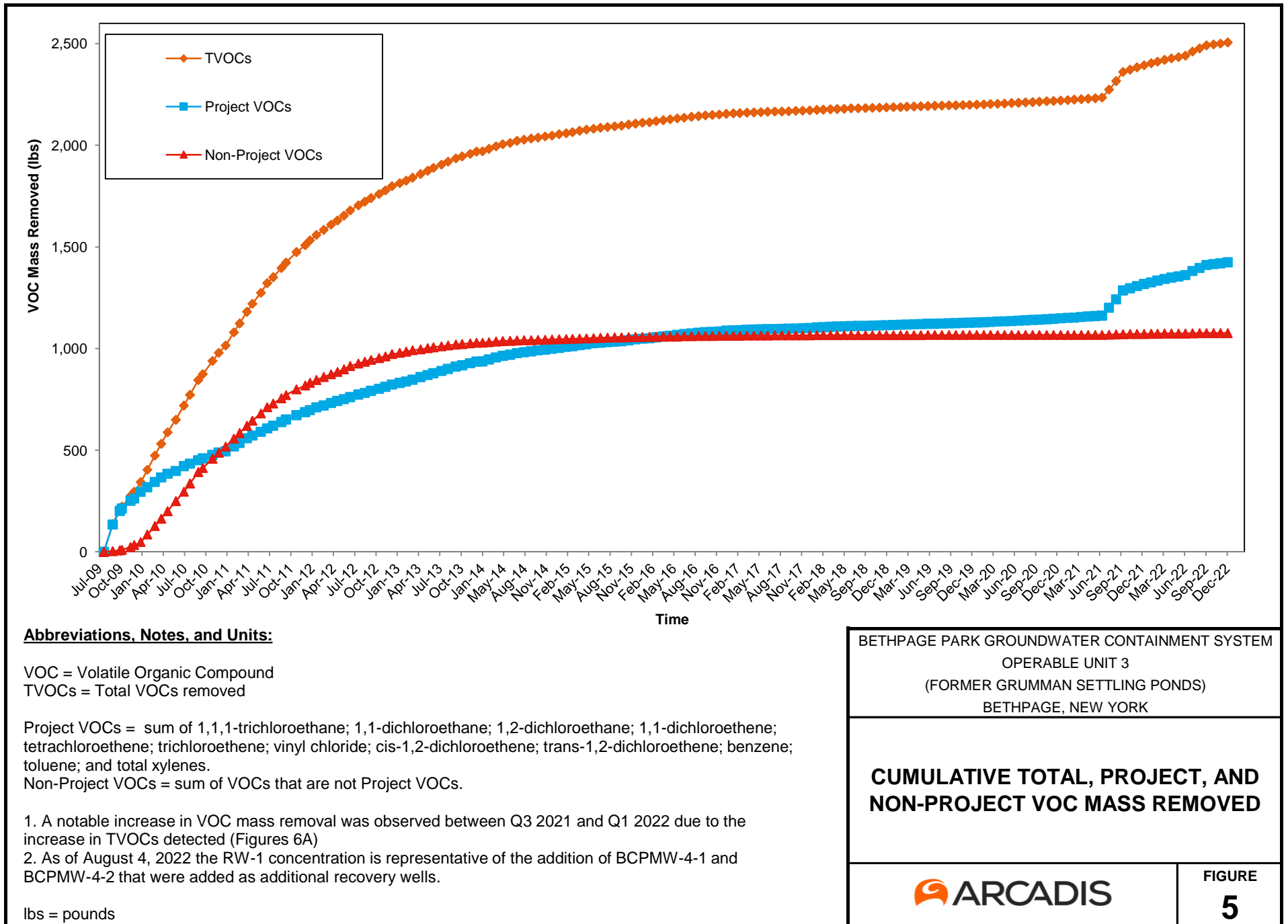


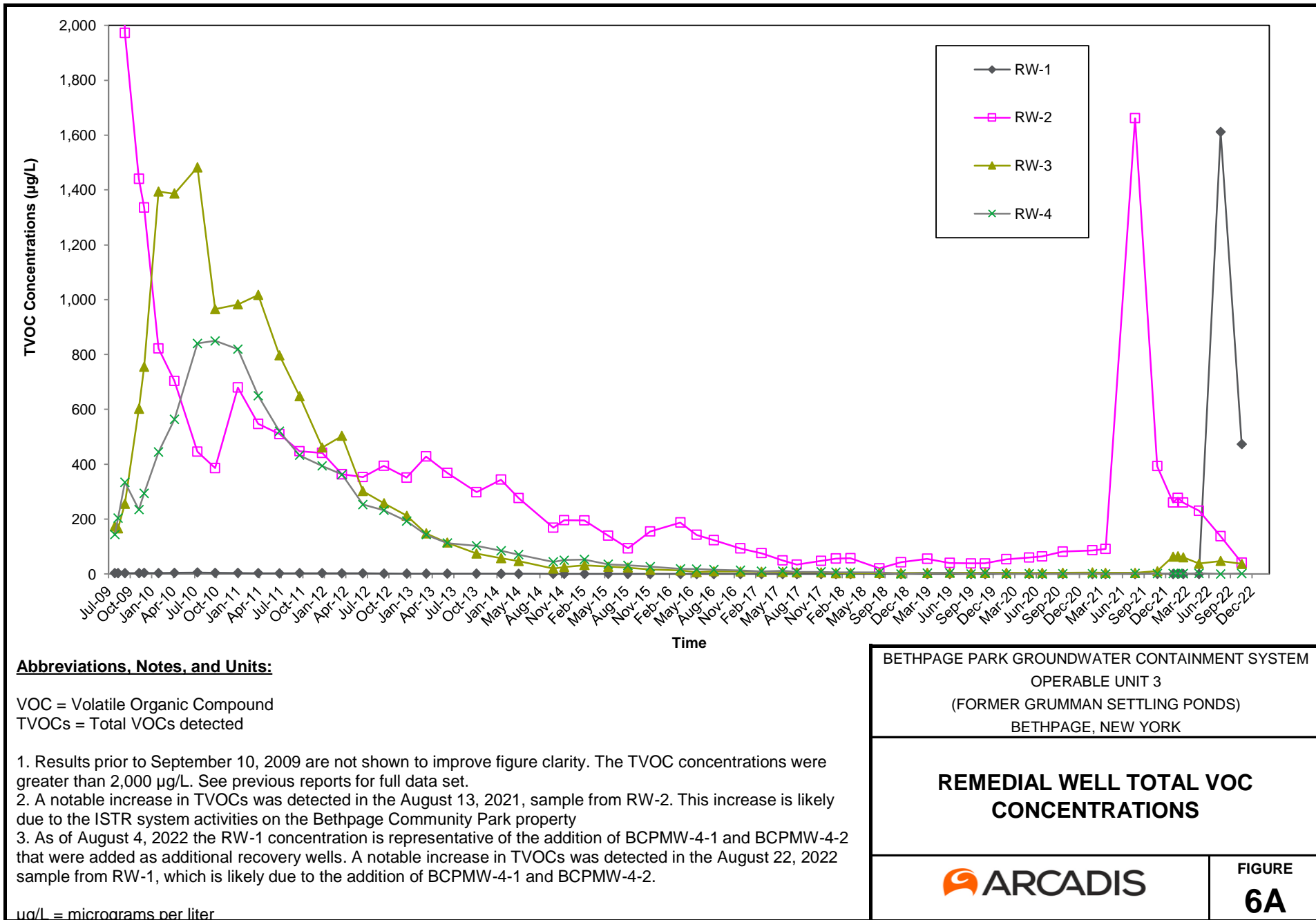
- LEGEND:**
- PROCESS WATER
 - - - PROCESS AIR
 - ⊗ INSTRUMENT
 - SAMPLE PORT
 - ▶ FLOW DIRECTION
 - FM FLOW METER
 - FT FLOW RATE TRANSMITTER
 - PSL PRESSURE VACUUM LOW
 - PT PRESSURE TRANSMITTER
 - PI PRESSURE INDICATOR
 - LSHH LEVEL SWITCH HIGH HIGH
 - LT LEVEL TRANSMITTER
 - TT TEMPERATURE TRANSMITTER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

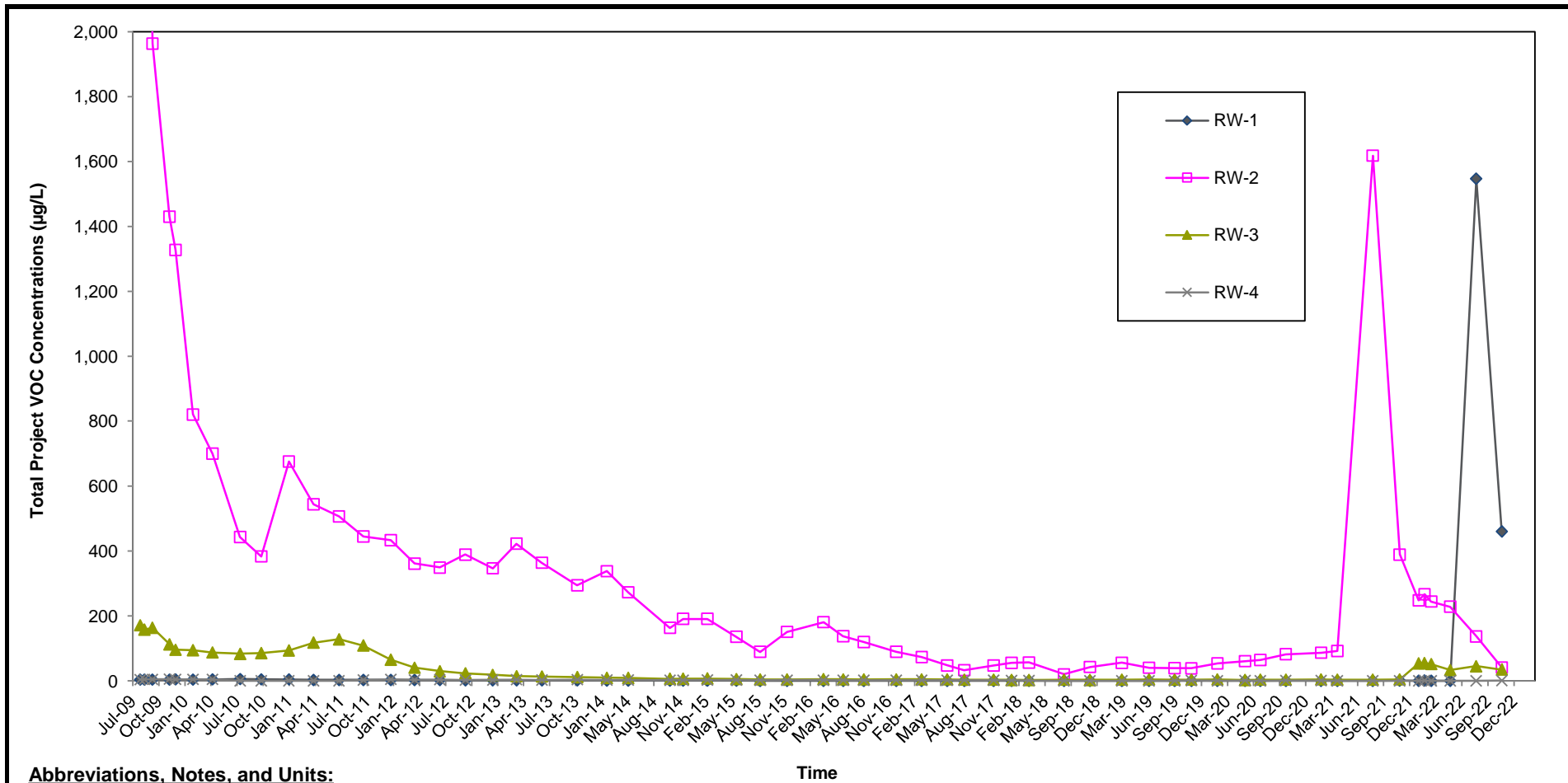
BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM
 OPERABLE UNIT 3
 (FORMER GRUMMAN SETTLING PONDS)
 BETHPAGE, NEW YORK

**GROUNDWATER TREATMENT SYSTEM
 PROCESS SCHEMATIC,
 PROCESS FLOW DIAGRAM,
 AND MONITORING LOCATIONS**

ARCADIS | FIGURE 3







Abbreviations, Notes, and Units:

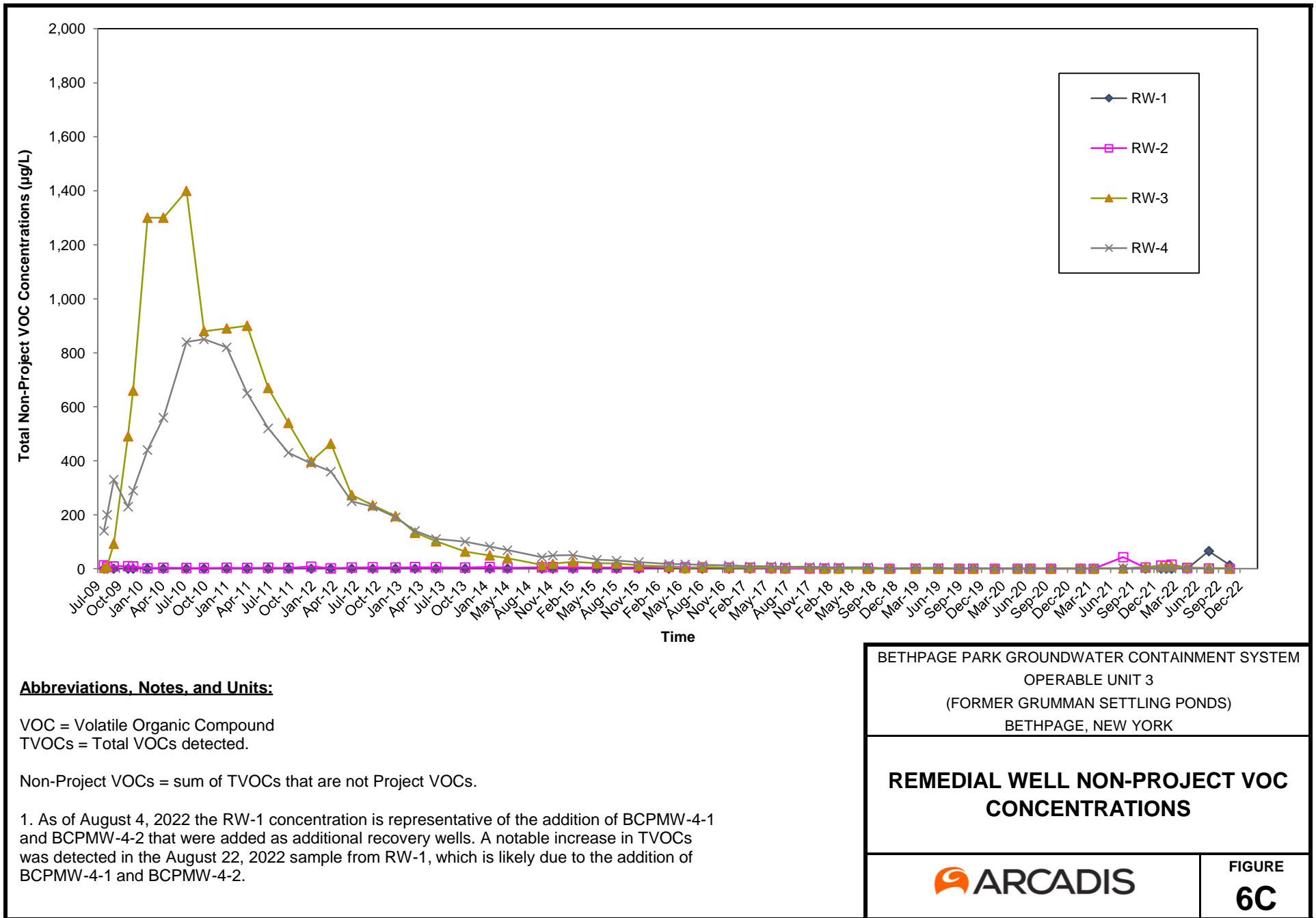
VOC = Volatile Organic Compound
 TVOCs = Total VOCs detected

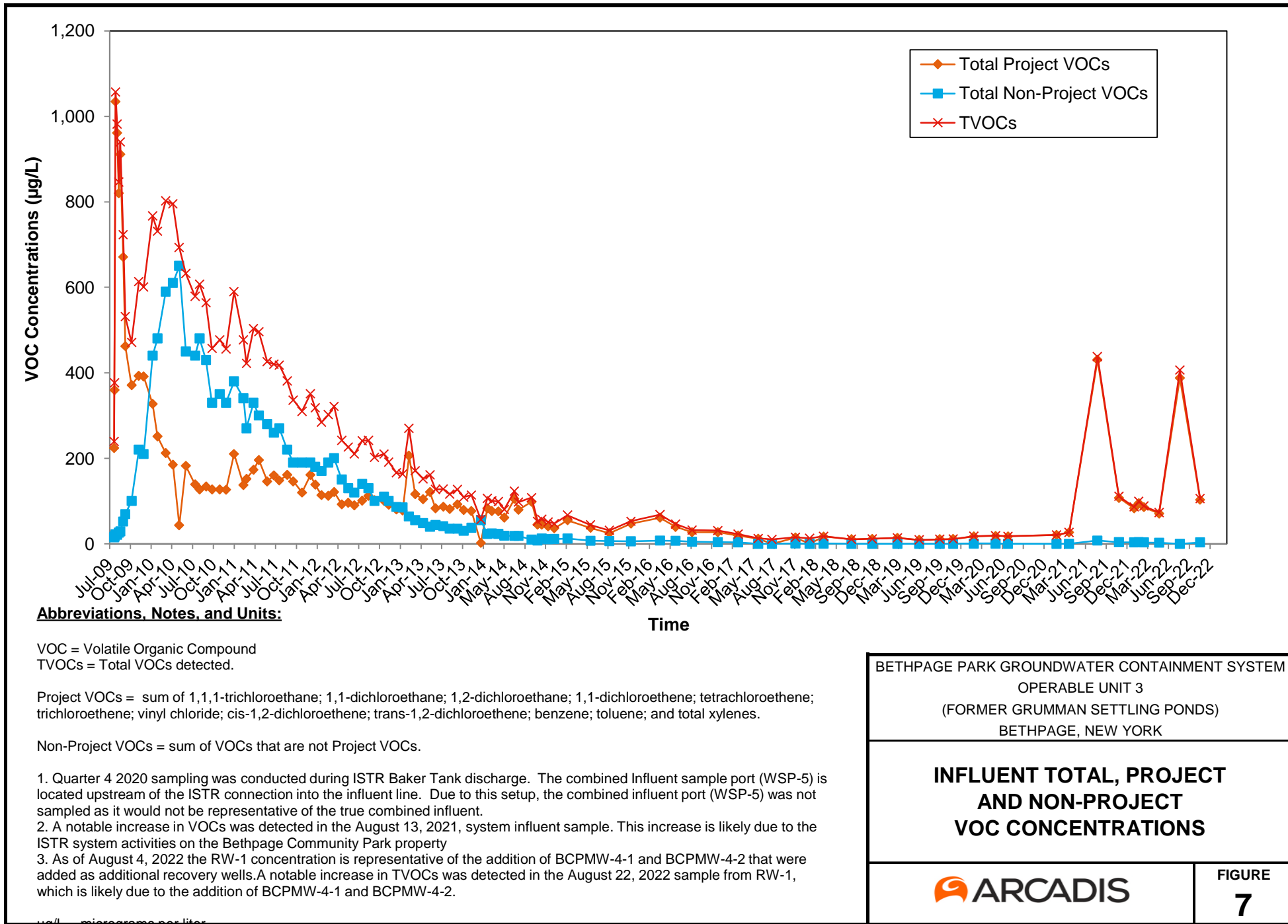
Project VOCs = sum of 1,1,1-trichloroethane; 1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichloroethene; tetrachloroethene; trichloroethene; vinyl chloride; cis-1,2-dichloroethene; trans-1,2-dichloroethene; benzene; toluene; and total xylenes.

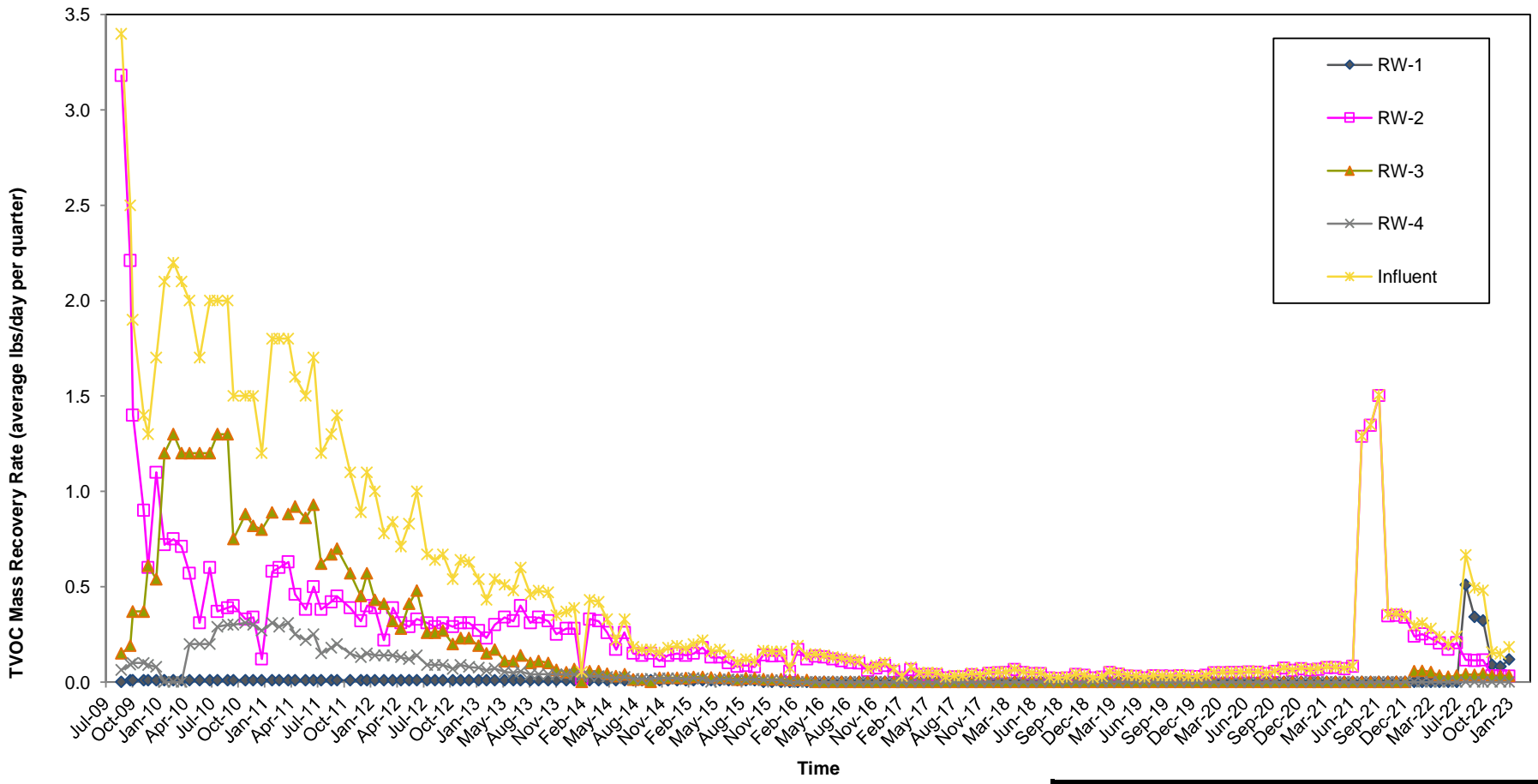
1. Results prior to September 10, 2009 are not shown to improve figure clarity. Total Project VOC concentrations are greater than 2,000 µg/L. See previous reports for full data set.
2. A notable increase in Project VOCs was detected in the August 13, 2021, sample from RW-2. This increase is likely due to the ISTR system activities on the Bethpage Community Park property
3. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells. A notable increase in TVOCs was detected in the August 22, 2022 sample from RW-1, which is likely due to the addition of BCPMW-4-1 and BCPMW-4-2.

µg/L = micrograms per liter

BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM OPERABLE UNIT 3 (FORMER GRUMMAN SETTLING PONDS) BETHPAGE, NEW YORK	
REMEDIAL WELL PROJECT VOC CONCENTRATIONS	
	FIGURE 6B






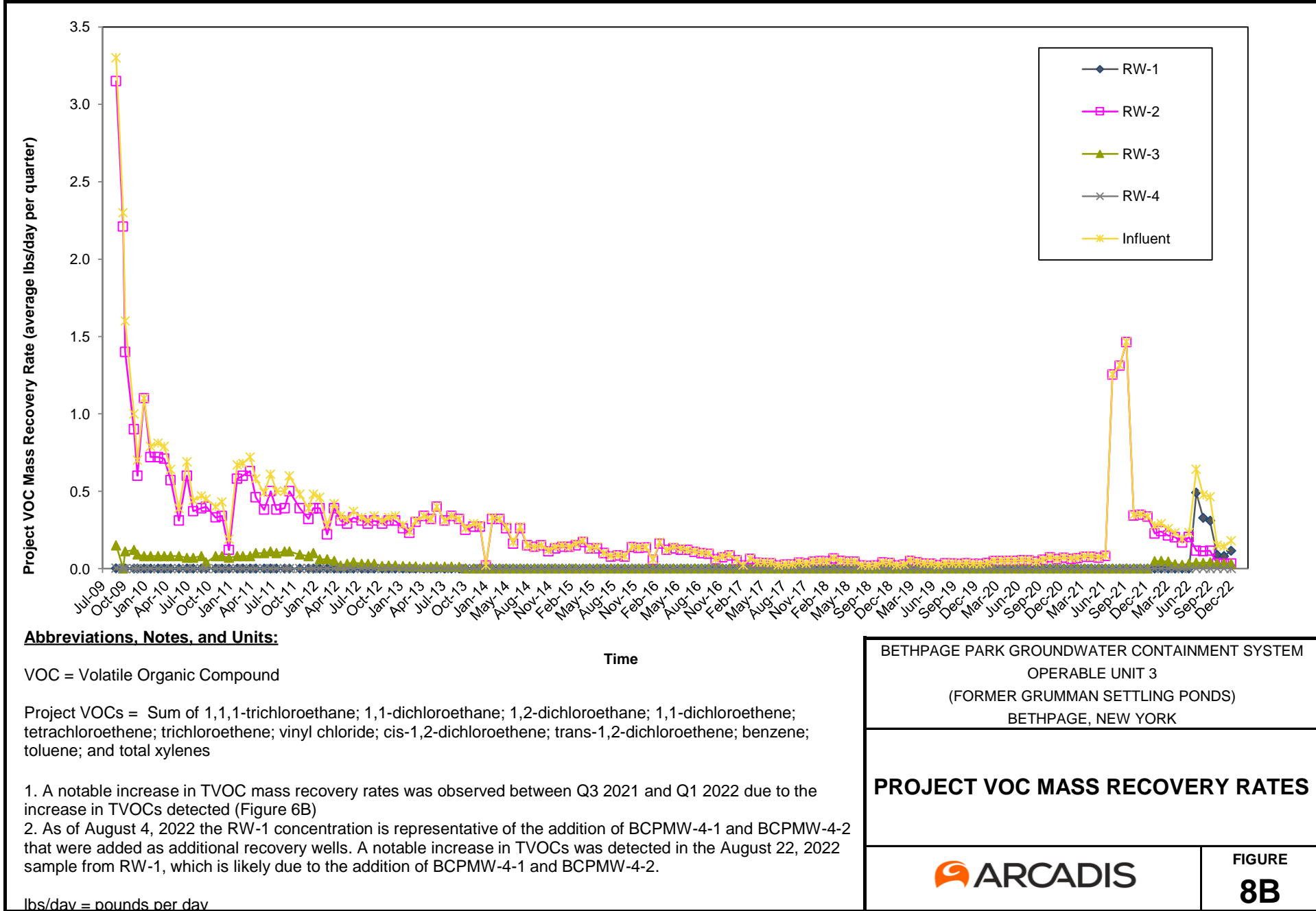


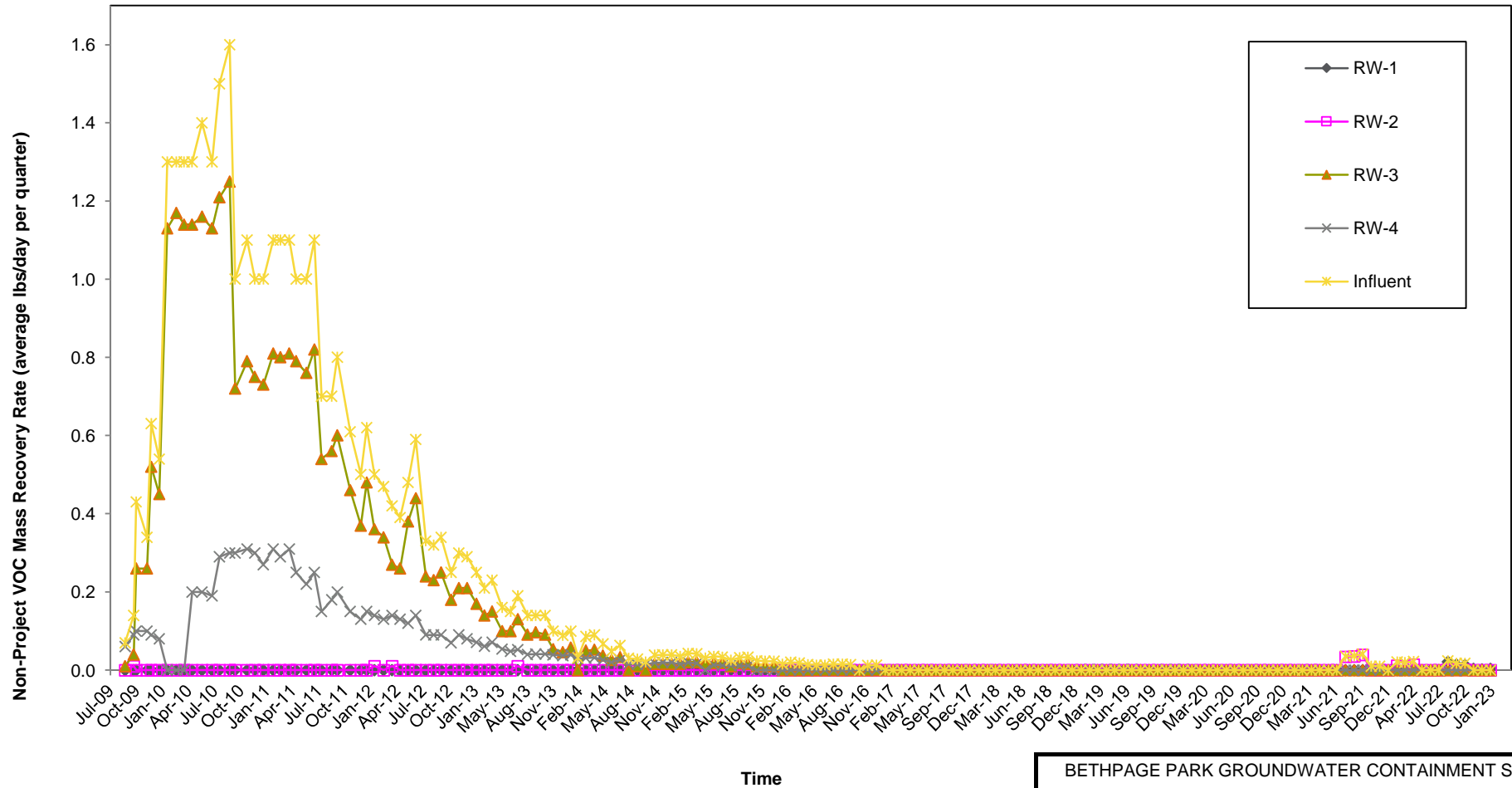
Abbreviation, Notes, and Units:

VOC = Volatile Organic Compound
 TVOCs = Total VOCs

1. A notable increase in TVOC mass recovery rates was observed between Q3 2021 and Q1 2022 due to the increase in TVOCs detected (Figure 6A)
2. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells. A notable increase in TVOCs was detected in the August 22, 2022 sample from RW-1, which is likely due to the addition of BCPMW-4-1 and BCPMW-4-2.

BETHPAGE PARK GROUNDWATER CONTAINMENT SYSTEM OPERABLE UNIT 3 (FORMER GRUMMAN SETTLING PONDS) BETHPAGE, NEW YORK	
<h3>TOTAL VOC MASS RECOVERY RATES</h3>	
	FIGURE 8A






Abbreviations, Notes, and Units:

VOC = Volatile Organic Compound

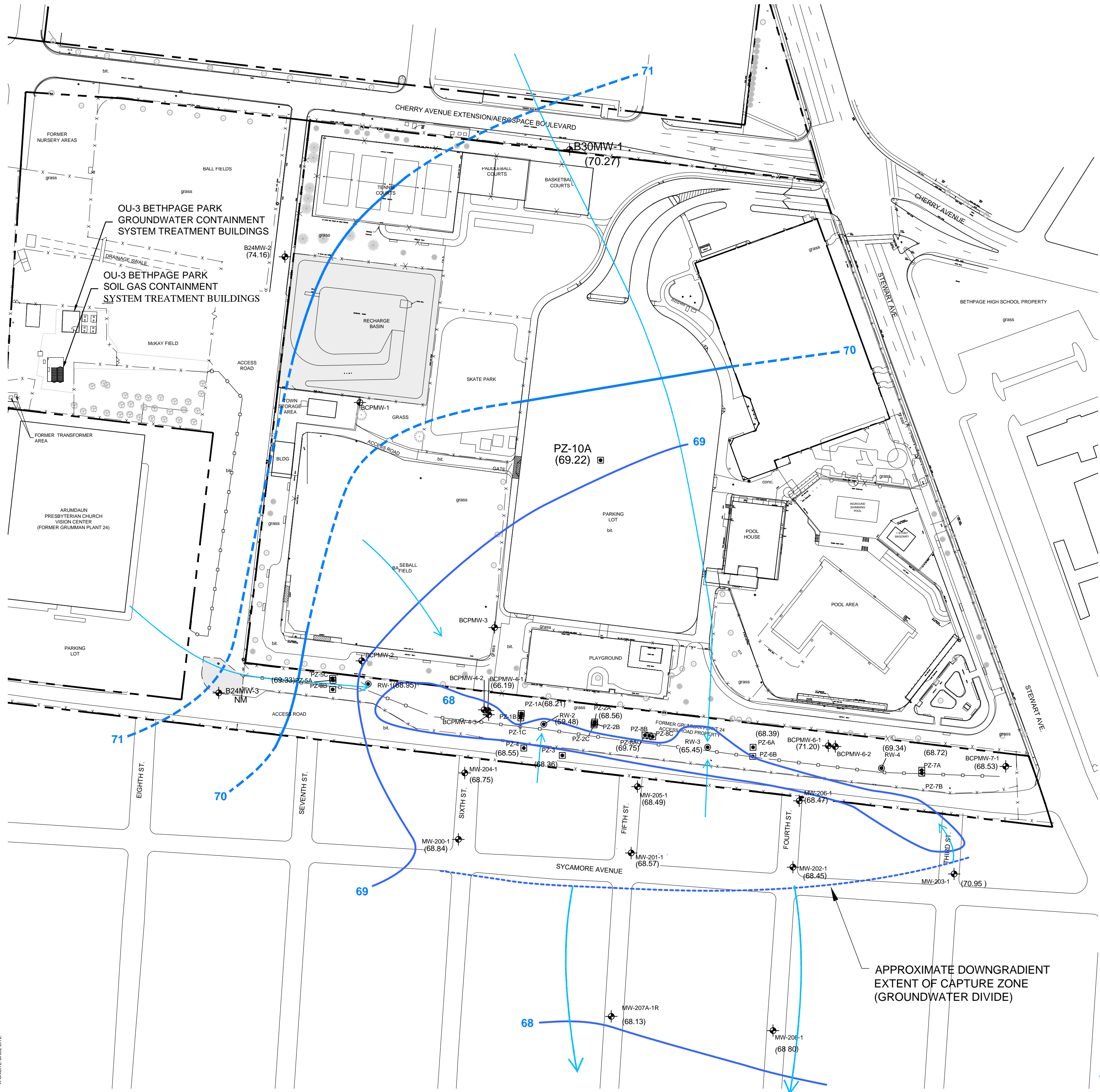
Non-Project VOCs = sum of VOCs that are not Project VOCs.

1. As of August 4, 2022 the RW-1 concentration is representative of the addition of BCPMW-4-1 and BCPMW-4-2 that were added as additional recovery wells.

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

CITY OF SYRACUSE, DIVISION OF ENVIRONMENTAL SERVICES, 1100 N. GENESEE ST., SYRACUSE, NY 13210
 PROJECT: OPERABLE UNIT 3 ONCT SYSTEM BETHPAGE, NY
 DRAWING: GROUNDWATER MONITORING NETWORK AND CONFIGURATION OF THE SHALLOW POTENTIOMETRIC SURFACE AND GROUNDWATER FLOW DIRECTIONS
 DATE: 11/15/2023
 SCALE: AS SHOWN
 PROJECT NUMBER: 2023-001
 DRAWING NUMBER: 2023-001-01
 DESIGNER: ARCADIS
 CHECKER: ARCADIS
 APPROVED: ARCADIS
 PLOTTED: 3/17/2023 12:32 PM BY: NANCELL

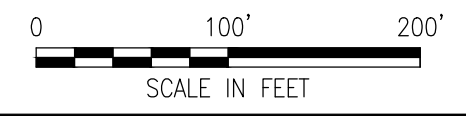


EXPLANATION:

- — — — — NORTHROP GRUMMAN PROPERTY LINE
- x - x - FENCE
- BASIN
- bit. BITUMINOUS PAVEMENT
- MW-200-1 ◉ MONITORING WELL
- RW-2 ◉ REMEDIAL WELL
- PZ-2C ◉ PIEZOMETER
- (71.90) WATER-LEVEL ELEVATION (NAVD 88)
- 7 ——— GROUNDWATER ELEVATION CONTOUR IN FEET RELATIVE TO NAVD 88 (DASHED WHERE LESS CONTROL AVAILABLE)
- 2 ——— GROUNDWATER ELEVATION CONTOUR IN FEET RELATIVE TO NAVD 88 (DASHED WHERE LESS CONTROL AVAILABLE)
- DIRECTION OF THE HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- - - - - GROUNDWATER DIVIDE

NOTES:

1. MONITORING WELLS, REMEDIAL WELLS, AND PIEZOMETERS SURVEYED TO NORTH AMERICAN HORIZONTAL DATUM (NAD) 83.
2. WATER LEVEL ELEVATIONS CALCULATED FROM DATA COLLECTED ON SEPTEMBER 6, 2022.
3. REFER TO TABLE 7 FOR PUMPING RATES OF REMEDIAL WELLS.



OPERABLE UNIT 3
ONCT SYSTEM
BETHPAGE, NEW YORK

GROUNDWATER MONITORING NETWORK AND CONFIGURATION OF THE SHALLOW POTENTIOMETRIC SURFACE AND GROUNDWATER FLOW DIRECTIONS
THIRD QUARTER 2022

Appendix A

Well Construction Information and Environmental Effectiveness Monitoring Program

Appendix A
Well Construction Information and Environmental Effectiveness Monitoring Program
Bethpage Park Groundwater Containment System
Operable unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

Well ID	Well Diameter (inches)	Depth to Screen		Screen Length (ft)	Well Depth (ft)	Well Materials	Water Levels ⁽³⁾	MONITORING ACTIVITY			
		Top (ft bls)	Bottom (ft bls)					WATER QUALITY ⁽⁴⁾			
								VOC	SVOC	Cd/Cr	Fe/Mn
Monitoring Wells											
BCPMW-1	2	50	65	15	65	Sch. 40 PVC	Quarterly	Baseline	--	Baseline	--
BCPMW-2	2	60	75	15	75	Sch. 40 PVC	Quarterly	Baseline	--	Baseline	Baseline
BCPMW-3	2	59	74	15	74	Sch. 40 PVC	Quarterly	Baseline	--	Baseline	Baseline
BCPMW-4-1	4	45	65	20	70	Sch. 40 PVC	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	Baseline
BCPMW-4-2	4	68.5	83.5	15	88.5	Sch. 40 PVC	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	Baseline
BCPMW-4-3	4	115	125	10	130	Sch. 40 PVC	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	Baseline
BCPMW-5-1	4	50	65	15	70	Sch. 80 PVC/ SS	Quarterly	Baseline	--	Baseline	Baseline
BCPMW-6-1	4	88.5	98.5	10	103.5	Sch. 40 PVC	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	--
BCPMW-6-2	4	133	143	10	148	Sch. 40 PVC	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	--
BCPMW-7-1	4	90	100	10	105	Sch. 40 PVC	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	--
B24MW-2	2	54	74	20	74	PVC	Quarterly	Baseline/Annual	Annual	Baseline	--
B24MW-3	2	55	70	15	70	PVC	Quarterly	Baseline/Annual	Annual	Baseline	--
B30MW-1	2	57	72	15	72	PVC	Quarterly	Baseline/Annual	Annual	Baseline	--
MW-200-1	4	85	95	10	100	Sch. 40 PVC/ SS	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	--
MW-201-1	4	70	80	10	85	Sch. 40 PVC/ SS	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	--
MW-202-1	4	125	135	10	140	Sch. 40 PVC/ SS	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	--
MW-203-1	4	103	113	10	118	Sch. 40 PVC/ SS	Quarterly	Baseline/Semiannual ⁽⁵⁾	Semiannual	Baseline/Annual	--
MW-204-1	4	80	90	10	95	Sch. 40 PVC/ SS	Quarterly	Annual	Annual	--	--
MW-205-1 ⁽⁶⁾	4	65	75	10	80	Sch. 40 PVC/ SS	Quarterly	Annual	Annual	--	--
MW-206-1 ⁽⁶⁾	4	120	130	10	135	Sch. 40 PVC/ SS	Quarterly	Annual	Annual	--	--
MW-207A-1R ⁽⁷⁾	4	120	130	10	135	Sch. 40 PVC/ SS	Quarterly	Annual	Annual	--	--
MW-207B-1R ⁽⁷⁾	4	210	220	10	225	Sch. 40 PVC/ SS	Quarterly	Annual	Annual	--	--
MW-208-1 ⁽⁶⁾	4	80	90	10	92	Sch. 40 PVC/ SS	Quarterly	Annual	Annual	--	--
Remedial Wells ⁽⁴⁾											
RW-01	8	108	128	20	134	Sch. 80 PVC/SS	Quarterly	Baseline/Quarterly	Quarterly	Baseline/Annual	--
RW-02	6	84	104	20	104	Steel/SS	Quarterly	Baseline/Quarterly	Quarterly	Baseline/Annual	--
RW-03	8	84	104	20	107	Sch. 80 PVC/SS	Quarterly	Baseline/Quarterly	Quarterly	Baseline/Annual	--
RW-04	8	110	130	20	133	Sch. 80 PVC/SS	Quarterly	Baseline/Quarterly	Quarterly	Baseline/Annual	--

Notes and Abbreviations on Last Page

Appendix A
 Well Construction Information and Environmental Effectiveness Monitoring Program
 Bethpage Park Groundwater Containment System
 Operable unit 3 (Former Grumman Settling Ponds)
 Bethpage, New York

Well ID	Well Diameter (inches)	Depth to Screen		Screen Length (ft)	Well Depth (ft)	Well Materials	Water Levels ⁽³⁾	MONITORING ACTIVITY			
		Top (ft bls)	Bottom (ft bls)					WATER QUALITY ⁽⁴⁾			
								VOC	SVOC	Cd/Cr	Fe/Mn
Piezometers											
PZ-01a	2	60	65	5	68	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-01b	1	80	85	5	88	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-01c	1	130	135	5	138	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-02a	2	60	65	5	68	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-02b	1	80	85	5	85	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-02c	1	130	135	5	138	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-03	1	80	85	5	88	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-04	1	80	85	5	88	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-05a	2	65	70	5	74	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-05b	1	110	115	5	117	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-05c ⁽⁶⁾	2	130	135	5	138	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-06a	2	65	70	5	72	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-06b	1	90	95	5	97	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-07a	2	65	70	5	72	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-07b	1	113	118	5	120	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-08a ⁽⁶⁾	2	60	65	5	68	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-08b ⁽⁶⁾	2	80	85	5	88	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-08c ⁽⁶⁾	2	130	135	5	138	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-09a ⁽⁶⁾	2	57	62	5	67	Sch. 40 PVC	Quarterly	--	--	--	--
PZ-10a ⁽⁶⁾	2	65	70	5	75	Sch. 40 PVC	Quarterly	--	--	--	--

Notes and Abbreviations on Last Page

Appendix A
Well Construction Information and Environmental Effectiveness Monitoring Program
Bethpage Park Groundwater Containment System
Operable unit 3 (Former Grumman Settling Ponds)
Bethpage, New York

Notes and Abbreviations:

- (1) Water samples will be collected and analyzed in accordance with the method and procedures described in the BPGWCS OM&M Manual (Arcadis 2016) .
- (2) Approximate locations of the wells and piezometers in the OU3 BPGWCS Monitoring Program are shown in Figure 4.
- (3) Water Levels will be measured in all wells/piezometers during the baseline monitoring event in accordance with the procedures presented in the BPGWCS OM&M Manual (Arcadis 2016) .
- (4) See BPGWCS OM&M Manual (Arcadis 2016) for details of water quality analysis.
- (5) Semiannual wells will be monitored annually after Year 1.
- (7) Wells installed by ERM in 2015.
- (8) Wells installed by EMAGIN in 2017.

Sch. 80 PVC: schedule 80 polyvinyl chloride

Sch. 40 PVC: schedule 40 polyvinyl chloride

BPGWCS: Bethpage Park Groundwater Containment System

SS: stainless steel

Steel: low carbon steel

ft: feet

ft bls: feet below land surface

Table 2. Remedial System Monitoring Program, Bethpage Park Groundwater Containment System, Operable Unit 3
 (Former Grumman Settling Ponds), Northrop Grumman Systems, Corporation, Bethpage, New York. ⁽¹⁾

Sample Location/Instrument ⁽¹⁾	Parameter (Method) ⁽²⁾	Frequency	
		Long-Term ⁽³⁾	SCADA Data Acquisition
<u>Water Samples</u> ⁽⁴⁾			
Remedial Well 1 (WSP-1)	VOCs (USEPA 8260)	Quarterly	NA
	Iron (USEPA 6010)	Annually	NA
	1,4-Dioxane (USEPA 8270)	Quarterly	NA
Remedial Well 2 (WSP-2)	VOCs (USEPA 8260)	Quarterly	NA
	Iron (USEPA 6010)	Annually	NA
	1,4-Dioxane (USEPA 8270)	Quarterly	NA
Remedial Well 3 (WSP-3)	VOCs (USEPA 8260)	Quarterly	NA
	Iron (USEPA 6010)	Annually	NA
	1,4-Dioxane (USEPA 8270)	Quarterly	NA
Remedial Well 4 (WSP-4)	VOCs (USEPA 8260)	Quarterly	NA
	Iron (USEPA 6010)	Annually	NA
	1,4-Dioxane (USEPA 8270)	Quarterly	NA
Air Stripper Influent (WSP-5)	VOCs (USEPA 8260)	Quarterly	NA
	Iron (USEPA 6010)	Quarterly	NA
	1,4-Dioxane (USEPA 8270)	Quarterly	NA
Air Stripper Effluent (WSP-6)	Iron (USEPA 6010)	As Needed	NA
Plant Effluent (WSP-7)	VOCs (USEPA 8260)	Monthly	NA
	1,4-Dioxane (USEPA 8270)	Monthly	NA
	Iron (USEPA 6010)	Monthly	NA
	ph (field)	Monthly	NA
	Mercury	Monthly	NA
<u>Air Samples</u> ^{(4) (5)}			
Air Stripper Effluent/ECU-1 Influent (VSP-1)	VOCs (TO-15 Modified)	Quarterly	NA
ECU-1 Effluent/ECU-2 Influent (VSP-2)	VOCs (TO-15 Modified)	As Needed	NA
ECU-2 Effluent/ECU-3 Influent (VSP-3)	VOCs (TO-15 Modified)	As Needed	NA
ECU-3 Effluent/ECU-4 Influent (VSP-4)	VOCs (TO-15 Modified)	As Needed	NA
Total Effluent (VSP-5)	VOCs (TO-15 Modified)	Quarterly	NA

Table 2. Remedial System Monitoring Program, Bethpage Park Groundwater Containment System, Operable Unit 3 (Former Grumman Settling Ponds), Northrop Grumman Systems, Corporation, Bethpage, New York. ⁽¹⁾

Sample Location/Instrument ⁽¹⁾	Parameter (Method) ⁽²⁾	Frequency	
		Long-Term ⁽³⁾	SCADA Data Acquisition
<u>Water Flow Measurements</u>			
Remedial Well RW-1 (FT - 110)	Flow rate (gpm + total gal.)	Weekly	Continuously
Remedial Well RW-2 (FT - 120)	Flow rate (gpm + total gal.)	Weekly	Continuously
Remedial Well RW-3 (FT - 130)	Flow rate (gpm + total gal.)	Weekly	Continuously
Remedial Well RW-4 (FT - 140)	Flow rate (gpm + total gal.)	Weekly	Continuously
Combined Influent (FR - 200)	Flow rate (gpm + total gal.)	Weekly	Continuously
System Effluent (FT-700)	Flow rate (gpm + total gal.)	Weekly	Continuously
<u>Air Flow Measurements</u>			
Air Stripper Effluent (FT-500)	Flow rate (SCFM)	Weekly	Continuously
<u>Water Pressure Measurements</u>			
Remedial Well RW-1 (PT - 110)	Pressure (i.w.g.)	Weekly	Continuously
Remedial Well RW-2 (PT - 120)	Pressure (i.w.g.)	Weekly	Continuously
Remedial Well RW-3 (PT - 130)	Pressure (i.w.g.)	Weekly	Continuously
Remedial Well RW-4 (PT - 140)	Pressure (i.w.g.)	Weekly	Continuously
Air Stripper Effluent (PT-700)	Pressure (i.w.g.)	Weekly	Continuously
<u>Air Temperature & Relatively Humidity Measurements</u>			
Air Stripper Effluent (TT-500)	Temperature	Weekly	Continuously
ECU Mid-Train (TI-503)	Temperature	Weekly	NA
Effluent (TI-603)	Temperature	Weekly	NA

Table 2. Remedial System Monitoring Program, Bethpage Park Groundwater Containment System, Operable Unit 3 (Former Grumman Settling Ponds), Northrop Grumman Systems, Corporation, Bethpage, New York. ⁽¹⁾

Sample Location/Instrument ⁽¹⁾	Parameter (Method) ⁽²⁾	Frequency	
		Long-Term ⁽³⁾	SCADA Data Acquisition
<u>Air Pressure Measurements</u>			
Air Stripper Effluent (PT-500)	Pressure (i.w.g.)	Quarterly	Continuously
ECU #1 Influent (PI-501)	Pressure (i.w.g.)	Quarterly	NA
ECU #2 Influent (PI-502)	Pressure (i.w.g.)	Quarterly	NA
ECU #3 Influent (PI-601)	Pressure (i.w.g.)	Quarterly	NA
ECU #4 Influent (PI-602)	Pressure (i.w.g.)	Quarterly	NA
System Effluent (PI-603)	Pressure (i.w.g.)	Quarterly	NA

Notes:

- (1) Refer to Appendix E of the Operation, Maintenance and Monitoring Manual for a diagram showing referenced sample locations and measurement points.
- (2) Parameters/methods may be modified based on review of short-term and/or long-term testing results. Parameters shown in **Bold** indicate parameters that require NYSDEC notification/approval prior to change in monitoring schedule.
- (3) Long-term schedule is tentative. Modification may be required/recommended based on the results of water quality trends.
- (4) Samples will be analyzed in accordance with the methods and procedures described in the Sampling and Analysis Plan.
- (5) Additional air samples will be collected to help calculate media usage rates and to help determine media changeout frequencies.

Acronyms:

NA	Not applicable	NYSDEC	New York State Department of Environmental Conservation
ECU	Emissions control unit	EPA	U.S. Environmental Protection Agency
VOCs	Volatile organic compounds	SCADA	Supervisory Control And Data Acquisition
gal.	Gallons		
gpm	Gallons per minute		
i.w.g.	Inches water gauge		

Appendix B

Compliance and Performance Program

Sample Location/Instrument ⁽¹⁾	Parameter (Method) ⁽²⁾	Frequency			
		Short-Term ⁽³⁾		Long-Term ⁽⁴⁾	SCADA Data Acquisition
		(First month)	(Five month period following first month)		
Water Samples ⁽⁶⁾					
Remedial Well 1 (WSP-1)	VOCs (USEPA Method 8260C)	Bi-Weekly	Quarterly	Quarterly	NA
	Iron (USEPA 6010C)	Bi-Weekly	Annually	Annually	NA
	Cadmium and Chromium (USEPA 6010C) ⁽¹¹⁾				
	---		Annually	Annually	NA
Remedial Well 2 (WSP-2)	1,4-Dioxane (USEPA Method 522) ⁽¹²⁾		Quarterly	Quarterly	NA
	VOCs (USEPA Method 8260C)	Bi-Weekly	Quarterly	Quarterly	NA
	Iron (USEPA 6010C)	Bi-Weekly	Annually	Annually	NA
	Cadmium and Chromium (USEPA 6010C) ⁽¹¹⁾				
Remedial Well 3 (WSP-3)	---		Annually	Annually	NA
	1,4-Dioxane (USEPA Method 522) ⁽¹²⁾		Quarterly	Quarterly	NA
	VOCs (USEPA Method 8260C)	Bi-Weekly	Quarterly	Quarterly	NA
	Iron (USEPA 6010C)	Bi-Weekly	Annually	Annually	NA
Remedial Well 4 (WSP-4)	Cadmium and Chromium (USEPA 6010C) ⁽¹¹⁾				
	---		Annually	Annually	NA
	1,4-Dioxane (USEPA Method 522) ⁽¹²⁾		Quarterly	Quarterly	NA
	VOCs (USEPA Method 8260C)	Bi-Weekly	Quarterly	Quarterly	NA
Air Stripper Influent (WSP-5)	Iron (USEPA 6010C)	Bi-Weekly	Annually	Annually	NA
	Cadmium and Chromium (USEPA 6010C) ⁽¹¹⁾				
	---		Annually	Annually	NA
	1,4-Dioxane (USEPA Method 522) ⁽¹²⁾		Quarterly	Quarterly	NA
Air Stripper Effluent (WSP-6)	VOCs (USEPA Method 8260C)	1-hr ⁽⁶⁾ ; Days 1, 3, & Weekly	Monthly	Quarterly	NA
	Iron (USEPA 6010C)	1-hr ⁽⁶⁾ ; Days 1, 3, & Weekly	Monthly	Quarterly	NA
	1,4-Dioxane (USEPA Method 522) ⁽¹²⁾		Quarterly	Quarterly	NA
Plant Effluent (WSP-7)	Iron (USEPA 6010C)	1-hr ⁽⁶⁾ ; As Needed	As Needed	As Needed	NA
	VOCs (USEPA Method 8260C and 624) ⁽¹³⁾	1-hr ⁽⁶⁾ ; Days 1, 3, & Weekly	Monthly	Monthly	NA
	Iron (USEPA 6010C)	1-hr ⁽⁶⁾ ; Days 1, 3, & Weekly	Monthly	Monthly	NA
	Mercury (USEPA 7470A) ⁽⁷⁾	1-hr ⁽⁶⁾ ; Days 1, 3, & Weekly	Monthly	Monthly	NA
	1,4-Dioxane (USEPA Method 522) ⁽¹²⁾		Monthly	Monthly	NA
	Cadmium and Chromium (USEPA 6010C) ⁽¹¹⁾				
	---		Quarterly	Quarterly	NA
	Total Nitrogen, Nitrate + Nitrite (USEPA Method 353.2) ⁽¹³⁾		Monthly	Monthly	NA
	TKN (USEPA Method 351.2) ⁽¹³⁾		Monthly	Monthly	NA
	pH (field) ⁽⁸⁾	1-hr ⁽⁶⁾ ; Days 1, 3, & Weekly	Monthly	Monthly	NA
and		Quarterly	Quarterly	NA	
Air Samples ^{(9) (10)}					
Air Stripper Effluent/ECU-1 Influent (VSP-1)	VOCs (TO-15 Modified)	Monthly	Monthly	Quarterly	NA
ECU-1 Effluent/ECU-2 Influent (VSP-2)	VOCs (TO-15 Modified)	As Needed	As Needed	As Needed	NA
ECU-2 Effluent/ECU-3 Influent (VSP-3)	VOCs (TO-15 Modified)	As Needed	As Needed	As Needed	NA
ECU-3 Effluent/ECU-4 Influent (VSP-4)	VOCs (TO-15 Modified)	As Needed	As Needed	As Needed	NA
Total Effluent (VSP-5)	VOCs (TO-15 Modified)	Monthly	Monthly	Quarterly	NA

See notes on last page.

Sample Location/Instrument ⁽¹⁾	Parameter (Method) ⁽²⁾	Frequency			
		Short-Term ⁽³⁾		Long-Term ⁽⁴⁾	SCADA Data Acquisition
		(First month)	(Five month period following first month)		
<u>Water Flow Measurements</u>					
Remedial Well RW-1 (FT - 110)	Flow rate (gpm + total gal.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Remedial Well RW-2 (FT - 120)	Flow rate (gpm + total gal.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Remedial Well RW-3 (FT - 130)	Flow rate (gpm + total gal.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Remedial Well RW-4 (FT - 140)	Flow rate (gpm + total gal.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Combined Influent (FR - 200)	Flow rate (gpm + total gal.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
System Effluent (FT-700)	Flow rate (gpm + total gal.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
<u>Air Flow Measurements</u>					
Air Stripper Effluent (FT-500)	Flow rate (SCFM)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
<u>Water Pressure Measurements</u>					
Remedial Well RW-1 (PT - 110)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Remedial Well RW-2 (PT - 120)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Remedial Well RW-3 (PT - 130)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Remedial Well RW-4 (PT - 140)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
Air Stripper Effluent (PT-700)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Weekly	Weekly	Continuously
<u>Air Temperature & Relative Humidity Measurements</u>					
Air Stripper Effluent (TT-500)	Temperature	Weekly	Weekly	Weekly	Continuously
ECU Mid-Train (TI-503)	Temperature	Weekly	Weekly	Weekly	NA
Effluent (TI-603)	Temperature	Weekly	Weekly	Weekly	NA
<u>Air Pressure Measurements</u>					
Air Stripper Effluent (PT-500)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Monthly	Quarterly	Continuously
ECU #1 Influent (PI-501)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Monthly	Quarterly	NA
ECU #2 Influent (PI-502)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Monthly	Quarterly	NA
ECU #3 Influent (PI-601)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Monthly	Quarterly	NA
ECU #4 Influent (PI-602)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Monthly	Quarterly	NA
System Effluent (PI-603)	Pressure (i.w.g.)	(Daily -1st week) Weekly	Monthly	Quarterly	NA

See notes on last page.

Abbreviations, Notes and Units:

- (1) Refer to Figure 3 of this Operation, Maintenance, & Monitoring (OM&M) Report and Appendix E of the Groundwater IRM OM&M Manual (OM&M Manual (ARCADIS 2009)) for a diagram showing referenced sample locations and measurement points.
- (2) Parameters/methods may be modified based on review of short-term and/or long-term testing results. Parameters shown in **Bold** indicate parameters that require NYSDEC notification/approval prior to change in monitoring schedule.
- (3) Short-term schedule is tentative. Modification may be required/recommended based on the results of start-up and performance testing.
- (4) Long-term schedule is tentative. Modification may be required/recommended based on the results of short-term testing or water quality trends.
- (5) Water samples will be collected in accordance with the methods described in the Sampling and Analysis Plan, which is included as Appendix A of the OM&M Manual (ARCADIS 2009). Samples will be analyzed in accordance with the methods and procedures described in the Sampling and Analysis Plan.
- (6) Per NYSDEC request, a 1-hr pilot test was performed during system shake-down. The 1-hr pilot test samples were also analyzed for Mercury (Hg).
- (7) Per the interim treated effluent (water) discharge criteria provided in the NYSDEC letter dated March 19, 2009, select samples were analyzed for Mercury (Hg).
- (8) As authorized by the NYSDEC, the pH monitoring frequency was reduced from weekly to monthly beginning on February 8, 2010.
- (9) Air samples collected and analyzed in accordance with methods described in the Sampling and Analysis Plan, which is included as Appendix A of the OM&M Manual (ARCADIS 2009).
- (10) Additional air samples will be collected to help calculate media usage rates and to help determine media changeout frequencies.
- (11) Cadmium and Chromium analyses are part of the Environmental Effectiveness Monitoring Program (Table A-1) and the original discharge permit application. They are included here for consistency.
- (12) As of July 11 2018, 1,4-Dioxane is analyzed per USEPA Method 8270-SIM-CLLE.
- (13) As of November 2017, plant effluent was analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624; Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

ECU	Emissions Control Unit
EPA	U.S. Environmental Protection Agency
NA	Not Applicable
---	Not Required
NYSDEC	New York State Department of Environmental Conservation
OM&M	Operation, Maintenance and Monitoring
SCADA	Supervisory Control And Data Acquisition
SPDES	State Pollutant Discharge Elimination System
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds (refer Tables D-3 and D-5 in the Quality Assurance Project Plan (QAPP) (Appendix D of the OM&M Manual (ARCADIS 2009)) for the analyte lists for aqueous and air samples, respectively)
gal	gallons
gpm	gallons per minute
i.w.g.	inches water gauge

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