Mr. Jason Pelton
NYSDEC Remedial Bureau D, Section B
Section Chief, Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7015

Date: November 15, 2022
Our Ref: 30119298
Subject: Summary Report – Baseline Groundwater Sampling
Operable Unit 3 – RW-21 Area
NYSDEC ID# 1-30-003A
Northrop Grumman Corporation Aeronautics Systems,
Bethpage, New York

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Dear Mr. Pelton,

This letter report was prepared by Arcadis of New York, Inc. (Arcadis), summarizing the results of the RW-21 Area Baseline Groundwater Sampling Program (Baseline Program), performed per the provisions of the RW-21 Area Baseline Groundwater Sampling Program Work Plan (Baseline Work Plan), dated February 2022. The RW-21 Area remedy is being implemented in accordance with the 2014 Order of Consent between Northrop Grumman Corporation Aeronautics Systems (Northrop Grumman) and the New York State Department of Environmental Conservation (NYSDEC) and the March 2013 NYSDEC Record of Decision (ROD) for Operable Unit 3 (OU3). The Baseline Program was implemented prior to RW-21 Area system start-up and commissioning, currently scheduled for the Third Quarter of 2022.

The narrative below describes the Baseline Program activities and associated analytical results, along with a brief comparison to historical data (collected between 2013 through 2017) associated with the Baseline monitoring well network and RW-21 Area Remedial Recovery Wells RW-20, RW-21 and RW-22, where available.

# Introduction

The Baseline Program field work was completed between March 14 and 31, 2022, except for three wells. Wells RW-21_MW12-1 and RW-21_MW-12-2 were sampled on May 5, 2022, following coordination with the NYSDOT for traffic controls. As described below, based on the well condition survey results, Well MW-118-5 was determined to require maintenance. The well was assessed with driller support on June 22, 2022 and repairs were completed. Sampling of Well MW-118-5 was completed on August 9, 2022; analytical results are provided in **Table 3.**

Baseline Program field work consisted of an initial well condition survey, water-level measurements, monitoring well sampling, and investigation-derived waste (IDW) disposal/management.

The RW-21 Area is located southeast of the former Grumman complex (the Site) and is south of Bethpage Community Park (see **Figure 1** in **Attachment 1**). The RW-21 Area monitoring well network (23 monitoring wells)

is shown on **Figure 1**. Well construction details and waste handling requirements are provided in **Table 1** in **Attachment 2**.

Baseline Program groundwater samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) using USEPA Method 8260C and 1,4-dioxane using USEPA Method 8270E SIM (selective ion monitoring). Samples were also analyzed for total and dissolved iron using USEPA Method 6010C.

# Field and Analytical Results

Based on the results of the well survey, most wells and downhole equipment (if equipped) were generally found to be in good condition (Well Condition Survey Forms are provided as **Attachment 3**), except for several missing protective casing gaskets, bolts and locks, as well as broken bolt eyelets at several wells, as outlined in the Well Condition Survey Forms, which will be repaired. Well MW-118-5 could not be initially sampled as it appeared to be affected by sediment. On June 22, 2022, a driller pulled the downhole equipment (submersible pump and well packer) from the well and sediment was disturbed/removed during this process. The submersible pump and well packer were tested and found to be operational. In addition, the total depth of the well was measured and approximately 1-foot of sediment was noted within the 5-foot well sump. Well MW-118-5 was sampled on August 9, 2022, following the assessment of the dedicated down-hole equipment; no performance issues were observed with the equipment utilized during purging or sampling activities.

Depth to water measurements and calculated groundwater elevations are provided in **Table 2** in **Attachment 2**. Baseline Program analytical results were compared to the NYSDEC Class GA Groundwater Standards and Guidance Values (Class GA Standards) and are summarized on **Table 3** in **Attachment 2**. Also included in **Table 3** are VOC and 1,4-dioxane results from pre-start-up sampling of Wells RW-20 and RW-21 completed under a separate program. In addition, the analytical results from the initial sampling of the RW-21 Area well network (2013 through 2017) were reviewed and compared to analytical results from the Baseline Program sampling and that comparison is discussed below. The initial sampling results are also summarized on **Table 3**.

For the Baseline Program sampling round, a total of 22 of the 23 RW-21 Area wells sampled exhibited one or more VOC in exceedance of the Class GA Standards, with Well RW-21_MW-12-2 exhibiting contaminant concentrations below detection levels. Trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE) exhibited the highest concentrations at Well RW-21_MW-3-1, with detections of up to 9,460 µg/L and 1,820 µg/L (replicate sample results), respectively. Well RW-21_MW-3-1 is located approximately 25 feet south/southeast of Well RW-21. The Class GA Standards for TCE and cis-1,2-DCE are both 5 µg/L.

Overall, total VOC (TVOC) concentrations were generally higher in the central area of the well network, in the general vicinity of the remedial wells. Compared to the historical analytical results, the 2022 analytical results indicate that the RW-21 area plume has shifted slightly to the west, with several wells located in the western portion of the RW-21 Area (RW-21_MW-9, RW-21_MW-11, and RW-21_MW-15) exhibiting TVOC increases of multiple times and/or orders of magnitude; while wells located in eastern areas (RW-21_MW-4, RW-21_MW-8, RW-21_MW-12-1, RW-21_MW-12-2 and RW-21_MW-14) exhibited TVOC reductions. The southernmost wells (RW-21_MW-13 and MW-118-5) exhibited a TVOC increase of greater than an order of magnitude.

A total of 21 of 23 wells exhibited detections of 1,4-dioxane (up to 220 µg/L, and at Well RW-21_MW-3-1), generally following a similar distribution of VOCs with respect to relative concentrations throughout the plume. NYSDEC has not established a Class GA Standard for 1,4-dioxane. Compared to historical analytical results,

current 1,4-dioxane concentrations generally correlate well with these VOC trends and are exhibiting a similar shift to the west.

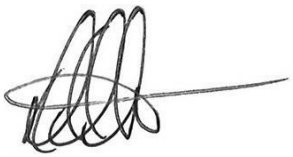
Total and dissolved iron were detected sporadically throughout the RW-21 Area well network in 16 and four of the 23 monitoring wells, respectively. The highest total iron concentration (2,000 µg/l) was detected in Well RW-21_MW-12-1, located in the eastern RW-21 Area, approximately 1,250 feet east/northeast of Remedial Well RW-20. The highest dissolved iron concentration (350 µg/l) was detected in Well RW-21_MW-3-2, located approximately 25 feet south/southeast of Well RW-21. Current total and dissolved iron concentrations were generally comparable to or consistent with historical analytical results.

# Long Term Monitoring Plan

Northop Grumman plans to continue to move forward with implementation of a routine long-term groundwater monitoring and sampling plan consistent with the provisions of the draft Long-Term Groundwater Sampling Plan (Long-Term Plan) to establish and monitor long-term contaminant concentration trends and water levels within the RW-21 Area well network during routine operation of the RW-21 Area system. This Plan will be submitted to the NYSDEC at a future date.

The Long-Term Plan will provide the framework to demonstrate that the RW-21 Area system is meeting applicable portions of the Consent Order and OU3 ROD objectives as well as NYSDEC's DER-10 Guidance Document. Remedial objectives set forth in the ROD require that the RW-21 system capture and treat the RW-21 portion of the OU3 plume to the maximum extent practical, at a minimum capturing and treating 90 percent of the mass of groundwater migrating from the RW-21 area. The Long-Term Plan may be revised over time to incorporate changes to the long-term monitoring, sampling, and reporting scope and/or frequencies, as well as RW-21 Area well network changes (i.e., adding or removing wells), as data from the sampling and monitoring efforts become available and trends develop over time.

Sincerely,
Arcadis of New York, Inc.



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Northrop Grumman Corporation Aeronautics Systems
November 15, 2022

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Carlo San Giovanni, Arcadis
Mike Wolfert, Arcadis
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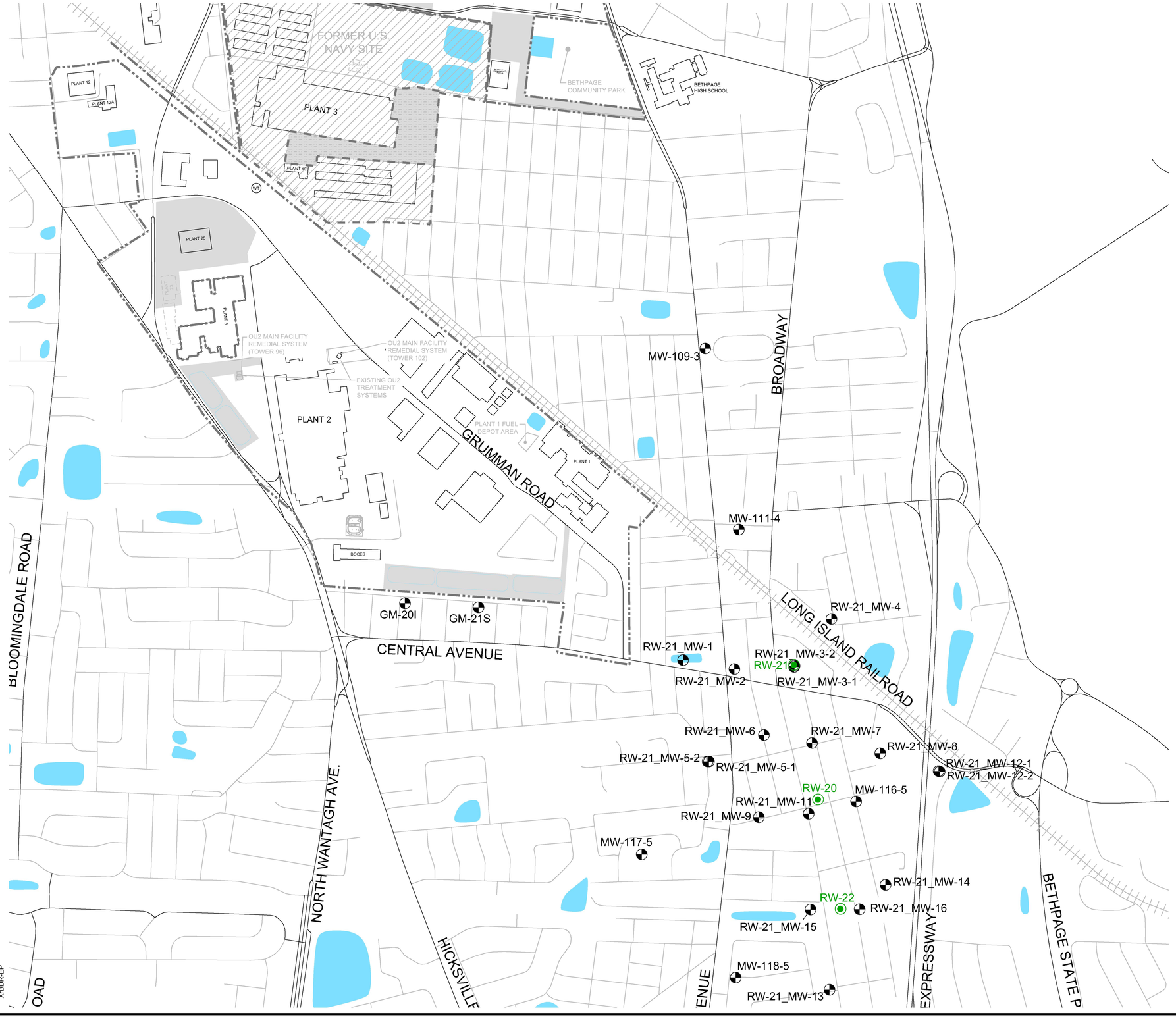
Enclosures:

Attachments

1 **Figure 1** – RW-21 Area Well Locations and Site Features
2 **Table 1** – Well Construction Details and Waste Handling Requirements
**Table 2** – Baseline Depth to Water Measurements and Calculated Groundwater Elevations
**Table 3** – RW-21 Area Groundwater Sample Analytical Results
3 Well Condition Survey Forms

# Attachments

# Figures




EXPLANATION:

- FORMER NORTHROP GRUMMAN PROPERTY BOUNDARY
- FORMER OCCIDENTAL CHEMICAL CORPORATION PROPERTY BOUNDARY
- NORTHROP GRUMMAN PROPERTY
- FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
- MONITORING WELL
- RECOVERY WELL

NORTHROP GRUMMAN
BETHPAGE, NEW YORK

# RW-21 Area Well Locations and Site Features

ARCADIS

FIGURE 1


C:\Users\jlharris\ACCDocs\Arcadis\AUS-NORTHROP GRUMMAN-BETHPAGE New York\Project Files\2022\01-In Progress\01-DWG\GEN-FIG1-WELLS.dwg LAYOUT: 1 SAVED: 2/7/2022 3:20 PM ACADVER: 24.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 6/6/2022 12:54 PM BY: HARRIS, JESS
XREFS: IMAGES: PROJECTNAME: ----
Xr1486Xsp Arcadis Logo_2021.PNG
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# Tables

**Table 1**
**Well Construction Details and Waste Handling Requirements**
**Operable Unit 3.5 - RW-21 Area**
**Northrop Grumman**
**Bethpage, New York**

| Identification Number | Well Diameter (in) | Screened Interval (ft bls) | | | Total Depth (ft bls) | Waste Handling Requirements |
|---|---|---|---|---|---|---|
| **Monitoring Wells** | | | | | | |
| RW-21 MW-1 | 4 | 615 | - | 625 | 630 | Contained/ Haz (1) |
| RW-21 MW-2 | 4 | 600 | - | 610 | 615 | Contained/ Haz (1) |
| RW-21 MW-3-1 | 4 | 556 | - | 566 | 571 | Contained/ Haz (1) |
| RW-21 MW-3-2 | 4 | 595 | - | 605 | 610 | Contained/ Haz (1) |
| RW-21 MW-4 | 4 | 369 | - | 384 | 389 | Contained/ Non-Haz |
| RW-21 MW-5-1 | 2 | 300 | - | 310 | 315 | Contained/ Non-Haz |
| RW-21 MW-5-2 | 2 | 560 | - | 570 | 575 | Contained/ Non-Haz |
| RW-21 MW-6 | 4 | 604 | - | 624 | 629 | Contained/ Haz (1) |
| RW-21 MW-7 | 4 | 580 | - | 590 | 595 | Contained/ Haz (1) |
| RW-21 MW-8 | 4 | 460 | - | 470 | 475 | Contained/ Non-Haz |
| RW-21 MW-9 | 4 | 630 | - | 640 | 645 | Contained/ Haz (1) |
| RW-21 MW-11 | 4 | 638 | - | 648 | 653 | Contained/ Haz (1) |
| RW-21 MW-12-1 | 2 | 415 | - | 425 | 430 | Contained/ Non-Haz |
| RW-21 MW-12-2 | 2 | 590 | - | 600 | 605 | Contained/ Non-Haz |
| RW-21 MW-13 | 4 | 716 | - | 726 | 731 | Contained/ Non-Haz |
| RW-21 MW-14 | 4 | 630 | - | 640 | 645 | Contained/ Non-Haz |
| RW-21 MW-15 | 4 | 676 | - | 686 | 691 | Contained/ Haz (1) |
| RW-21 MW-16 | 4 | 636 | - | 646 | 651 | Contained/ Haz (1) |
| MW-117-5 | 4 | 737 | - | 757 | 762 | Contained/ Non-Haz |
| MW-118-5 | 4 | 713 | - | 738 | 743 | Contained/ Non-Haz |
| MW-109-3 | 4 | 233 | - | 243 | 248 | Contained/ Non-Haz |
| MW-111-4 | 4 | 448 | - | 468 | 473 | Contained/ Haz (1) |
| MW-116-5 | 4 | 570 | - | 590 | 595 | Contained/ Haz (1) |

**Notes and Abbreviations:**

Analytical parameters for all wells will consist of VOCs by USEPA 8260C, 1,4-dioxane by USEPA 8270E SIM, total and dissolved iron by USEPA 6010C.

(1) Based on prior laboratory analyses in 2016/2017 or newly obtained data from the Baseline Groundwater Sampling Event, purge water previously exhibited hazardous concentrations of TCE.

NA Not Applicable.

**Table 2**
**Baseline Depth to Water Measurements and Calculated Groundwater Elevations**
**Operble Unit 3.5 - RW-21 Area**
**Northrop Grumman**
**Bethpage, New York**

| Well Identification | Measuring Point Elevation (ft msl) | Depth to Water (ft bmp) | Water-Level Elevation (ft msl) | Top of Screen (ft msl) | Bottom of Screen (ft msl) |
|---|---|---|---|---|---|
| RW-21 MW-1 | 101.29 | 42.05 | 59.24 | 615 | 625 |
| RW-21 MW-2 | 96.28 | 37.66 | 58.62 | 600 | 610 |
| RW-21 MW-3-1 | 97.37 | 38.89 | 58.48 | 556 | 566 |
| RW-21 MW-3-2 | 97.53 | 38.96 | 58.57 | 595 | 605 |
| RW-21 MW-4 | 102.31 | 42.01 | 60.30 | 369 | 384 |
| RW-21 MW-5-1 | 96.84 | 37.57 | 59.27 | 300 | 310 |
| RW-21 MW-5-2 | 96.84 | 39.76 | 57.08 | 560 | 570 |
| RW-21 MW-6 | 94.02 | 36.89 | 57.13 | 604 | 624 |
| RW-21 MW-7 | 96.57 | 39.48 | 57.09 | 580 | 590 |
| RW-21 MW-8 | 98.51 | 41.65 | 56.86 | 460 | 470 |
| RW-21 MW-9 | 91.60 | 35.91 | 55.69 | 630 | 640 |
| RW-21 MW-11 | 94.35 | 38.66 | 55.69 | 638 | 648 |
| RW-21 MW-12-1 | 74.69 | 18.79 | 55.90 | 415 | 425 |
| RW-21 MW-12-2 | 74.69 | 19.28 | 55.41 | 590 | 600 |
| RW-21 MW-13 | 87.48 | 40.60 | 46.88 | 716 | 726 |
| RW-21 MW-14 | 85.26 | 31.74 | 53.52 | 630 | 640 |
| RW-21 MW-15 | 92.20 | NM | NA | 676 | 686 |
| RW-21 MW-16 | 89.46 | NM | NA | 636 | 646 |
| MW-109-3 | 111.92 | 44.33 | 67.59 | 233 | 243 |
| MW-111-4 | 103.38 | 40.62 | 62.76 | 448 | 468 |
| MW-116-5 | 93.58 | 37.15 | 56.43 | 570 | 590 |
| MW-117-5 | 94.80 | 38.32 | 56.48 | 737 | 757 |
| MW-118-5 | 85.53 | NM | NA | 718 | 738 |

| Well Identification | Measuring Point Elevation (ft msl) | Depth to Water (ft bmp) | Water-Level Elevation (ft msl) | Top of Screen (ft msl) | Bottom of Screen (ft msl) |
|---|---|---|---|---|---|
| RW-20 | NM | NM | NA | 600 | 650 |
| RW-21 | 97.56 | NM | NA | 531 | 626 |
| RW-22 | 89.93 | NM | NA | 598 | 715 |

**Notes and Abbreviations:**
Water level data was collected by Arcadis between March 14 and March 15, 2022.
ft bmp feet below measuring point
ft msl feet relative to mean sea level
NM not measured - not able to be inspected at time of survey
NA not available

**Table 3**
**RW-21 Area Groundwater Sample Analytical Results Results**
**Operable Unit 3.5 RW-21**
**Northrop Grumman,**
**Bethpage, New York**

| Constituent (units in ug/L) | NYSDEC Class GA GW Criteria | CAS RN | Location ID: / Sample ID: / Date: | MW-109-3 MW-109-3 10/14/2016 | MW-109-3 MW-109-3 3/17/2022 | MW-111-4 MW-111-4 10/14/2016 | MW-111-4 MW-111-4 3/17/2022 | MW-116-5 MW-116-5 12/16/2016 | MW-116-5 MW-116-5 3/16/2022 | MW-116-5 REP031622BW1 3/16/2022 | MW-117-5 MW-117-5 6/20/2013 | MW-117-5 MW-117-5 3/29/2022 | MW-118-5 MW-118-5 6/28/2013 | MW-118-5 MW-118-5 8/9/2022 | RW-21_MW-1 RW-21_MW-1 12/9/2016 | RW-21_MW-1 RW-21_MW-1 3/31/2022 | RW-21_MW-2 RW-21_MW-2 12/9/2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 5 | 71-55-6 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | **2.6** | < 10 U | **4.1** |
| 1,1,2,2-Tetrachloroethane | 5 | 79-34-5 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 5 | 76-13-1 | | < 5.0 | < 5.0 | < 50 | < 25 | < 50 | < 50 | < 50 | **0.42 J** | **0.91 J** | < 5.0 | < 5.0 | < 5.0 U | < 50 U | **1.8 J** |
| 1,1,2-Trichloroethane | 1 | 79-00-5 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | **5.7 J** | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | **2.8** | < 10 U | **1.3** |
| 1,1-Dichloroethane | 5 | 75-34-3 | | **4.6** | **2.3** | **12.2** | **5.7** | **2.6 J** | **20.2** | **20.7** | **0.31 J** | **0.58 J** | < 5.0 | 0.74 J | **6.8** | **8.9 J** | **10.4** |
| 1,1-Dichloroethene | 5 | 75-35-4 | | **1.2** | < 1.0 | **5.4 J** | < 5.0 | **5.1 J** | **22.8** | **22.3** | **0.27 J** | **0.69 J** | < 5.0 | 0.64 J | **7.2** | **12.7** | **13.0** |
| 1,2-Dichloroethane | 0.6 | 107-06-2 | | **1.2** | **0.73 J** | **5.0 J** | < 5.0 | **13.1** | **32.1** | **33.3** | < 5.0 U | < 1.0 U | < 5.0 | 1.1 | **12.2** | **7.9 J** | **8.6** |
| 1,2-Dichloropropane | 1 | 78-87-5 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | **9.0 J** | **9.6 J** | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | **3.3** | < 10 U | **1.6** |
| 2-Butanone (MEK) | 50 | 78-93-3 | | < 10 | < 10 | < 100 | < 50 | < 100 | < 100 | < 100 | < 50 U | < 10 U | < 50 | < 10 | < 10 U | < 100 U | < 10 U |
| 4-Methyl-2-Pentanone | | 108-10-1 | | < 5.0 | < 5.0 | < 50 | < 25 | < 50 | < 50 | < 50 | < 50 U | < 5.0 U | < 50 | < 5.0 | < 5.0 U | < 50 U | < 5.0 U |
| Acetone | 50 | 67-64-1 | | < 10 | < 10 | < 100 | < 50 | < 100 | < 100 | < 100 | < 50 U | < 10 U | < 50 | < 10 | < 10 U | < 100 U | < 10 U |
| Benzene | 1 | 71-43-2 | | < 0.50 | < 0.50 | < 5.0 | < 2.5 | < 5.0 | < 5.0 | < 5.0 | < 0.70 U | < 0.50 U | < 0.70 | < 0.50 | < 0.50 U | < 5.0 U | < 0.50 U |
| Bromodichloromethane | 50 | 75-27-4 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Bromoform | 50 | 75-25-2 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Bromomethane | 5 | 74-83-9 | | < 2.0 | < 2.0 | < 20 | < 10 | < 20 | < 20 | < 20 | < 5.0 U | < 2.0 U | < 5.0 | < 2.0 | < 2.0 U | < 20 U | < 2.0 U |
| Carbon Disulfide | 60 | 75-15-0 | | < 2.0 | < 2.0 | < 20 | < 10 | < 20 | < 20 | < 20 | < 5.0 U | < 2.0 U | < 5.0 | < 2.0 | < 2.0 U | < 20 U | < 2.0 U |
| Carbon Tetrachloride | 5 | 56-23-5 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | **0.32 J** | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| CFC-12 | 5 | 75-71-8 | | < 2.0 | < 2.0 | < 20 | < 10 | < 20 | < 20 | < 20 | < 5.0 U | < 2.0 U | < 5.0 | < 2.0 | < 2.0 U | < 20 U | < 2.0 U |
| Chlorobenzene | 5 | 108-90-7 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Chlorodibromomethane | 50 | 124-48-1 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Chlorodifluoromethane | 5 | 75-45-6 | | **1.3 J** | **1.4 J** | < 50 | < 25 | < 50 | < 50 | < 50 | < 5.0 U | < 5.0 U | < 5.0 | < 5.0 | < 5.0 U | < 50 U | < 5.0 U |
| Chloroethane | 5 | 75-00-3 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Chloroform | 7 | 67-66-3 | | **6.0** | **6.1** | **3.8 J** | **2.6 J** | **14.6** | **22.8** | **24.3** | **0.31 J** | < 1.0 U | < 5.0 | 2.0 | **7.2** | < 10 U | **5.6** |
| Chloromethane | 5 | 74-87-3 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| cis-1,2-Dichloroethene | 5 | 156-59-2 | | **319** | **214** | **850** | **509** | **230** | **926** | **980** | < 5.0 U | < 1.0 U | < 5.0 | 21.0 | **272** | **460** | **441** |
| cis-1,3-Dichloropropene | 0.4 | 10061-01-5 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Dichloromethane | 5 | 75-09-2 | | < 2.0 | < 2.0 | < 20 | < 10 | < 20 | < 20 | < 20 | < 5.0 U | < 2.0 U | < 5.0 | < 2.0 | < 2.0 U | < 20 U | < 2.0 U |
| Ethylbenzene | 5 | 100-41-4 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| m&p-Xylenes | 5 | ARC-mpXyl | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | -- | < 1.0 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 50 | 591-78-6 | | < 5.0 | < 5.0 | < 50 | < 25 | < 50 | < 50 | < 50 | < 50 U | < 5.0 U | < 50 | < 5.0 | < 5.0 U | < 50 U | < 5.0 U |
| o-Xylene | 5 | 95-47-6 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Styrene (Monomer) | 5 | 100-42-5 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Tetrachloroethene | 5 | 127-18-4 | | **2.4** | **0.97 J** | **10.0** | **7.5** | < 10 | < 10 | < 10 | **0.27 J** | **0.95 J** | **< 5.0** | **< 1.0** | **1.9** | < 10 U | **5.4** |
| Toluene | 5 | 108-88-3 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| trans-1,2-Dichloroethene | 5 | 156-60-5 | | **2.3** | **1.3** | **23.5** | < 5.0 | < 10 | **6.5 J** | **5.5 J** | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | **1.2** | < 10 U | **1.5** |
| trans-1,3-Dichloropropene | 0.4 | 10061-02-6 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 5.0 U | < 1.0 U | < 5.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| Trichloroethene | 5 | 79-01-6 | | **455** | **239** | **1,670** | **873** | **1,580** | **5,850** | **5,570** | **5.1** | **15.1** | **0.33 J** | **152** | **2,650** | **3,540** | **1,930** |
| Vinyl chloride | 2 | 75-01-4 | | < 1.0 | < 1.0 | < 10 | < 5.0 | < 10 | < 10 | < 10 | < 2.0 U | < 1.0 U | < 2.0 | < 1.0 | < 1.0 U | < 10 U | < 1.0 U |
| **Total VOCs** | | | | 793 | 466 | 2,580 | 1,398 | 1,845 | 6,889 | 6,671 | 7 | 18.2 | **0.33** | **177.48** | 2,967 | 4,030 | 2,424 |
| 1,4-Dioxane | | 123-91-1 | | **11.3** | **6.1 F1** | **33.1** | **14** | **28.1** | **110** | **98** | -- | **4.9** | -- | **3.1** | **42.4** | **67** | **52.6** |
| **Metals** | | | | | | | | | | | | | | | | | |
| Iron (Dissolved) | 300 | 7439-89-6 | | -- | **101** | -- | < 100 | -- | < 100 | < 100 | -- | < 100 U | -- | < 100 | -- | < 100 U | < 100 U |
| Iron (Total) | 300 | 7439-89-6 | | -- | **260** | -- | < 100 | -- | < 100 | < 100 | -- | < 100 U | -- | < 100 | -- | **170** | **399** |

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**Table 3**
**RW-21 Area Groundwater Sample Analytical Results Results**
**Operable Unit 3.5 RW-21**
**Northrop Grumman,**
**Bethpage, New York**

| Constituent (units in ug/L) | NYSDEC Class GA GW Criteria | CAS RN | Location ID: / Sample ID: / Date: | RW-21_MW-2 / RW-21_MW-2 / 3/31/2022 | RW-21_MW-3-1 / RW-21_MW-3-1 / 12/7/2016 | RW-21_MW-3-1 / REP120716TD / 12/7/2016 | RW-21_MW-3-1 / RW-21_MW-3-1 / 3/30/2022 | RW-21_MW-3-1 / REP033022BW / 3/30/2022 | RW-21_MW-3-2 / RW-21_MW-3-2 / 12/7/2016 | RW-21_MW-3-2 / RW-21_MW-3-2 / 3/30/2022 | RW-21_MW-4 / RW-21_MW-4 / 12/13/2016 | RW-21_MW-4 / RW-21_MW-4 / 3/25/2022 | RW-21_MW-5-1 / RW-21_MW-5-1 / 12/14/2016 | RW-21_MW-5-1 / RW-21_MW-5-1 / 3/24/2022 | RW-21_MW-5-2 / RW-21_MW-5-2 / 12/14/2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 5 | 71-55-6 | | < 4.0 U | **8.4 J** | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | **0.69 J** | < 1.0 U | **0.32 J** | < 1.0 U | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 5 | 79-34-5 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 5 | 76-13-1 | | < 20 U | < 130 U | < 250 U | < 250 U | < 250 U | < 130 U | < 130 U | < 5.0 U | < 5.0 U | < 5.0 U | **1.3 J** | < 5.0 |
| 1,1,2-Trichloroethane | 1 | 79-00-5 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| 1,1-Dichloroethane | 5 | 75-34-3 | | **5.8** | **29.5** | **25.7 J** | **45.4 J** | **48.0 J** | **21.5 J** | **33.5** | **4.6** | **1.8** | **3.3** | < 1.0 U | < 1.0 |
| 1,1-Dichloroethene | 5 | 75-35-4 | | **9.1** | **28.0** | **31.9 J** | **46.2 J** | **49.5 J** | **16.6 J** | **26.4** | **2.3** | **1.1** | **0.98 J** | < 1.0 U | < 1.0 |
| 1,2-Dichloroethane | 0.6 | 107-06-2 | | **2.6 J** | **36.9** | **37.5 J** | < 50 U | < 50 U | **30.2** | **22.1 J** | **1.1** | < 1.0 U | **1.1** | < 1.0 U | < 1.0 |
| 1,2-Dichloropropane | 1 | 78-87-5 | | < 4.0 U | **12.0 J** | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| 2-Butanone (MEK) | 50 | 78-93-3 | | < 40 U | < 250 U | < 500 U | < 500 U | < 500 U | < 250 U | < 250 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 |
| 4-Methyl-2-Pentanone | | 108-10-1 | | < 20 U | < 130 U | < 250 U | < 250 U | < 250 U | < 130 U | < 130 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 |
| Acetone | 50 | 67-64-1 | | < 40 U | < 250 U | < 500 U | < 500 U | < 500 U | < 250 U | < 250 U | < 10 U | < 10 U | < 10 U | < 10 U | < 10 |
| Benzene | 1 | 71-43-2 | | < 2.0 U | < 13 U | < 25 U | < 25 U | < 25 U | < 13 U | < 13 U | < 0.50 U | < 0.50 U | < 0.50 U | < 0.50 U | < 0.50 |
| Bromodichloromethane | 50 | 75-27-4 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Bromoform | 50 | 75-25-2 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Bromomethane | 5 | 74-83-9 | | < 8.0 U | < 50 U | < 100 U | < 100 U | < 100 U | < 50 U | < 50 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 |
| Carbon Disulfide | 60 | 75-15-0 | | < 8.0 U | < 50 U | < 100 U | < 100 U | < 100 U | < 50 U | < 50 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 |
| Carbon Tetrachloride | 5 | 56-23-5 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | **0.66 J** | < 1.0 U | < 1.0 |
| CFC-12 | 5 | 75-71-8 | | < 8.0 U | < 50 U | < 100 U | < 100 U | < 100 U | < 50 U | < 50 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 |
| Chlorobenzene | 5 | 108-90-7 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Chlorodibromomethane | 50 | 124-48-1 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Chlorodifluoromethane | 5 | 75-45-6 | | < 20 U | < 130 U | < 250 U | < 250 U | < 250 U | < 130 U | < 130 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 |
| Chloroethane | 5 | 75-00-3 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Chloroform | 7 | 67-66-3 | | **4.0** | **24.9 J** | **26.4 J** | < 50 U | < 50 U | **20.5 J** | < 25 U | **1.1** | **0.58 J** | **3.4** | < 1.0 U | < 1.0 |
| Chloromethane | 5 | 74-87-3 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 156-59-2 | | **363** | **935** | **956** | **1740** | **1820** | **887** | **1530** | **178** | **88.9** | **5.0** | **0.77 J** | **0.49 J** |
| cis-1,3-Dichloropropene | 0.4 | 10061-01-5 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Dichloromethane | 5 | 75-09-2 | | < 8.0 U | < 50 U | < 100 U | < 100 U | < 100 U | < 50 U | < 50 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 |
| Ethylbenzene | 5 | 100-41-4 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| m&p-Xylenes | 5 | ARC-mpXyl | | -- | < 25 U | < 50 U | -- | -- | < 25 U | -- | < 1.0 U | -- | < 1.0 U | < 1.0 U | < 1.0 |
| Methyl N-Butyl Ketone (2-Hexanone) | 50 | 591-78-6 | | < 20 U | < 130 U | < 250 U | < 250 U | < 250 U | < 130 U | < 130 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 |
| o-Xylene | 5 | 95-47-6 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Styrene (Monomer) | 5 | 100-42-5 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Tetrachloroethene | 5 | 127-18-4 | | **8.3** | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | **1.0** | **1.3** | < 1.0 U | **1.4** | **1.0** |
| Toluene | 5 | 108-88-3 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| trans-1,2-Dichloroethene | 5 | 156-60-5 | | **2.4 J** | < 25 U | < 50 U | < 50 U | < 50 U | **9.4 J** | < 25 U | **1.3** | **0.88 J** | < 1.0 U | < 1.0 U | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | 10061-02-6 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| Trichloroethene | 5 | 79-01-6 | | **885** | **11,200 D** | **11,500 D** | **9,460** | **8,980** | **6,020 D** | **4,980** | **242** | **143** | **12.7** | **97.0** | **37.0** |
| Vinyl chloride | 2 | 75-01-4 | | < 4.0 U | < 25 U | < 50 U | < 50 U | < 50 U | < 25 U | < 25 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 |
| **Total VOCs** | | | | 1,280 | 12,274 | 12,577 | 11,292 | 10898 | 7,005 | 6,592 | 432 | 238 | 27.5 | 100.5 | 38.5 |
| 1,4-Dioxane | | 123-91-1 | | **27** | **190** | **163** | **220** | **210** | < 151 UB | **150** | **8.29** | **2.3** | **9.04** | **6.9** | **4.20** |
| **Metals** | | | | | | | | | | | | | | | |
| Iron (Dissolved) | 300 | 7439-89-6 | | < 100 U | < 100 U | -- | < 100 U | < 100 U | -- | **350** | < 100 U | < 100 U | -- | < 100 U | -- |
| Iron (Total) | 300 | 7439-89-6 | | **459** | **120** | -- | **116** | **124** | -- | **796** | **325** | **182** | -- | **385** | -- |

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**Table 3**
**RW-21 Area Groundwater Sample Analytical Results Results**
**Operable Unit 3.5 RW-21**
**Northrop Grumman,**
**Bethpage, New York**

| Constituent (units in ug/L) | NYSDEC Class GA GW Criteria | CAS RN | Location ID: | RW-21_MW-5-2 | RW-21_MW-6 | RW-21_MW-6 | RW-21_MW-7 | RW-21_MW-7 | RW-21_MW-8 | RW-21_MW-8 | RW-21_MW-9 | RW-21_MW-9 | RW-21_MW-11 | RW-21_MW-11 | RW-21_MW-12-1 | RW-21_MW-12-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID: | RW-21_MW-5-2 | RW-21_MW-6 | RW-21_MW-6 | RW-21_MW-7 | RW-21_MW-7 | RW-21_MW-8 | RW-21_MW-8 | RW-21_MW-9 | RW-21_MW-9 | RW-21_MW-11 | RW-21_MW-11 | RW-21_MW-12-1 | RW-21_MW-12-1 |
| | | | Date: | 3/21/2022 | 12/14/2016 | 3/18/2022 | 12/13/2016 | 3/18/2022 | 12/8/2016 | 3/25/2022 | 12/13/2016 | 3/28/2022 | 12/12/2016 | 3/28/2022 | 12/8/2016 | 5/5/2022 |
| 1,1,1-Trichloroethane | 5 | 71-55-6 | | < 1.0 | **1.6 J** | < 20 | < 50 | < 20 | **2.6** | **1.1** | **1.6** | < 5.0 U | < 5.0 U | < 25 U | 3.1 | 1.3 |
| 1,1,2,2-Tetrachloroethane | 5 | 79-34-5 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 5 | 76-13-1 | | < 5.0 | < 25 | < 100 | < 250 | < 100 | < 5.0 U | < 5.0 U | < 5.0 U | < 25 U | < 25 U | < 130 U | < 5.0 | < 5.0 |
| 1,1,2-Trichloroethane | 1 | 79-00-5 | | < 1.0 | **1.9 J** | < 20 | < 50 | < 20 | **0.37 J** | < 1.0 U | **0.60 J** | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 5 | 75-34-3 | | **3.5** | **6.5** | **12.3 J** | **17.0 J** | **22.8** | **14.0** | **8.5** | **9.0** | **7.3** | **1.6 J** | < 25 U | **9.6** | 3.6 |
| 1,1-Dichloroethene | 5 | 75-35-4 | | **1.6** | **4.1 J** | **12.4 J** | **13.5 J** | **27.4** | **9.2** | **6.0** | **4.6** | **6.3** | **1.6 J** | < 25 U | 3.7 | 2.0 |
| 1,2-Dichloroethane | 0.6 | 107-06-2 | | **0.67 J** | **10.4** | **20.2** | **34.5 J** | **29.3** | **5.4** | **2.3** | **3.9** | **6.4** | **4.7 J** | **15.5 J** | **1.8** | < 1.0 |
| 1,2-Dichloropropane | 1 | 78-87-5 | | < 1.0 | **1.7 J** | < 20 | < 50 | < 20 | **0.90 J** | < 1.0 U | < 1.0 U | < 5.0 U | **2.6 J** | < 25 U | < 1.0 | < 1.0 |
| 2-Butanone (MEK) | 50 | 78-93-3 | | < 10 | < 50 | < 200 | < 500 | < 200 | < 10 U | < 10 U | < 10 U | < 50 U | < 50 U | < 250 U | < 10 | < 10 |
| 4-Methyl-2-Pentanone | | 108-10-1 | | < 5.0 | < 25 | < 100 | < 250 | < 100 | < 5.0 U | < 5.0 U | < 5.0 U | < 25 U | < 25 U | < 130 U | < 5.0 | < 5.0 |
| Acetone | 50 | 67-64-1 | | < 10 | < 50 | < 200 | < 500 | < 200 | < 10 U | < 10 U | < 10 U | < 50 U | < 50 U | < 250 U | < 10 | < 10 |
| Benzene | 1 | 71-43-2 | | < 0.50 | < 2.5 | < 10 | < 25 | < 10 | < 0.50 U | < 0.50 U | < 0.50 U | < 2.5 U | < 2.5 U | < 13 U | < 0.50 | < 0.50 |
| Bromodichloromethane | 50 | 75-27-4 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Bromoform | 50 | 75-25-2 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Bromomethane | 5 | 74-83-9 | | < 2.0 | < 10 | < 40 | < 100 | < 40 | < 2.0 U | < 2.0 U | < 2.0 U | < 10 U | < 10 U | < 50 U | < 2.0 | < 2.0 |
| Carbon Disulfide | 60 | 75-15-0 | | < 2.0 | < 10 | < 40 | < 100 | < 40 | < 2.0 U | < 2.0 U | < 2.0 U | < 10 U | < 10 U | < 50 U | < 2.0 | < 2.0 |
| Carbon Tetrachloride | 5 | 56-23-5 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | **0.94 J** | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| CFC-12 | 5 | 75-71-8 | | < 2.0 | < 10 | < 40 | < 100 | < 40 | < 2.0 U | < 2.0 U | < 2.0 U | < 10 U | < 10 U | < 50 U | < 2.0 | < 2.0 |
| Chlorobenzene | 5 | 108-90-7 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Chlorodibromomethane | 50 | 124-48-1 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Chlorodifluoromethane | 5 | 75-45-6 | | < 5.0 | < 25 | < 100 | < 250 | < 100 | < 5.0 U | < 5.0 U | < 5.0 U | < 25 U | < 25 U | < 130 U | < 5.0 | < 5.0 |
| Chloroethane | 5 | 75-00-3 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Chloroform | 7 | 67-66-3 | | **1.8** | **12.1** | **12.5 J** | **25.8 J** | **21.1** | **3.3** | **1.6** | **11.1** | **9.6** | **5.6** | **14.6 J** | **1.0** | < 1.0 |
| Chloromethane | 5 | 74-87-3 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| cis-1,2-Dichloroethene | 5 | 156-59-2 | | **7.0** | **308** | **839** | **601** | **1,200** | **283** | **235** | **83.5** | **251** | **95.3** | **342** | **16.9** | **5.4** |
| cis-1,3-Dichloropropene | 0.4 | 10061-01-5 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Dichloromethane | 5 | 75-09-2 | | < 2.0 | < 10 | < 40 | < 100 | < 40 | < 2.0 U | < 2.0 U | < 2.0 U | < 10 U | < 10 U | < 50 U | < 2.0 | < 2.0 |
| Ethylbenzene | 5 | 100-41-4 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| m&p-Xylenes | 5 | ARC-mpXyl | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | -- | < 1.0 U | -- | < 5.0 U | -- | < 1.0 | < 1.0 |
| Methyl N-Butyl Ketone (2-Hexanone) | 50 | 591-78-6 | | < 5.0 | < 25 | < 100 | < 250 | < 100 | < 5.0 U | < 5.0 U | < 5.0 U | < 25 U | < 25 U | < 130 U | < 5.0 | < 5.0 |
| o-Xylene | 5 | 95-47-6 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Styrene (Monomer) | 5 | 100-42-5 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Tetrachloroethene | 5 | 127-18-4 | | < 1.0 | **2.0 J** | < 20 | < 50 | < 20 | **0.39 J** | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Toluene | 5 | 108-88-3 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | **0.90 J** | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| trans-1,2-Dichloroethene | 5 | 156-60-5 | | < 1.0 | **5.2** | < 20 | < 50 | < 20 | **1.7** | **1.2** | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 0.4 | 10061-02-6 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| Trichloroethene | 5 | 79-01-6 | | **15.6** | **1,060** | **3,320** | **7,960** | **6,040** | **451** | **348** | **206** | **830** | **1,790** | **4,980** | **81.2** | **73.8** |
| Vinyl chloride | 2 | 75-01-4 | | < 1.0 | < 5.0 | < 20 | < 50 | < 20 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 25 U | < 1.0 | < 1.0 |
| **Total VOCs** | | | | 30.2 | 1,413.5 | 4,216 | 8,6512 | 7,341 | 773 | 605 | 320 | 1,111 | 1,901 | 5,352 | 117.3 | 86.1 |
| 1,4-Dioxane | | 123-91-1 | | **4.4** | **21.3** | **64** | **154** | **88** | **24.9** | **13** | **10.8** | **23** | **21.1** | **110** | **10.5** | **1.6** |
| **Metals** | | | | | | | | | | | | | | | | |
| Iron (Dissolved) | 300 | 7439-89-6 | | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 U | < 100 U | < 100 U | < 100 U | < 100 U | < 100 U | -- | < 100 |
| Iron (Total) | 300 | 7439-89-6 | | < 100 | **1,040** | < 100 | **260** | < 100 | **244** | **415** | **633** | **324** | **392** | **789** | -- | **2,000** |

Footnotes on last page

**Table 3**
**RW-21 Area Groundwater Sample Analytical Results Results**
**Operable Unit 3.5 RW-21**
**Northrop Grumman,**
**Bethpage, New York**

| Constituent (units in ug/L) | NYSDEC Class GA GW Criteria | CAS RN | Location ID: | RW-21_MW-12-2 | RW-21_MW-12-2 | RW-21_MW-13 | RW-21_MW-13 | RW-21_MW-14 | RW-21_MW-14 | RW-21_MW-15 | RW-21_MW-15 | RW-21_MW-16 | RW-21_MW-16 | RW-20 | RW-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID: | RW-21_MW-12-2 | RW-21_MW-12-2 | RW-21_MW-13 | RW-21_MW-13 | RW-21_MW-14 | RW-21_MW-14 | RW-21_MW-15 | RW-21_MW-15 | RW-21_MW-16 | RW-21_MW-16 | RW-20 | RW20 Pumping Sample |
| | | | Date: | 12/8/2016 | 5/5/2022 | 12/12/2016 | 3/22/2022 | 12/6/2016 | 3/23/2022 | 12/6/2016 | 3/22/2022 | 12/5/2016 | 3/23/2022 | 8/28/2017 | 3/31/2022 |
| 1,1,1-Trichloroethane | 5 | 71-55-6 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **0.36 J** | < 1.0 | < 1.0 | < 20 | **0.57 J** | < 10 | < 10 U | **2.7** |
| 1,1,2,2-Tetrachloroethane | 5 | 79-34-5 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 5 | 76-13-1 | | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 100 | < 5.0 | < 50 | < 50 U | < 1.0 U |
| 1,1,2-Trichloroethane | 1 | 79-00-5 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **0.35 J** | < 1.0 | < 1.0 | < 20 | **1.3** | < 10 | < 10 U | **2.7** |
| 1,1-Dichloroethane | 5 | 75-34-3 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **0.96 J** | < 1.0 | **0.23 J** | < 20 | **2.0** | < 10 | **10.1** | **13** |
| 1,1-Dichloroethene | 5 | 75-35-4 | | < 1.0 | < 1.0 | < 1.0 | **0.61 J** | **0.92 J** | < 1.0 | < 1.0 | < 20 | **2.0** | < 10 | **7.7 J** | **13** |
| 1,2-Dichloroethane | 0.6 | 107-06-2 | | < 1.0 | < 1.0 | **0.50 J** | **0.85 J** | **1.4** | < 1.0 | **0.71 J** | < 20 | **6.3** | **10** | **17.1** | **14** |
| 1,2-Dichloropropane | 1 | 78-87-5 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **0.49 J** | < 1.0 | < 1.0 | < 20 | **1.3** | < 10 | < 10 U | **4.8** |
| 2-Butanone (MEK) | 50 | 78-93-3 | | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 200 | < 10 | < 100 | < 100 U | < 5.0 U |
| 4-Methyl-2-Pentanone | | 108-10-1 | | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 100 | < 5.0 | < 50 | < 50 U | < 5.0 U |
| Acetone | 50 | 67-64-1 | | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 200 | < 10 | < 100 | < 100 U | < 5.0 U |
| Benzene | 1 | 71-43-2 | | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 10 | < 0.50 | < 5.0 | < 5.0 U | < 1.0 U |
| Bromodichloromethane | 50 | 75-27-4 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Bromoform | 50 | 75-25-2 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Bromomethane | 5 | 74-83-9 | | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 2.0 | < 20 | < 20 U | < 1.0 U |
| Carbon Disulfide | 60 | 75-15-0 | | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 2.0 | < 20 | < 20 U | < 1.0 U |
| Carbon Tetrachloride | 5 | 56-23-5 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | **1.5** |
| CFC-12 | 5 | 75-71-8 | | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 2.0 | < 20 | < 20 U | < 1.0 U |
| Chlorobenzene | 5 | 108-90-7 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Chlorodibromomethane | 50 | 124-48-1 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Chlorodifluoromethane | 5 | 75-45-6 | | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 100 | < 5.0 | < 50 | < 50 U | -- |
| Chloroethane | 5 | 75-00-3 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Chloroform | 7 | 67-66-3 | | < 1.0 | < 1.0 | **2.2** | **0.98 J** | **1.2** | < 1.0 | **1.9** | **11.8 J** | **17.4** | **11.4** | **17.9** | **12** |
| Chloromethane | 5 | 74-87-3 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| cis-1,2-Dichloroethene | 5 | 156-59-2 | | < 1.0 | < 1.0 | **10.1** | **25.0** | **20.7** | **0.71 J** | **16.6** | **217** | **123** | **226** | **336** | **360** |
| cis-1,3-Dichloropropene | 0.4 | 10061-01-5 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Dichloromethane | 5 | 75-09-2 | | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 2.0 | < 20 | < 20 U | < 1.0 U |
| Ethylbenzene | 5 | 100-41-4 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| m&p-Xylenes | 5 | ARC-mpXyl | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 50 | 591-78-6 | | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 100 | < 5.0 | < 50 | < 50 U | < 5.0 U |
| o-Xylene | 5 | 95-47-6 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Styrene (Monomer) | 5 | 100-42-5 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Tetrachloroethene | 5 | 127-18-4 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | **8.6** |
| Toluene | 5 | 108-88-3 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | **0.29 J** | < 10 | < 10 U | < 1.0 U |
| trans-1,2-Dichloroethene | 5 | 156-60-5 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | **0.69 J** | < 10 | < 10 U | **1.4** |
| trans-1,3-Dichloropropene | 0.4 | 10061-02-6 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | < 1.0 U |
| Trichloroethene | 5 | 79-01-6 | | **0.50 J** | < 1.0 | **16.9** | **296** | **423** | **53.4** | **42.3** | **2,670** | **593** | **1,260** | **2,830** | **3,000 D** |
| Vinyl chloride | 2 | 75-01-4 | | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 20 | < 1.0 | < 10 | < 10 U | **0.53 J** |
| **Total VOCs** | | | | 0.5 | 0.0 | 29.7 | 323 | 449 | 54.1 | 61.7 | 2,899 | 748 | 1,507 | 3,219 | 3,434 |
| 1,4-Dioxane | | 123-91-1 | | < 0.200 | < 0.20 | **1.17** | **5.8** | **14.6** | < 0.20 | **1.89** | **28** | **9.25 B** | **23** | **56.4** | **63** |
| **Metals** | | | | | | | | | | | | | | | |
| Iron (Dissolved) | 300 | 7439-89-6 | | -- | < 100 | < 100 | < 100 | < 100 | **144** | < 100 | < 100 | < 100 | **114** | **3,580** | -- |
| Iron (Total) | 300 | 7439-89-6 | | -- | **1,160** | **1,050** | **182** | **1,370** | **1,290** | **1,700** | **521** | **824** | **560** | **4,150** | -- |

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**Table 3**
**RW-21 Area Groundwater Sample Analytical Results Results**
**Operable Unit 3.5 RW-21**
**Northrop Grumman,**
**Bethpage, New York**

| Constituent (units in ug/L) | NYSDEC Class GA GW Criteria | CAS RN | Location ID: | RW-21 | RW-21 |
|---|---|---|---|---|---|
| | | | Sample ID: | RW-21 | RW21 Pumping Sample |
| | | | Date: | 8/29/2017 | 4/4/2022 |
| 1,1,1-Trichloroethane | 5 | 71-55-6 | | < 20 U | < 25 U |
| 1,1,2,2-Tetrachloroethane | 5 | 79-34-5 | | < 20 U | -- |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 5 | 76-13-1 | | < 100 U | -- |
| 1,1,2-Trichloroethane | 1 | 79-00-5 | | < 20 U | -- |
| 1,1-Dichloroethane | 5 | 75-34-3 | | **23.6** | **30** |
| 1,1-Dichloroethene | 5 | 75-35-4 | | **18.7 J** | **31** |
| 1,2-Dichloroethane | 0.6 | 107-06-2 | | **25.2** | **26** |
| 1,2-Dichloropropane | 1 | 78-87-5 | | < 20 U | -- |
| 2-Butanone (MEK) | 50 | 78-93-3 | | < 200 U | < 130 U |
| 4-Methyl-2-Pentanone | | 108-10-1 | | < 100 U | -- |
| Acetone | 50 | 67-64-1 | | < 200 U | < 130 U |
| Benzene | 1 | 71-43-2 | | < 10 U | < 25 U |
| Bromodichloromethane | 50 | 75-27-4 | | < 20 U | -- |
| Bromoform | 50 | 75-25-2 | | < 20 U | -- |
| Bromomethane | 5 | 74-83-9 | | < 40 U | -- |
| Carbon Disulfide | 60 | 75-15-0 | | < 40 U | -- |
| Carbon Tetrachloride | 5 | 56-23-5 | | < 20 U | < 25 U |
| CFC-12 | 5 | 75-71-8 | | < 40 U | -- |
| Chlorobenzene | 5 | 108-90-7 | | < 20 U | < 25 U |
| Chlorodibromomethane | 50 | 124-48-1 | | < 20 U | -- |
| Chlorodifluoromethane | 5 | 75-45-6 | | < 100 U | -- |
| Chloroethane | 5 | 75-00-3 | | < 20 U | -- |
| Chloroform | 7 | 67-66-3 | | **13.0 J** | **13 J** |
| Chloromethane | 5 | 74-87-3 | | < 20 U | -- |
| cis-1,2-Dichloroethene | 5 | 156-59-2 | | **929** | **1300** |
| cis-1,3-Dichloropropene | 0.4 | 10061-01-5 | | < 20 U | -- |
| Dichloromethane | 5 | 75-09-2 | | < 40 U | < 25 U |
| Ethylbenzene | 5 | 100-41-4 | | < 20 U | < 25 U |
| m&p-Xylenes | 5 | ARC-mpXyl | | < 20 U | < 25 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 50 | 591-78-6 | | < 100 U | -- |
| o-Xylene | 5 | 95-47-6 | | < 20 U | < 25 U |
| Styrene (Monomer) | 5 | 100-42-5 | | < 20 U | -- |
| Tetrachloroethene | 5 | 127-18-4 | | < 20 U | **12 J** |
| Toluene | 5 | 108-88-3 | | < 20 U | < 25 U |
| trans-1,2-Dichloroethene | 5 | 156-60-5 | | **9.3 J** | < 25 U |
| trans-1,3-Dichloropropene | 0.4 | 10061-02-6 | | < 20 U | -- |
| Trichloroethene | 5 | 79-01-6 | | **7,580** | **7,100** |
| Vinyl chloride | 2 | 75-01-4 | | < 20 U | < 25 U |
| **Total VOCs** | | | | 8,599 | 8,512 |
| 1,4-Dioxane | | 123-91-1 | | **125** | **110 *1** |
| **Metals** | | | | | |
| Iron (Dissolved) | 300 | 7439-89-6 | | **3,840** | -- |
| Iron (Total) | 300 | 7439-89-6 | | **3,750** | -- |

Footnotes on last page

**Table 3**
**RW-21 Area Groundwater Sample Analytical Results Results**
**Operable Unit 3.5 RW-21**
**Northrop Grumman,**
**Bethpage, New York**

**Notes and Abbreviations:**

| | |
|---|---|
| J | Value is estimated |
| B | Analyte was detected in the sample and associated quality control blank(s) sample(s) |
| D | Result is reported at dilution |
| U | Indicates the analyte was analyzed for but not detected |
| **BOLD** | Compound detected |
| < number | Compound not detected above RL. |
| F1 | MS and/or MSD exceeds control recovery limit. |
| TVOC | Total Volatile Organic Compounds. |
| VOC | Volatile Organic Compound |
| ug/L | Micrograms per liter |
| **REP** | Blind Replicate |
| -- | Not Analyzed |

TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least numerical precision (decimal place), including whole numbers with no decimal place.

| | |
|---|---|
| NYSDEC | New York State Department of Environmental Conservation |
| USEPA | United States Environmental Protection Agency |

Analytical parameters for all wells will consist of VOCs by USEPA 8260C, 1,4-dioxane by USEPA 8270E SIM, total and dissolved iron by USEPA 6010C.

Bold value with box outline indicates compound detected at concentration exceeding applicable NYSDEC Class GA Groundwater Criteria.

Results concentrations are reported in ug/L

# Well Condition Survey Forms

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York** P. Gamlen

Well ID: MW-109-3 Date: 3/14/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 44.33'

Screen Setting: 233 - 243 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: yes - add hose clamps at tubing connection Date of Repair: 3/14/22

Dedicated Pump Yes ____ Bladder Pump ____ Packer: Yes ____
No X Rediflo Pump ____ No X
Submersible Pump ____

**Well Condition**

Concrete Pad Condition: NA - no pad.

Manhole Condition: poor - no ~~bolt~~ bolts, no eyebolts.

Sanitary seal (In place? Working?): no

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: 500 ml/min / 100 ml/min

Condition of control box and generator? Enough voltage?: good

Condition of well head fittings & quick connects?: good

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** NA

**Notes and Comments:**

- tubing condition is good.
- in Coronet crescent road way.
- 3/8" ID x ½" OD tubing

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: MW-111-4 Date: 3/14/2022 Inspected By: B. Wilt & ~~P. Quinlan~~ P. Quinlan.

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 40.62

Screen Setting: NA Casing / Screen Diameter (inches): 4

Any Repairs Performed?: cut v-notch for measuring point Date of Repair: 3/14/22

Dedicated Pump Yes ____ Bladder Pump X Packer: Yes ____
No X Rediflo Pump ____ No X
Submersible Pump ____

**Well Condition**

Concrete Pad Condition: Good

Manhole Condition: moderate - 1:2 bolts present / tighten.

Sanitary seal (In place? Working?): no

Well Cap Condition (In place? Type? Locking J-plug): in place, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: no - cut v-notch.

Excessive Material In Manhole?: yes

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: 500 ml/min / 100 ml/min

Condition of control box and generator? Enough voltage?: good

Condition of well head fittings & quick connects?: good

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** NA

**Notes and Comments:**

- 3/8" x 1/2" tubing present. top, 1/4" x 3/8" bottom tubing
- observe both HDPE & LDPE

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: MW-116-S Date: 3/15/22 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 37.15

Screen Setting: 570-590 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: No Date of Repair: _____

Dedicated Pump: Yes X Bladder Pump _____ Packer: Yes X
No _____ Rediflo Pump _____ No _____
Submersible Pump X

**Well Condition**

Concrete Pad Condition: NA

Manhole Condition: poor - rusting 3:3 bolts, 1:3 eyelets present / functional.

Sanitary seal (In place? Working?): not present

Well Cap Condition (In place? Type? Locking J-plug): in place, 3WV cap/ packer cap (roller style?)

Is lock present and functional?: not present

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: _____

Is pressure held properly? Lost of pressure during purging?: _____

Is water level steady during purging?: _____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: _____

Condition of control box? any leak? air exhaust?: _____

Normal Cycle? Get 350-450 mL per cycle?: _____

Is weepback observed?: _____

Fittings on well head? Any water / air leak?: _____

Pump pulled? Remote Screen Condition?: _____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: _____

Condition of control box and generator? Enough voltage?: _____

Condition of well head fittings & quick connects?: _____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** _____

**Notes and Comments:**

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: MW-117-S Date: 3/14/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 38.32

Screen Setting: 737-757 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: ~~None~~ remove rust material Date of Repair: ~~NA~~ 3/14/22 (BW)
cover outlet / plug with glove

Dedicated Pump Yes ✓ Bladder Pump ____ Packer: Yes ✓
No ____ Rediflo Pump ____ No ____
Submersible Pump ✓

**Well Condition**

Concrete Pad Condition: NA

Manhole Condition: 1:3 bolts present, 2:3 eyelets in working condition.

Sanitary seal (In place? Working?): no

Well Cap Condition (In place? Type? Locking J-plug): grundfos cap with stand pipe connection

Is lock present and functional?: no lock present

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: yes - wires

Standing water inside manhole?: no

✓ **Dedicated Packer**

Condition of fittings on well head? Any leak?: good, no leaks

Is pressure held properly? Lost of pressure during purging?: pressure holds

Is water level steady during purging?: yes

✓ **Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

✓ Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: 5-gpm / ~100 ml/min during sampling

Condition of control box and generator? Enough voltage?: good

Condition of well head fittings & quick connects?: good

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** NA

**Notes and Comments:**

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: MW-118-S Date: 4/25/22 Inspected By: Ben Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): NA

Screen Setting: 713-738 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: None Date of Repair: NA

Dedicated Pump: Yes X Bladder Pump ____ Packer: Yes X
No ____ Rediflo Pump ____ No ____
Submersible Pump X

**Well Condition**

Concrete Pad Condition: Good

Manhole Condition: poor - 2 of 3 bolts do not tighten

Sanitary seal (In place? Working?): in place, not functional

Well Cap Condition (In place? Type? Locking J-plug): latch cap, in place

Is lock present and functional?: not present

Measuring point/Well ID visible?: Yes

Excessive Material In Manhole?: Yes

Standing water inside manhole?: Yes

**Dedicated Packer**

Condition of fittings on well head? Any leak?: $N_2$ fitting broken; DTW port obstructed downhole

Is pressure held properly? Lost of pressure during purging?: Unable to inflate due to broken $N_2$ fitting.

Is water level steady during purging?: Well was not purged.

**Dedicated Pump**

Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: unknown

Condition of control box and generator? Enough voltage?: good

Condition of well head fittings & quick connects?: DTW port obstructed downhole, water fitting fractured.

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

- $N_2$ fitting is broken; unable to advance DTW probe past obstruction at approximately 4ft below measuring point.

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-1 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 42.05

Screen Setting: 615-625 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: add nipple to J-plug Date of Repair: 3/15/22

Dedicated Pump Yes ____ No X

Bladder Pump ____ Rediflo Pump ____ Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good - 2:2 Bolt tightened

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

- behind locked basin on central avenue,
1/2" x 5/8" LDPE tubing

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-2 Date: 3/14/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 37.66'

Screen Setting: 600 - 610 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: tighten tubing connector add zip tie to J-plug Date of Repair: 3/14/2022

Dedicated Pump: Yes ____ No X | Bladder Pump ____ | Rediflo Pump ____ | Submersible Pump ____ | Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: poor 0:2 bolts tighten, 2:2 eyelets broken

Sanitary seal (In place? Working?): yes, yes

Well Cap Condition (In place? Type? Locking J-plug): in place, J-plug

Is lock present and functional?: yes - 09276 key

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-3-1 Date: 3/14/22 Inspected By: B.Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 38.89'

Screen Setting: 556-566 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: add zipties to J-plug, tighten tubing connector Date of Repair: 3/14/22

Dedicated Pump Yes ___ No X Bladder Pump ___ Rediflo Pump ___ Submersible Pump ___ Packer: Yes ___ No X

**Well Condition**

Concrete Pad Condition: Good

Manhole Condition: moderate - 1:2 bolts tighten, 1:2 eyelets damaged.

Sanitary seal (In place? Working?): no

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug.

Is lock present and functional?: yes,

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: yes

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate:

Condition of control box and generator? Enough voltage?:

Condition of well head fittings & quick connects?:

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

3/8" x 1/2" HDPE tubing

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-3-2 Date: 3/14/22 Inspected By: B. Wilf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 38.96'

Screen Setting: 595-605 Casing / Screen Diameter (inches): 4"

Any Repairs Performed?: tighten connector, add zipties to J-plug Date of Repair: 3/14/22

Dedicated Pump Yes ___ No X Bladder Pump ___ Rediflo Pump ___ Submersible Pump ___ Packer: Yes ___ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: moderate - 1:2 bolt present.

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): in place, J-plug.

Is lock present and functional?: yes.

Measuring point/Well ID visible?: no - cut V-notch into PVC riser.

Excessive Material In Manhole?: yes

Standing water inside manhole?: yes

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate:

Condition of control box and generator? Enough voltage?:

Condition of well head fittings & quick connects?:

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

½" x 3/8" LDPE tubing top & bottom

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-4 Date: 3/14/21 Inspected By: B. Wolf & P. Quimby

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 42.01

Screen Setting: 369 - 384 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: add zip tie to J-plug Date of Repair: 3/14/22

Dedicated Pump: Yes ____ No X

Bladder Pump ____ Rediflo Pump ____ Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: 1:2 bolts in place / tighten, 1:2 eyelets broken.

Sanitary seal (in place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): in place, J-plug

Is lock present and functional?: in-place, not functional

Measuring point/Well ID visible?: yes

Excessive Material in Manhole?: no

Standing water inside manhole?: yes

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**

Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate:

Condition of control box and generator? Enough voltage?:

Condition of well head fittings & quick connects?:

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

1/2" x 5/8" LDPE tubing

- remote screen appears in good condition

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-5-1 Date: 3/14/22 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 37.57

Screen Setting: 300-310 Casing / Screen Diameter (inches): 2

Any Repairs Performed?: cut - v-notch Date of Repair: 3/14/22
replace hose clamp on remote screen, add zipties to J-plug

Dedicated Pump: Yes ____ No X

Bladder Pump ____ Rediflo Pump ____ Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tighten

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, not functional.

Measuring point/Well ID visible?: no - cut v-notch

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

1/2" x 5/8" tubing.

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-5-2 Date: 3/14/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 39.76

Screen Setting: 560 - 570 Casing / Screen Diameter (inches): 2

Any Repairs Performed?: replace hose clamp on remote screen; add zip tie & J-plug Date of Repair: 3/14/22

Dedicated Pump Yes ____ Bladder Pump ____ Packer: Yes ____
No X Rediflo Pump ____ No X
Submersible Pump ____

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: 2:2 bolts tighten

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

See RW-21 MW-5-1 details

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

1/2" x 5/8" tubing, sediment noted on tubing and remote screen, fine - very fine, pale white, subangular sand.

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-6 Date: 3/14/2022 Inspected By: B. Wilf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 36.89

Screen Setting: 604-624 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: add zipties to J-plug Date of Repair: 3/14/22

Dedicated Pump Yes ___ No X

Bladder Pump ___ Rediflo Pump ___ Submersible Pump ___

Packer: Yes ___ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tight

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, 09276

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ___

Is pressure held properly? Lost of pressure during purging?: ___

Is water level steady during purging?: ___

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ___

Condition of control box? any leak? air exhaust?: ___

Normal Cycle? Get 350-450 mL per cycle?: ___

Is weepback observed?: ___

Fittings on well head? Any water / air leak?: ___

Pump pulled? Remote Screen Condition?: ___

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ___

Condition of control box and generator? Enough voltage?: ___

Condition of well head fittings & quick connects?: ___

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ___

**Notes and Comments:**

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-7 Date: 3/15/2022 Inspected By: B. Wilt

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 39.48

Screen Setting: 580 - 590 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: replace J-plug current lock/ J-plug unable to close manhole cover * remove lock to make manhole secure Date of Repair: 3/15/22

Dedicated Pump Yes ____ No X

Bladder Pump ____ Rediflo Pump ____ Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tighten

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate:

Condition of control box and generator? Enough voltage?:

Condition of well head fittings & quick connects?:

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

1/4" x 3/8" HDPE dip tube.

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-8 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NM Measured Depth to Water (ft bmp): 41.65'

Screen Setting: 460 - 470 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: none Date of Repair: NA

Dedicated Pump: Yes ____ No X

Bladder Pump ____
Rediflo Pump ____
Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good - moderately overgrown.

Manhole Condition: * stick up pipe.

Sanitary seal (In place? Working?): NA

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, functional.

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**

Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate:

Condition of control box and generator? Enough voltage?:

Condition of well head fittings & quick connects?:

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

* no tubing * will come back to reinstall.

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-9 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): ~~630-6~~ NA Measured Depth to Water (ft bmp): 35.91

Screen Setting: 630 - 640 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: cut v-notch for measuring point. Date of Repair: 3/15/22

Dedicated Pump Yes ____ No X

Bladder Pump ____
Rediflo Pump ____
Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tighten.

Sanitary seal (in place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, functional - 09276

Measuring point/Well ID visible?: no - cut V-notch

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate:

Condition of control box and generator? Enough voltage?:

Condition of well head fittings & quick connects?:

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

1/2" x 5/8" LDPE tubing

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-11 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NM Measured Depth to Water (ft bmp): 38.66'

Screen Setting: 638-648 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: None Date of Repair: N/A

Dedicated Pump: Yes ____ No X

Bladder Pump ____
Rediflo Pump ____
Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tightened

Sanitary seal (In place? Working?): in place, working

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

1/4" x 3/8" HDPE drop tube, 3/8" x 1/2" HDPE tubing bottom tube

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-12-1 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NM Measured Depth to Water (ft bmp): 18.79'

Screen Setting: 415-425 Casing / Screen Diameter (inches): 2

Any Repairs Performed?: _____ Date of Repair: _____

Dedicated Pump: Yes ____ Bladder Pump ____ Packer: Yes ____
No X Rediflo Pump ____ No X
Submersible Pump ____

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tighten

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: yes

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: _____

Is pressure held properly? Lost of pressure during purging?: _____

Is water level steady during purging?: _____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: _____

Condition of control box? any leak? air exhaust?: _____

Normal Cycle? Get 350-450 mL per cycle?: _____

Is weepback observed?: _____

Fittings on well head? Any water / air leak?: _____

Pump pulled? Remote Screen Condition?: _____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: _____

Condition of control box and generator? Enough voltage?: _____

Condition of well head fittings & quick connects?: _____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** _____

**Notes and Comments:**

1/2" x 5/8" LDPE tbng

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-12-2 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NM Measured Depth to Water (ft bmp): 19.28

Screen Setting: 590 - 600 Casing / Screen Diameter (inches): 2

Any Repairs Performed?: _____ Date of Repair: _____

Dedicated Pump: Yes ____ Bladder Pump ____ Packer: Yes ____
No X Rediflo Pump ____ No X
Submersible Pump ____

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2½ bolts daylighting

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): good, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: yes

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: _____

Is pressure held properly? Lost of pressure during purging?: _____

Is water level steady during purging?: _____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: _____

Condition of control box? any leak? air exhaust?: _____

Normal Cycle? Get 350-450 mL per cycle?: _____

Is weepback observed?: _____

Fittings on well head? Any water / air leak?: _____

Pump pulled? Remote Screen Condition?: _____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: _____

Condition of control box and generator? Enough voltage?: _____

Condition of well head fittings & quick connects?: _____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** _____

**Notes and Comments:**

½" x 5/8" LDPE tubing

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-13 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NM Measured Depth to Water (ft bmp): 40.60'

Screen Setting: 716 - 726 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: None Date of Repair: N/A

Dedicated Pump: Yes ____ No X

Bladder Pump ____ Rediflo Pump ____ Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tighten

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): good, J-plug

Is lock present and functional?: (RW) present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: yes

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

1/2" x 5/8" LDPE

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21 MW-14 Date: 3/15/2022 Inspected By: B. Wolf

Measured Total Depth (ft bmp): NM Measured Depth to Water (ft bmp): 31.74'

Screen Setting: 630 – 640 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: ~~cut v-notch~~ make shorter marking for measuring point Date of Repair: 3/15/22

Dedicated Pump: Yes ____ No X

Bladder Pump ____
Rediflo Pump ____
Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts tighten

Sanitary seal (In place? Working?): yes

Well Cap Condition (In place? Type? Locking J-plug): yes, Jplug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: no, cut v-notch

Excessive Material In Manhole?: no

Standing water inside manhole?: yes

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**
Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

1/2" x 5/8" LDPE tubing

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21_MW-16 Date: 3/23/22 Inspected By: Ben Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 35.72

Screen Setting: 636-646 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: None Date of Repair: NA

Dedicated Pump: Yes ____ No X

Bladder Pump ____ Rediflo Pump ____ Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good 2-2 (BW)

Manhole Condition: good - ~~3-3~~ bolts tighten

Sanitary seal (In place? Working?): yes, yes

Well Cap Condition (In place? Type? Locking J-plug): in place, J-plug

Is lock present and functional?: present, not functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?: ____

Is pressure held properly? Lost of pressure during purging?: ____

Is water level steady during purging?: ____

**Dedicated Pump**

Bladder Pump:

Is compressor working properly? Proper pressure?: ____

Condition of control box? any leak? air exhaust?: ____

Normal Cycle? Get 350-450 mL per cycle?: ____

Is weepback observed?: ____

Fittings on well head? Any water / air leak?: ____

Pump pulled? Remote Screen Condition?: ____

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate: ____

Condition of control box and generator? Enough voltage?: ____

Condition of well head fittings & quick connects?: ____

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:** ____

**Notes and Comments:**

LDPE tubing ½" ID x ⅝" OD

**ARCADIS**
**Well Inspection Form**
**Northrop Grumman Systems Corporation, Bethpage, New York**

Well ID: RW-21_MW-15 Date: 3/22/22 Inspected By: Ben Wolf

Measured Total Depth (ft bmp): NA Measured Depth to Water (ft bmp): 40.28

Screen Setting: 676 - 686 Casing / Screen Diameter (inches): 4

Any Repairs Performed?: None Date of Repair: NA

Dedicated Pump: Yes ____ No X

Bladder Pump ____ Rediflo Pump ____ Submersible Pump ____

Packer: Yes ____ No X

**Well Condition**

Concrete Pad Condition: good

Manhole Condition: good 2:2 bolts in place / tighten

Sanitary seal (In place? Working?): yes, yes

Well Cap Condition (In place? Type? Locking J-plug): in place, J-plug.

Is lock present and functional?: present, functional

Measuring point/Well ID visible?: yes

Excessive Material In Manhole?: no

Standing water inside manhole?: no

**Dedicated Packer**

Condition of fittings on well head? Any leak?:

Is pressure held properly? Lost of pressure during purging?:

Is water level steady during purging?:

**Dedicated Pump**

Bladder Pump:

Is compressor working properly? Proper pressure?:

Condition of control box? any leak? air exhaust?:

Normal Cycle? Get 350-450 mL per cycle?:

Is weepback observed?:

Fittings on well head? Any water / air leak?:

Pump pulled? Remote Screen Condition?:

Rediflo Pump / Submersible Pump:

Approximate high/low flow rate:

Condition of control box and generator? Enough voltage?:

Condition of well head fittings & quick connects?:

**Anomalous Field Parameters during Purging (e.g., pH, turbidity)?:**

**Notes and Comments:**

LDPE tubing ½" ID x 5/8" OD