ARCADIS Design & Consultancy for natural and built assets

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ENVIRONMENT

Subject:
Fourth Quarter 2017 Progress Report
Northrop Grumman Systems Corporation
Operable Unit 2, NYSDEC Site ID # 1-30-003A,
Bethpage, New York

Date:
January 10, 2018

Contact:
David E. Stern
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Our ref:
NY001496.22TM.LARA5

Dear Jason:

In accordance with Appendix "A", Section XIII of Administrative Order on Consent (AOC) Index # W1-118-14-12, this letter reports Operable Unit 2 (OU2) activities performed by Northrop Grumman Systems Corporation (Northrop Grumman) during the Fourth Quarter of 2017 (October through December 2017). Activities planned for First Quarter of 2018 (January through March 2018) are also described.

This progress report provides data that have been received as final and/or validated from the current period that are not included in other routine reporting for OU2 (e.g., quarterly reports as specified in the Groundwater Monitoring Plan).

As this is an ongoing remediation project, Northrop Grumman has transitioned the frequency of these progress reports from monthly to quarterly. Therefore, the next report will be submitted following the close of March 2018.

OU2 ACTIVITIES CONDUCTED DURING FOURTH QUARTER 2017

OU2 On-Site Containment (ONCT) System

- Continued Operation, Maintenance, and Monitoring (OM&M) of the OU2 ONCT system, including maintenance (scarification and sediment removal) of the South Basins (western-most basin)
- Completed Fourth Quarter 2017 ONCT system sampling
- Data not routinely reported are provided for the current period as follows:
    - Analytical data associated with Tower 96 Effluent and monthly sampling of ONCT Tower 96 system Remedial Wells 1 and 3R are provided in Table 1. Locations of wells are shown on Figure 1.

Regional Groundwater Monitoring & Outpost Well Monitoring

- Continued supplemental monthly VOC sampling of Monitoring Well GM-21D2 as Well 18 flow rate was adjusted from 800 gpm to approximately 600 gpm (design flow rate).
- Initiated supplemental (quarterly) VOC sampling at Monitoring Wells GM-33D2, GM-75D2 and GM-20D located just south of the ONCT remedial wells to monitor ONCT system hydraulic effectiveness during ONCT South Basins maintenance activities
- Initiated and completed Fourth Quarter 2017 routine OU2 groundwater monitoring activities
- Data not routinely reported are provided for the current period as follows:
    - Analytical data associated with Monitoring Well GM-21D2 sampling and sampling of Monitoring Wells GM-20D, GM-33D2 and GM-75D2 are provided in Table 1. Locations of wells are shown on Figure 1.
    - Analytical data associated with discharge samples for compliance with local POTW are also provided in Table 1
- Prepared and submitted Third Quarter 2017 sampling event data (Form 1 packages) to NYSDEC

Northrop Grumman Cooperation with Navy

- Coordinated with Navy and completed Fourth Quarter 2017 sampling of additional outpost wells and plume monitoring wells
- Prepared and submitted Third Quarter 2017 sampling event data for Navy owned wells, including Form 1 packages, to Navy for distribution
- Continued groundwater modeling support for design of Navy's IRM recovery well associated with the RE-108 off-site area

Other

- Prepared and submitted Third Quarter 2017 OU2 Operation Maintenance and Monitoring Report
- Prepared and submitted the October 2017 AOC quarterly progress report

OU2 ACTIVITIES SCHEDULED FOR FIRST QUARTER 2018

OU2 On-Site Containment (ONCT) System

- Continue OM&M of OU2 ONCT system, including preparation and performance of maintenance of South Basins (center-most and eastern-most basins), following the winter season and dependent on weather
- Conduct First Quarter 2018 ONCT system sampling

Regional Groundwater Monitoring & Outpost Well Monitoring

- Conduct First Quarter 2018 routine groundwater monitoring activities from Navy owned outpost wells now termed as plume monitoring wells (BPOW2-1, BPOW2-2 and BPOW2-3)
- Continue supplemental VOC sampling at Monitoring Well GM-21D2 and supplemental (quarterly) VOC sampling at Monitoring Wells GM-33D2, GM-75D2 and GM-20D

Northrop Grumman Cooperation with Navy

- Conduct First Quarter 2018 sampling of additional outpost wells
- Complete groundwater modeling support for design of Navy's IRM recovery well associated with the RE-108 off-site area

Other

- Submit the Fourth Quarter 2017 AOC quarterly progress report
- Submit the 2017 Annual OU2 Operation, Maintenance, and Monitoring Report

Sincerely,

Arcadis of New York, Inc.

David E. Stern
Senior Hydrogeologist/Associate Project Manager

Enclosures

Copies:
Krista Anders, NYSDOH
Patrick Foster, Esq., NYSDEC
Steven Scharf – NYSDEC
Donald Hesler, NYSDEC
Edward J. Hannon, Northrop Grumman
Jill Palmer, Esq., Northrop Grumman
Daniel Riesel, Esq., Sive, Paget & Riesel, P.C.
Mark A. Chertok, Esq., Sive, Paget & Riesel, P.C.
Lora Fly, NAVFAC Mid-Atlantic Environmental
Janet Steiniger, Bethpage Public Library (Public Repository)
Chris Engler, PE, Arcadis
Carlo San Giovanni, Arcadis
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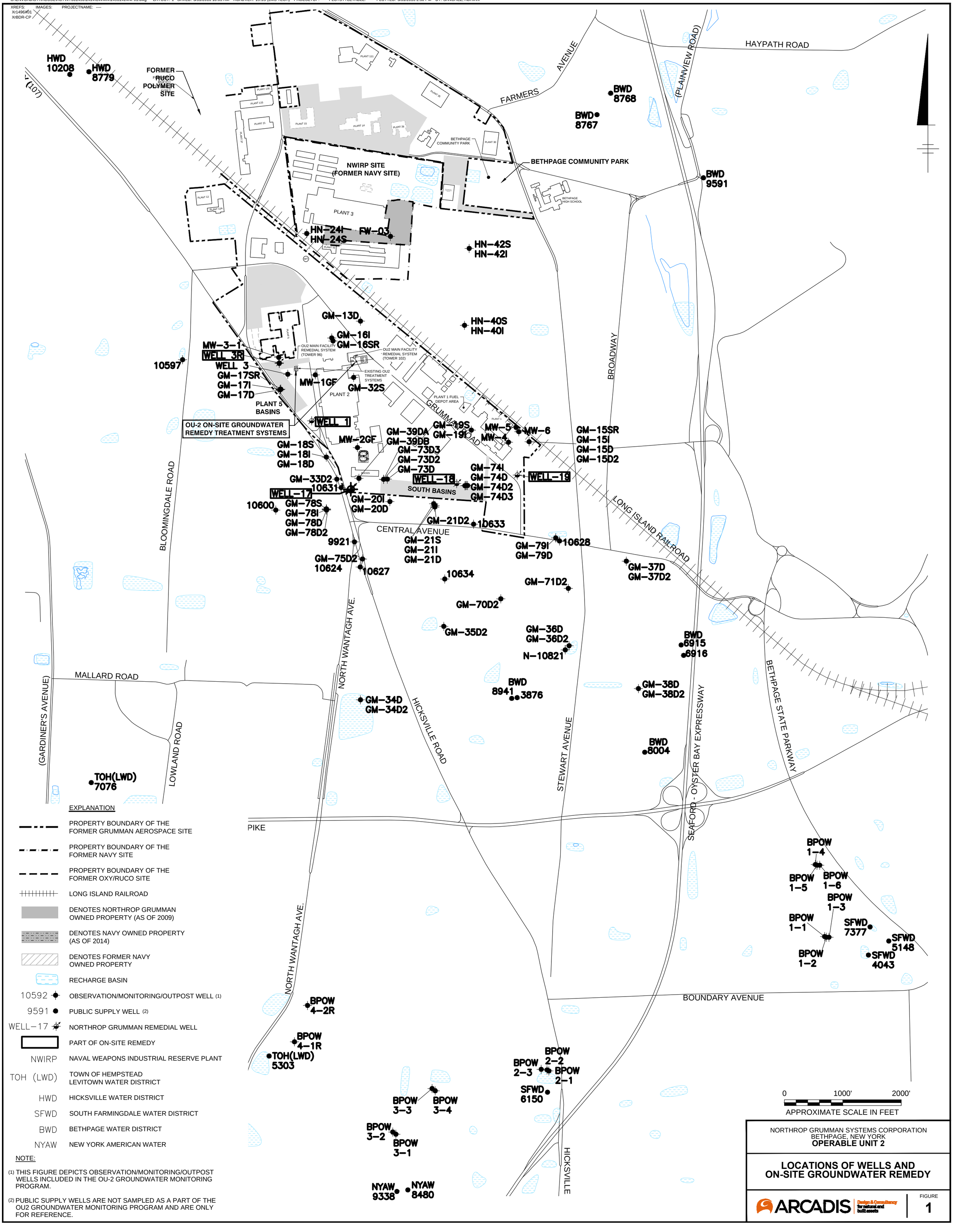
File, Arcadis



EXPLANATION

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER NAVY SITE
- PROPERTY BOUNDARY OF THE FORMER OXY/RUCO SITE
- LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2009)
- DENOTES NAVY OWNED PROPERTY (AS OF 2014)
- DENOTES FORMER NAVY OWNED PROPERTY
- RECHARGE BASIN
- 10592 OBSERVATION/MONITORING/OUTPOST WELL (1)
- 9591 PUBLIC SUPPLY WELL (2)
- WELL-17 NORTHROP GRUMMAN REMEDIAL WELL
- PART OF ON-SITE REMEDY
- NWIRP NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
- TOH (LWD) TOWN OF HEMPSTEAD LEVITOWN WATER DISTRICT
- HWD HICKSVILLE WATER DISTRICT
- SFWD SOUTH FARMINGDALE WATER DISTRICT
- BWD BETHPAGE WATER DISTRICT
- NYAW NEW YORK AMERICAN WATER

NOTE:

(1) THIS FIGURE DEPICTS OBSERVATION/MONITORING/OUTPOST WELLS INCLUDED IN THE OU-2 GROUNDWATER MONITORING PROGRAM.

(2) PUBLIC SUPPLY WELLS ARE NOT SAMPLED AS A PART OF THE OU2 GROUNDWATER MONITORING PROGRAM AND ARE ONLY FOR REFERENCE.

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

LOCATIONS OF WELLS AND ON-SITE GROUNDWATER REMEDY

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FIGURE 1

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	DISCHARGE[2] / DISCHARGE_091217 / 9/12/2017	GM-21D2 / GM-21D2_20170922 / 9/22/2017	QAQC / FB092217PP1 / 9/22/2017
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 2.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 5.0	< 10	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0	< 5.0
Acetone		< 5.0	< 10	< 10
Benzene		< 1.0	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 1.0	< 2.0	< 2.0
Carbon Disulfide		< 1.0	< 2.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0	< 1.0
CFC-11		< 2.0	--	--
CFC-12		< 2.0	--	--
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Dichloromethane		< 1.0	< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0	< 5.0
Methyl-tert-butylether		< 1.0	--	--
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 2.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	**3.7**	< 1.0
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethene		**0.29 J**	**16.7**	< 1.0
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs[3]		**0.3**	**20**	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	QAQC TB092217AR1 9/22/2017	GM-20D GM-20D_20171003 10/3/2017	GM-33D2 GM-33D2_20171003 10/3/2017
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 5.0	< 5.0	**4.5 J**
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0	< 1.0
CFC-11		--	--	--
CFC-12		--	--	--
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Dichloromethane		< 2.0	< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0	< 5.0
Methyl-tert-butylether		--	--	--
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	**3.3**
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethene		< 1.0	**0.60 J**	**13.1**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs[3]		0	**0.6**	**21**

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	GM-75D2 / GM-75D2_20171003 / 10/3/2017	QAQC / TB100317AR1_20171003 / 10/3/2017	96 EFFLUENT / T96 EFFLUENT_20171017 / 10/17/2017
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0	< 1.0
CFC-11		--	--	--
CFC-12		--	--	--
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Dichloromethane		< 2.0	< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0	< 5.0
Methyl-tert-butylether		--	--	--
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		**0.79 J**	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethene		**18.9**	< 1.0	< 1.0
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs[3]		**20**	0	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	WELL 1 WELL 1_20171017 10/17/2017	WELL 3R WELL 3R_20171017 10/17/2017	QAQC TB-101717-AR-1 10/17/2017
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		**0.32 J**	**0.73 J**	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**4.3 J**	**3.1 J**	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		**0.84 J**	**1.6**	< 1.0
1,1-Dichloroethene		**3.0**	**4.3**	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		**4.9**	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0	< 1.0
CFC-11		--	--	--
CFC-12		--	--	--
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		**0.40 J**	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		**5.7**	**4.4**	< 1.0
cis-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Dichloromethane		< 2.0	< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0	< 5.0
Methyl-tert-butylether		--	--	--
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		**22.7**	**27.5**	< 1.0
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethene		**629**	**373**	< 1.0
Vinyl chloride		< 1.0	**2.6**	< 1.0
Total VOCs[3]		**670**	**420**	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	DISCHARGE[2] / DISCHARGE_111017 / 11/10/2017	GM-21D2 / GM-21D2_20171116 / 11/16/2017	QAQC / FB111617DC1 / 11/16/2017
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 2.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 5.0	< 10	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0	< 5.0
Acetone		< 5.0	< 10	< 10
Benzene		< 1.0	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 1.0	< 2.0	< 2.0
Carbon Disulfide		< 1.0	< 2.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0	< 1.0
CFC-11		< 2.0	--	--
CFC-12		< 2.0	--	--
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Dichloromethane		< 1.0	< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0	< 5.0
Methyl-tert-butylether		< 1.0	--	--
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 2.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	**4.0**	< 1.0
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethene		< 1.0	**16.8**	< 1.0
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs[3]		0	**21**	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	QAQC TB111617AD1 11/16/2017	96 EFFLUENT 96 EFFLUENT (GW)_2017112 11/21/2017	WELL 1 WELL 1_20171121 11/21/2017
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		< 1.0	< 1.0	**0.32 J**
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 5.0	< 5.0	**4.5 J**
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	**0.76 J**
1,1-Dichloroethene		< 1.0	< 1.0	**2.7**
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	**4.9**
2-Butanone (MEK)		< 10	< 10	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0	< 1.0
CFC-11		--	--	--
CFC-12		--	--	--
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	**0.43 J**
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		< 1.0	< 1.0	**5.6**
cis-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Dichloromethane		< 2.0	< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0	< 5.0
Methyl-tert-butylether		--	--	--
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	**26.2**
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethene		< 1.0	< 1.0	**629**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs[3]		0	0	**670**

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	WELL 3R / WELL 3R_20171121 / 11/21/2017	QAQC / TB-112117-AR-1 / 11/21/2017
Volatile Organic Compounds [1]			
1,1,1-Trichloroethane		**0.76 J**	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**3.8 J**	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0
1,1-Dichloroethane		**1.5**	< 1.0
1,1-Dichloroethene		**4.0**	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0
Acetone		< 10	< 10
Benzene		< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0
Bromoform		< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0
CFC-11		--	--
CFC-12		--	--
Chlorobenzene		< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0
Chloroform		< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0
cis-1,2-Dichloroethene		**4.3**	< 1.0
cis-1,3-Dichloropropene		< 1.0	< 1.0
Dichloromethane		< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0
Methyl-tert-butylether		--	--
o-Xylene		< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0
Tetrachloroethene		**33.1**	< 1.0
Toluene		< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0
Trichloroethene		**369**	< 1.0
Vinyl chloride		**2.5**	< 1.0
Total VOCs[3]		**420**	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Notes and Abbreviations:

(1) Sample analysis by VOC Method 8260C unless otherwise noted.

(2) Sample analysis by VOC Method 624

(3) Results rounded to two significant figures.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016), or as received as final from the laboratory as of the end of the AOC reporting period.

Bold value indicates a detection

µg/L	Micrograms per liter
<1.0	Constituent not detected above its laboratory quantification limit.
OU2	Operable Unit 2
FB	Field Blank
J	Value is estimated concentration
QAQC	Quality Assurance/Quality Control sample
TB	Trip blank
VOC	Volatile Organic Compound
--	Not Analyzed