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ENVIRONMENT

Date:

April 11, 2016

Subject:

March 2016 Monthly Progress Report
Northrop Grumman Systems Corporation
Operable Unit 2, NYSDEC Site ID # 1-30-003A,
Bethpage, New York

Contact:

David E. Stern

Phone:

631.391.5284

Email:

david.stern@arcadis.com

Our ref:

NY001496.0114.LARA5

Dear Henry and Steve:

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 month of March 2016. Activities planned for April 2016 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).

Because this is an ongoing remediation project, Northrop Grumman proposes that future progress reports be submitted quarterly.

OU2 ACTIVITIES CONDUCTED DURING MARCH 2016

OU2 On-Site Containment (ONCT) System

- Continued Operation, Maintenance and Monitoring (OM&M) of the OU2 ONCT system
- Prepared and submitted the 2015 Annual Operation Maintenance and Monitoring Report, Operable Unit 2
- Completed First Quarter 2016 ONCT system sampling.

Regional Groundwater Monitoring & Outpost Well Monitoring

- Continued supplemental bi-weekly VOC sampling and monthly water level monitoring of Monitoring Well GM-21D2 and other selected wells, including ONCT Tower 102 system remedial wells
- Prepared and submitted the 2015 Annual Operation Maintenance and Monitoring Report, Operable Unit 2
- Data not routinely reported are provided for the current period as follows:
    - Analytical data for GM-21D2 and other selected wells, including ONCT system remedial wells and treated groundwater effluents are provided in Table 1.

Northrop Grumman Cooperation with Navy

- Completed First Quarter 2016 sampling of additional outpost wells installed by Navy as requested by Navy in May 6, 2015 communication

Other

- Prepared and submitted the February 2016 AOC monthly progress report

OU2 ACTIVITIES SCHEDULED FOR APRIL 2016

OU2 On-Site Containment (ONCT) System

- Continue OM&M of OU2 ONCT system

Regional Groundwater Monitoring & Outpost Well Monitoring

- Continue supplemental bi-weekly VOC sampling and monthly water levels of Monitoring Well GM-21D2 and other select wells, including ONCT system remedial wells

- Conduct Second Quarter 2016 Routine OU2 groundwater monitoring activities

Northrop Grumman Cooperation with Navy

- No activities planned

Other

- Submit the March 2016 AOC monthly progress report

Sincerely,

Arcadis of New York, Inc.

David E. Stern

Senior Hydrogeologist/Associate Project Manager

Enclosures

Copies:
Krista Anders, NYSDOH
Rosalie K. Rusinko, Esq., NYSDEC
Edward J. Hannon, Northrop Grumman
Fred Weber, 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 Midlant Environmental
Bethpage Public Library, Public Repository
Chris Engler, PE, Arcadis
Carlo San Giovanni, Arcadis
Mike Wolfert, Arcadis
File, Arcadis

Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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:	Trip Blank TB-012616-KV1 1/26/2016	WELL 17 WELL 17 1/26/2016	WELL 18 WELL 18 1/26/2016
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		<1.0	**0.39 J**	**0.66 J**
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		<5.0	**4.3 J**	**1.6 J**
1,1,2-Trichloroethane		<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	**1.0**	**1.2**
1,1-Dichloroethene		<1.0	**2.2**	**3.6**
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
Chlorobenzene		<1.0	<1.0	<1.0
Chlorodibromomethane		<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0
Chloroform		<1.0	**0.35 J**	<1.0
Chloromethane		<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		<1.0	**3.5**	**2.2**
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-Xylene		<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0	<5.0
o-Xylene		<1.0	<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	**30.0**	**15.0**
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	**156**	**52.3**
Vinyl chloride		<1.0	<1.0	<1.0
Total VOCs[2]		0	**200**	**77**

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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:	WELL 19 WELL 19 1/26/2016	Field Blank FB021116PP1 2/11/2016	Trip Blank TB-021516-KV-1 2/15/2016
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		**0.39 J**	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**0.89 J**	<5.0	<5.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0
1,1-Dichloroethane		**0.77 J**	<1.0	<1.0
1,1-Dichloroethene		**1.6**	<1.0	<1.0
1,2-Dichloroethane		**0.38 J**	<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
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		**18.0**	<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-Xylene		<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0	<5.0
o-Xylene		<1.0	<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0	<1.0
Tetrachloroethene		**7.6**	<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		**148**	<1.0	<1.0
Vinyl chloride		<1.0	<1.0	<1.0
Total VOCs[2]		**180**	0	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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:	WELL 17 WELL 17 2/15/2016	WELL 18 WELL 18 2/15/2016	WELL 19 WELL 19 2/15/2016
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		**0.41 J**	**0.69 J**	**0.40 J**
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**4.2 J**	**1.7 J**	**1.0 J**
1,1,2-Trichloroethane		<1.0	<1.0	<1.0
1,1-Dichloroethane		**1.0**	**1.3**	**0.77 J**
1,1-Dichloroethene		**2.2**	**3.8**	**1.6**
1,2-Dichloroethane		<1.0	<1.0	**0.38 J**
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
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**	**0.22 J**	**0.46 J**
Chloromethane		<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		**3.7**	**2.5**	**17.6**
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-Xylene		<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0	<5.0
o-Xylene		<1.0	<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0	<1.0
Tetrachloroethene		**29.5**	**14.8**	**7.4**
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		**162**	**54.3**	**156**
Vinyl chloride		<1.0	<1.0	<1.0
Total VOCs[2]		**200**	**79**	**190**

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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:	102 EFFLUENT T102 EFFLUENT 2/22/2016	96 EFFLUENT T96 EFFLUENT 2/22/2016	Trip Blank TB-022216-KV-1 2/22/2016
Volatile Organic Compounds [1]			
1,1,1-Trichloroethane	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<0.50	<0.50	<0.50
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	<2.0	<2.0	<2.0
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	<5.0	<5.0	<5.0
Carbon Tetrachloride	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0
Chlorodibromomethane	<1.0	<1.0	<1.0
Chloroethane	<2.0	<2.0	<2.0
Chloroform	<1.0	<1.0	<1.0
Chloromethane	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<0.50	<0.50	<0.50
Dichloromethane	<2.0	<2.0	<2.0
Ethylbenzene	<1.0	<1.0	<1.0
m,p-Xylene	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	<10	<10	<10
o-Xylene	<1.0	<1.0	<1.0
Styrene (Monomer)	<5.0	<5.0	<5.0
Tetrachloroethene	<1.0	<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	<0.50	<0.50	<0.50
Trichloroethene	<1.0	**3.0**	<1.0
Vinyl chloride	<1.0	<1.0	<1.0
Total VOCs[2]	0	**3.0**	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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:	WELL 1 WELL 1 2/22/2016	WELL 3R WELL 3R 2/22/2016	GM-21D2 GM-21D2 2/26/2016
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		<2.0	**0.90 J**	**2.4**
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**4.0 J**	**4.7 J**	**3.5 J**
1,1,2-Trichloroethane		<2.0	<2.0	**0.27 J**
1,1-Dichloroethane		**0.76 J**	**1.5 J**	**8.5**
1,1-Dichloroethene		**2.9**	**5.2**	**18.5**
1,2-Dichloroethane		<2.0	<2.0	**0.64 J**
1,2-Dichloropropane		<4.0	<4.0	<1.0
2-Butanone (MEK)		**10.4 J**	<20	<10
4-Methyl-2-Pentanone		<10	<10	<5.0
Acetone		<20	<20	<10
Benzene		<1.0	<1.0	<0.50
Bromodichloromethane		<2.0	<2.0	<1.0
Bromoform		<2.0	<2.0	<1.0
Bromomethane		<4.0	<4.0	<2.0
Carbon Disulfide		<10	<10	<2.0
Carbon Tetrachloride		<2.0	<2.0	<1.0
Chlorobenzene		<2.0	<2.0	<1.0
Chlorodibromomethane		<2.0	<2.0	<1.0
Chloroethane		<4.0	<4.0	<1.0
Chloroform		<2.0	<2.0	**0.54 J**
Chloromethane		<4.0	<4.0	<1.0
cis-1,2-Dichloroethene		**4.9**	**5.7**	**24.7**
cis-1,3-Dichloropropene		<1.0	<1.0	<1.0
Dichloromethane		<4.0	<4.0	<2.0
Ethylbenzene		<2.0	<2.0	<1.0
m,p-Xylene		<2.0	<2.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<20	<20	<5.0
o-Xylene		<2.0	<2.0	<1.0
Styrene (Monomer)		<10	<10	<1.0
Tetrachloroethene		**33.6**	**38.8**	**10.2**
Toluene		<2.0	<2.0	<1.0
trans-1,2-Dichloroethene		<2.0	<2.0	<1.0
trans-1,3-Dichloropropene		<1.0	<1.0	<1.0
Trichloroethene		**727**	**551**	**144**
Vinyl chloride		<2.0	**10**	<1.0
Total VOCs[2]		**780**	**620**	**210**

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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-21D2 REP022616AM1 2/26/2016	Field Blank FB022616AM1 2/26/2016	Trip Blank TB022616AM1 2/26/2016
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		**2.0**	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**2.9 J**	<5.0	<5.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0
1,1-Dichloroethane		**7.0**	<1.0	<1.0
1,1-Dichloroethene		**15.6**	<1.0	<1.0
1,2-Dichloroethane		**0.50 J**	<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
Chlorobenzene		<1.0	<1.0	<1.0
Chlorodibromomethane		<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0
Chloroform		**0.41 J**	<1.0	<1.0
Chloromethane		<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		**20.2**	<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-Xylene		<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0	<5.0
o-Xylene		<1.0	<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0	<1.0
Tetrachloroethene		**8.8**	<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		**119**	<1.0	<1.0
Vinyl chloride		<1.0	<1.0	<1.0
Total VOCs[2]		**180**	0	0

Notes and Abbreviations on last page.

Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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-73D2 GM-73D2 2/29/2016	GM-74D2 GM-74D2 2/29/2016	Trip Blank TB022916AM1 2/29/2016
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	**0.74 J**	<5.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0
1,1-Dichloroethane		**0.33 J**	**0.45 J**	<1.0
1,1-Dichloroethene		<1.0	**0.75 J**	<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
Chlorobenzene		<1.0	<1.0	<1.0
Chlorodibromomethane		<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0
Chloroform		<1.0	**0.22 J**	<1.0
Chloromethane		<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		**0.40 J**	<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-Xylene		<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0	<5.0
o-Xylene		<1.0	<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0	<1.0
Tetrachloroethene		**1.4**	**3.4**	<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		**29.0**	**6.6**	<1.0
Vinyl chloride		<1.0	<1.0	<1.0
Total VOCs[2]		**31**	**12**	0

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Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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:	102 EFFLUENT T102 EFFLUENT 3/1/2016	Trip Blank TB-030116-KD-1 3/1/2016	WELL 17 WELL 17 3/1/2016
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		<1.0	<1.0	**0.35 J**
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		<5.0	<5.0	**3.8 J**
1,1,2-Trichloroethane		<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	<1.0	**0.93 J**
1,1-Dichloroethene		<1.0	<1.0	**2.0**
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
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	**0.33 J**
Chloromethane		<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		<1.0	<1.0	**3.4**
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-Xylene		<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0	<5.0
o-Xylene		<1.0	<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	<1.0	**27.5**
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	**152**
Vinyl chloride		<1.0	<1.0	<1.0
Total VOCs[2]		0	0	**190**

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Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

Constituents (units in µg/L)	Well ID: Sample ID: Sample Date:	WELL 18 WELL 18 3/1/2016	WELL 19 WELL 19 3/1/2016	GM-21D2 GM-21D2 3/11/2016
Volatile Organic Compounds [1]				
1,1,1-Trichloroethane		**0.55 J**	**0.35 J**	**2.4**
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**1.4 J**	**0.91 J**	**3.9 J**
1,1,2-Trichloroethane		<1.0	<1.0	**0.31 J**
1,1-Dichloroethane		**1.2**	**0.66 J**	**8.5**
1,1-Dichloroethene		**3.1**	**1.2**	**18.3**
1,2-Dichloroethane		<1.0	<1.0	**0.66 J**
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
Chlorobenzene		<1.0	<1.0	<1.0
Chlorodibromomethane		<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0
Chloroform		<1.0	**0.37 J**	**0.56 J**
Chloromethane		<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		**2.4**	**16.5**	**23.5**
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-Xylene		<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0	<5.0
o-Xylene		<1.0	<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0	<1.0
Tetrachloroethene		**13.8**	**6.9**	**10.5**
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		**52.4**	**145**	**151**
Vinyl chloride		<1.0	<1.0	<1.0
Total VOCs[2]		**75**	**170**	**220**

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Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
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:	Field Blank FB031116MO1 3/11/2016	Trip Blank TB031116MO1 3/11/2016	GM-73D2 GM-73D2 3/14/2016
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	**0.35 J**
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
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	**0.21 J**
Chloromethane	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	**0.67 J**
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-Xylene	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	<5.0	<5.0	<5.0
o-Xylene	<1.0	<1.0	<1.0
Styrene (Monomer)	<1.0	<1.0	<1.0
Tetrachloroethene	<1.0	<1.0	**1.7**
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	**32.3**
Vinyl chloride	<1.0	<1.0	<1.0
Total VOCs[2]	0	0	**35**

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Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016
Operable Unit 2, Northrop Grumman Systems Corporation
Bethpage, New York

Constituents (units in µg/L)	Well ID: / Sample ID: / Sample Date:	GM-74D2 / GM-74D2 / 3/14/2016	Trip Blank / TB031416MO1 / 3/14/2016
Volatile Organic Compounds [1]			
1,1,1-Trichloroethane		<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		**0.71 J**	<5.0
1,1,2-Trichloroethane		<1.0	<1.0
1,1-Dichloroethane		**0.42 J**	<1.0
1,1-Dichloroethene		**0.75 J**	<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
Chlorobenzene		<1.0	<1.0
Chlorodibromomethane		<1.0	<1.0
Chloroethane		<1.0	<1.0
Chloroform		**0.23 J**	<1.0
Chloromethane		<1.0	<1.0
cis-1,2-Dichloroethene		**0.41 J**	<1.0
cis-1,3-Dichloropropene		<1.0	<1.0
Dichloromethane		<2.0	<2.0
Ethylbenzene		<1.0	<1.0
m,p-Xylene		<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)		<5.0	<5.0
o-Xylene		<1.0	<1.0
Styrene (Monomer)		<1.0	<1.0
Tetrachloroethene		**3.5**	<1.0
Toluene		<1.0	<1.0
trans-1,2-Dichloroethene		<1.0	<1.0
trans-1,3-Dichloropropene		<1.0	<1.0
Trichloroethene		**7.1**	<1.0
Vinyl chloride		<1.0	<1.0
Total VOCs[2]		**13**	0

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Table 1.
Concentrations of Volatile Organic Compounds
in Samples Validated in March 2016,
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 Method 8260C, except for Outfall 06 which was by Method 624.
(2) Results rounded to two significant figures.
Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2014), or as received as final from the laboratory as of the end of March 2016.

--	Not analyzed
Bold	Constituent detected
VOCs	Volatile Organic Compounds
µg/L	Micrograms per liter
D	Sample was diluted
<5.0	Constituent not detected above its laboratory quantification limit.
TB	Trip blank
TB	Trip Blank
FB	Field Blank