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Date: August 31, 2021
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Subject: 2021 Second Quarter Operation Maintenance and Monitoring Report, Operable Unit 2, Northrop Grumman and Naval Weapons Industrial Reserve Plant (NWIRP) Sites, Bethpage, New York.
(NYSDEC Site #'s 1-30-003A and B)

Dear Jason:

On behalf of Northrop Grumman, Arcadis is providing the NYSDEC with the Second Quarter 2021 Operation, Maintenance, and Monitoring Report (Report). This Report was prepared to document the operation, maintenance, and monitoring (OM&M) activities conducted for the on-site portion of the Operable Unit 2 (OU2) groundwater remedy and the results of ongoing volatile organic compound (VOC) and inorganic monitoring in groundwater to meet the remedial objectives set forth in the March 2001 OU2 Record of Decision (ROD) and associated December 2019 Amended Record of Decision (AROD).

Table 1 summarizes OU2 remedial system performance operational data, total mass removal, and water balance. Tables 2 and 3 provide the analytical results for remedial system water and vapor samples, respectively, for this period. Tables 4A and 4B provide the air modeling inputs and outputs and resulting analyses based on quarterly vapor samples collected from the Tower 96 and Tower 102 systems, respectively, for this period. Tables 5A and 5B provide a summary of percent mass emittance of TCE from vapor sampling completed during the Third Quarter 2020 through the Second Quarter 2021. Tables 6 through 8 provide validated analytical results associated with groundwater monitoring efforts completed during this period. Figures 1 through 3 show the Locations of Wells and On-site Groundwater Remedy, ONCT Groundwater Extraction and Treatment System Site Plan, and the ONCT Groundwater Extraction and Treatment System Schematic, respectively.

Jason Pelton
NYSDEC
August 31, 2021

Please contact us if you have any questions or comments.

Sincerely,
Arcadis of New York, Inc.

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John Reinhardt – Town of Hempstead Water District
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Enclosures

Tables

Table 1
Operational Summary for the Treatment System
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

	Quarterly Flow Rates (gpm)		Quarterly Flow Volumes (MG)			Quarterly VOC Concentrations (µg/L)		VOC Mass Removed (lbs)	
	Current Model Design [2]	Current Operational Flow [3,4]	Design [2]	Actual [3,4]	% of Design[14]	TCE [5]	TVOC [5,6]	Quarterly	Cumulative
Influent Groundwater									
Well 1 [7]	800	871	105	88	84%	698	730	537	53,101
Well 3R [7]	700	698	92	71	77%	176	224	133	93,367
Well 17	1,000	997	131	128	98%	143	165	176	55,109
Well 18 [7]	800	922	105	116	110%	33.0	57.5	56	7,136
Well 19	500	503	66	64	97%	85	105	56	9,316
Total [8]	**3,800**	**3,991**	**499**	**467**	**94%**	**--**	**--**	**958**	**218,029**
Effluent Groundwater [9]									
Calpine	100 - 400	193	--	25	--	--	--	--	--
OXY Biosparge [10]	2 - 42	0	--	0	--	--	--	--	--
West Recharge Basins	1,112 - 1,455	976	--	128	--	--	ND	--	--
South Recharge Basins	2,231	2,397	292	314	108%	--	ND	--	--
Total [11]	**--**	**3,566**	**--**	**467**	**--**				
Additional Flow to South Recharge Basins									
Storm Water Runoff Contributing to South Recharge Basins Flow Volume [11]	--	--	--	20	--	--	--	--	--
Total Flow Volume to South Recharge Basins [10,11,12]			**296**	**334**	**113%**				

Treatment Efficiencies [13]	
Tower 96 System:	>99.9%
Tower 102 System:	>99.9%

See Notes and Abbreviations on last page.

Table 1
Operational Summary for the Treatment System
Second Quarter 2021[(1)] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) "Curent Model Design" flow rates were determined for the five remedial wells and for the South Recharge Basin based on computer modeling (ARCADIS G&M, Inc. 2002, updated in 2021). Flow rates for Calpine Power Plant (Calpine), Occidental Chemical (OXY) Biosparge, and West Recharge Basin flow rates are typical flow rates and are provided for reader information. "Design" flow volumes represent the volume of water that is expected to be pumped/discharged during the reporting period and is calculated by multiplying the design rate by the reporting period duration.

(3) Actual flow rates for the remedial wells represent the average actual pumping rates when the pumps are operational and do not take into account the time that a well is not operational. Actual flow volumes are colleted from the monthly SPDES reports, which are calculated using the SCADA instantaneous flow rates transmitted from local flow meters.

(4) “Actual” flow rates for the system discharges represent the average flow rate during the reporting period and are determined by dividing the total flow recorded during the reporting period by the reporting period duration.

(5) The TCE and TVOC concentrations are from the quarterly sampling events performed during this reporting period on May 13, 2021.

(6) The TVOC concentration for the two sets of recharge basins are their respective average monthly Outfall SPDES concentrations for the current quarter.

(7) Tower 96 was shutdown on 4/28/21 through 4/30/21 and 5/5/2021 through 5/12/21 for exterior blower bearing replacement and shaft balancing. The Tower 96 System shut down on 6/11/21 through 6/15/21 and 6/15/21 through 6/17/21 due to low voltage conditions and associated blower starter motor repairs/replacements. In addition, variable frequency drive (VFD) failures were noted at Well 18 and associated repairs were completed on 4/22/2021 and 4/23/2021, with a VFD replacement also completed on 5/27/2021.

(8) Total pumpage/recharge rates are accurate to ±15% based on available information and expected or typical precision/accuracy factors for the gauges and meters.

(9) There are four possible discharges for the effluent groundwater: South Recharge Basins, West Recharge Basins, Calpine, and the OXY Biosparge system. Treated water is continuously discharged to the south and west recharge basins during routine operation, and is available "on-demand" to both Calpine for use as make-up water, and the OXY Biosparge remediation system. For this quarter, the quarterly flow rates to the south and west recharge basins (SRB and WRB, respectively) were calculated using the remedial well flow rates and available additional information and assumptions provided by Northrop Grumman regarding flow distribution, as follows: the Tower 96 system (Remdial Wells 1 and 3R) discharges effluent water to the WRB, less Calpine usage and less 119 gpm of Tower 102 steam condenser usage (15.8 MG); the Tower 102 system (Remedial Wells 17 through 19), including the Tower 102 steam condenser usage (15.8 MG), discharges effluent water to the SRB.

(10) Oxy has not reported any water usage for the OXY Biosparge system since May 2016.

(11) Storm water runoff volume is calculated by multiplying the adjusted tributary area and NOAA precipitation data for the reporting periods. The tributary area is adjusted by the runoff coefficient to exclude the infiltration volume from the total rainfall volume. The tributary area, runoff coefficient, and adjusted tributary area are from Dvirka and Bartilucci Consulting Engineers' Storm Water Permit Evaluation Report (January, 28, 2010). The NOAA precipitation data are calculated as a sum of NOAA daily precipitation data for the reporting period. NOAA precipitation data are retrieved from Station GHCND:USW00054787 - FARMINGDALE REPUBLIC AIRPORT, NY US for April, May and June 2021.

(12) Total Flow Volume to South Recharge Basins is estimated as a sum of flow volumes contributed by the effluent groundwater to South Recharge Basins and from storm water runoff to South Recharge Basins. Second Quarter 2021 calculated South Recharge Basin flow volume is within historical operating range.

(13) Treatment System Efficiencies are calculated by dividing the difference between the remedial well flow weighted influent and effluent TVOC concentrations by the remedial well flow weighted influent concentration.

(14) Given the downtime outined above and associated repair efforts, the actual quaterly flow volumes are slightly less than design quaterly flow volumes (with the exception of Well 18) this reporting period.

-- Not Applicable
µg/L micrograms per liter
gpm gallons per minute
lbs pounds
MG million gallons
NOAA National Oceanic and Atmospheric Administration
SCADA Supervisory Controls and Data Acquisition
SPDES State Pollution Discharge Elimination System
TCE trichloroethene
TVOC total volatile organic compounds
VOC volatile organic compounds

Table 2
Concentrations of Constituents in Remedial Wells and Treatment System Effluents
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman,
Bethpage, New York

Constituents[2] (Units in µg/L)	CAS#	Location ID: Sample ID: Sample Date:	WELL 1 WELL 1 5/13/2021	WELL 3R WELL 3R 5/13/2021	96 EFFLUENT 96 EFFLUENT 5/13/2021
Volatile Organic Compounds (VOCs)[3]					
1,1,1-Trichloroethane	00071-55-6		< 0.50	**0.43 J**	< 0.50
1,1,2,2-Tetrachloroethane	00079-34-5		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	00079-00-5		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	00075-34-3		**0.82 J**	**1.4**	< 1.0
1,1-Dichloroethene	00075-35-4		**2.2**	**3.8**	< 0.50
1,2-Dichloroethane	00107-06-2		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	00078-87-5		**4.1**	< 1.0	< 1.0
2-Butanone (MEK)	00078-93-3		< 10	< 10	< 10
2-Hexanone (MBK)	00591-78-6		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone (MIK)	00108-10-1		< 5.0	< 5.0	< 5.0
Acetone	00067-64-1		< 10	< 10	< 10
Benzene	00071-43-2		< 0.50	< 0.50	< 0.50
Bromodichloromethane	00075-27-4		< 1.0	< 1.0	< 1.0
Bromoform	00075-25-2		< 1.0	< 1.0	< 1.0
Bromomethane	00074-83-9		< 2.0	< 2.0	< 2.0
Carbon Disulfide	00075-15-0		< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	00056-23-5		< 1.0	< 1.0	< 1.0
Chlorobenzene	00108-90-7		< 1.0	< 1.0	< 1.0
Chloroethane	00075-00-3		< 1.0	< 1.0	< 1.0
Chloroform	00067-66-3		**0.44 J**	**0.32 J**	< 0.50
Chloromethane	00074-87-3		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	00156-59-2		**5.8**	**3.4**	< 0.50
cis-1,3-Dichloropropene	10061-01-5		< 1.0	< 1.0	< 1.0
Dibromochloromethane	00124-48-1		< 1.0	< 1.0	< 1.0
Ethylbenzene	00100-41-4		< 1.0	< 1.0	< 1.0
Dichloromethane	00075-09-2		< 0.50	< 0.50	< 0.50
Styrene	00100-42-5		< 1.0	< 1.0	< 1.0
Tetrachloroethene	00127-18-4		**15.5**	**34.8**	< 0.50
Toluene	00108-88-3		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	00156-60-5		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene	10061-02-6		< 1.0	< 1.0	< 1.0
Trichloroethylene	00079-01-6		**698**	**176**	< 0.50
Trichlorotrifluoroethane (Freon 113)	00076-13-1		**2.8**	**1.7**	< 0.50
Vinyl Chloride	00075-01-4		< 0.50	**2.2**	< 0.50
Xylene-o	00095-47-6		< 1.0	< 1.0	< 1.0
Xylene-m,p	179601-23-1		< 1.0	< 1.0	< 1.0
Total VOCs[4]			**730**	**224**	**ND**
1,4-Dioxane[3]			**7.2**	**8.9**	**6.7**

Notes and abbreviations on last page.

Table 2
Concentrations of Constituents in Remedial Wells and Treatment System Effluents
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman,
Bethpage, New York

Constituents[2] (Units in µg/L)	CAS#	Location ID: Sample ID: Sample Date:	WELL 17 WELL 17 5/13/2021	WELL 18 WELL 18 5/13/2021	WELL 19 WELL 19 5/13/2021
Volatile Organic Compounds (VOCs)[3]					
1,1,1-Trichloroethane	00071-55-6		< 0.50	**0.29 J**	< 0.50
1,1,2,2-Tetrachloroethane	00079-34-5		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	00079-00-5		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	00075-34-3		**0.59 J**	**1.4**	< 1.0
1,1-Dichloroethene	00075-35-4		**1.2**	**2.4**	**1.2**
1,2-Dichloroethane	00107-06-2		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	00078-87-5		**0.90 J**	< 1.0	< 1.0
2-Butanone (MEK)	00078-93-3		< 10	< 10	< 10
2-Hexanone (MBK)	00591-78-6		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone (MIK)	00108-10-1		< 5.0	< 5.0	< 5.0
Acetone	00067-64-1		< 10	< 10	< 10
Benzene	00071-43-2		< 0.50	< 0.50	< 0.50
Bromodichloromethane	00075-27-4		< 1.0	< 1.0	< 1.0
Bromoform	00075-25-2		< 1.0	< 1.0	< 1.0
Bromomethane	00074-83-9		< 2.0	< 2.0	< 2.0
Carbon Disulfide	00075-15-0		< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	00056-23-5		< 1.0	< 1.0	< 1.0
Chlorobenzene	00108-90-7		< 1.0	< 1.0	< 1.0
Chloroethane	00075-00-3		< 1.0	< 1.0	< 1.0
Chloroform	00067-66-3		< 0.50	< 0.50	< 0.50
Chloromethane	00074-87-3		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	00156-59-2		**2.5**	**2.7**	**12.0**
cis-1,3-Dichloropropene	10061-01-5		< 1.0	< 1.0	< 1.0
Dibromochloromethane	00124-48-1		< 1.0	< 1.0	< 1.0
Ethylbenzene	00100-41-4		< 1.0	< 1.0	< 1.0
Dichloromethane	00075-09-2		< 0.50	< 0.50	< 0.50
Styrene	00100-42-5		< 1.0	< 1.0	< 1.0
Tetrachloroethene	00127-18-4		**14.6**	**16.6**	**6.0**
Toluene	00108-88-3		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	00156-60-5		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene	10061-02-6		< 1.0	< 1.0	< 1.0
Trichloroethylene	00079-01-6		**143**	**33.0**	**84.9**
Trichlorotrifluoroethane (Freon 113)	00076-13-1		**1.9**	**1.1**	**0.88**
Vinyl Chloride	00075-01-4		< 0.50	< 0.50	< 0.50
Xylene-o	00095-47-6		< 1.0	< 1.0	< 1.0
Xylene-m,p	179601-23-1		< 1.0	< 1.0	< 1.0
Total VOCs[4]			**165**	**57.5**	**105.0**
1,4-Dioxane[3]			**4.2**	**4.8**	**3.7**

Notes and abbreviations on last page.

Table 2
Concentrations of Constituents in Remedial Wells and Treatment System Effluents
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman,
Bethpage, New York

Constituents[2] (Units in µg/L)	CAS#	Location ID: Sample ID: Sample Date:	WELL 19 REP-120820-JS-1 5/13/2021	102 EFFLUENT 102 EFFLUENT 5/13/2021
Volatile Organic Compounds (VOCs)[3]				
1,1,1-Trichloroethane	00071-55-6		< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	00079-34-5		< 1.0	< 1.0
1,1,2-Trichloroethane	00079-00-5		< 1.0	< 1.0
1,1-Dichloroethane	00075-34-3		< 1.0	< 1.0
1,1-Dichloroethene	00075-35-4		**1.3**	< 0.50
1,2-Dichloroethane	00107-06-2		< 1.0	< 1.0
1,2-Dichloropropane	00078-87-5		< 1.0	< 1.0
2-Butanone (MEK)	00078-93-3		< 10	< 10
2-Hexanone (MBK)	00591-78-6		< 5.0	< 5.0
4-Methyl-2-Pentanone (MIK)	00108-10-1		< 5.0	< 5.0
Acetone	00067-64-1		< 10	< 10
Benzene	00071-43-2		< 0.50	< 0.50
Bromodichloromethane	00075-27-4		< 1.0	< 1.0
Bromoform	00075-25-2		< 1.0	< 1.0
Bromomethane	00074-83-9		< 2.0	< 2.0
Carbon Disulfide	00075-15-0		< 2.0	< 2.0
Carbon Tetrachloride	00056-23-5		< 1.0	< 1.0
Chlorobenzene	00108-90-7		< 1.0	< 1.0
Chloroethane	00075-00-3		< 1.0	< 1.0
Chloroform	00067-66-3		< 0.50	< 0.50
Chloromethane	00074-87-3		< 1.0	< 1.0
cis-1,2-Dichloroethene	00156-59-2		**11.7**	< 0.50
cis-1,3-Dichloropropene	10061-01-5		< 1.0	< 1.0
Dibromochloromethane	00124-48-1		< 1.0	< 1.0
Ethylbenzene	00100-41-4		< 1.0	< 1.0
Dichloromethane	00075-09-2		< 0.50	< 0.50
Styrene	00100-42-5		< 1.0	< 1.0
Tetrachloroethene	00127-18-4		**6.3**	< 0.50
Toluene	00108-88-3		< 1.0	< 1.0
trans-1,2-Dichloroethene	00156-60-5		< 0.50	< 0.50
trans-1,3-Dichloropropene	10061-02-6		< 1.0	< 1.0
Trichloroethylene	00079-01-6		**86.3**	< 0.50
Trichlorotrifluoroethane (Freon 113)	00076-13-1		**0.89**	< 0.50
Vinyl Chloride	00075-01-4		< 0.50	< 0.50
Xylene-o	00095-47-6		< 1.0	< 1.0
Xylene-m,p	179601-23-1		< 1.0	< 1.0
Total VOCs[4]			**106.5**	**ND**
1,4-Dioxane[3]			**4.0**	**5.6**

Notes and abbreviations on last page.

Table 2
Concentrations of Constituents in Remedial Wells and Treatment System Effluents
Second Quarter 2021[(1)] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).

(3) VOC samples analyzed using USEPA Method 8260C. 1,4-Dioxane samples analyzed using USEPA Method 8270D-SIM.

(4) 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.

0.82	Bold value indicates a detection
< 1.0	Compound is not detected above its laboratory quantification limit
µg/L	micrograms per liter
ND	Not detected
OU2	Operable Unit 2
REP	Blind Replicate Sample
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Table 3A
Vapor Sample Analytical Results
Tower 96 Treatment System
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (units in µg/m^3)	Location ID: Sample ID: Sample Date:	96 INFLUENT T96 INFLUENT (AA) 5/13/2021	96 MID-EFFLUENT T96 MIDTRAIN (AA) 5/13/2021	96 EFFLUENT T96 EFFLUENT (AA) 5/13/2021
Volatile Organic Compounds (VOCs)[2]	**CAS #**			
1,1,1-Trichloroethane	00071-55-6	**3.6**	**1.2**	**4.1**
1,1,2,2-Tetrachloroethane	00079-34-5	< 0.69	< 0.69	< 0.69
1,1,2-Trichloroethane	00079-00-5	**0.60**	< 0.55	< 0.55
1,1-Dichloroethane	00075-34-3	**10**	**3.6**	**45.7**
1,1-Dichloroethene	00075-35-4	**27**	**9.5**	**99.1**
1,2-Dichloroethane	00107-06-2	**0.69 J**	< 0.81	**1.3**
1,2-Dichloropropane	00078-87-5	**21**	**6.0**	**0.97**
Benzene	00071-43-2	**0.45 J**	< 0.64	**0.31 J**
Bromodichloromethane	00075-27-4	< 0.67	< 0.67	< 0.67
Bromoform	00075-25-2	< 0.41	< 0.41	< 0.41
Bromomethane	00074-83-9	< 0.78	< 0.78	< 0.78
Carbon Disulfide	00075-15-0	< 0.62	< 0.62	< 0.62
Carbon Tetrachloride	00056-23-5	**1.3**	**0.75**	**0.82**
Chlorobenzene	00108-90-7	< 0.92	< 0.92	< 0.92
Chloroethane	00075-00-3	**0.82**	< 0.53	**2.0**
Chloroform	00067-66-3	**4.5**	**1.5**	**16**
Chloromethane	00074-87-3	**1.2**	**1.4**	**1.8**
cis-1,2-Dichloroethene	00156-59-2	**41.6**	**14**	**148**
cis-1,3-Dichloropropene	10061-01-5	< 0.91	< 0.91	< 0.91
Dibromochloromethane	00124-48-1	< 0.85	< 0.85	< 0.85
Ethylbenzene	00100-41-4	< 0.87	< 0.87	< 0.87
Dichloromethane	00075-09-2	**19**	**1.1**	**4.5**
Styrene	00100-42-5	< 0.85	< 0.85	< 0.85
Tetrachloroethene	00127-18-4	**656**	**68.5**	**2.5**
Toluene	00108-88-3	**0.49 J**	**0.49 J**	**61.0**
trans-1,2-Dichloroethene	00156-60-5	**0.52 J**	< 0.79	**2.0**
trans-1,3-Dichloropropene	10061-02-6	< 0.91	< 0.91	< 0.91
Trichloroethylene	00079-01-6	**11,600**	**1,430**	**514**
Trichlorotrifluoroethane (Freon 113)	00076-13-1	**22**	**8.4**	**77.4**
Vinyl Chloride	00075-01-4	**8.4**	**2.8**	**18**
Xylene-o	00095-47-6	< 0.87	< 0.87	< 0.87
Xylene-m,p	179601-23-1	< 0.87	**0.42 J**	< 0.87
Total VOCs [3]		**12,419**	**1,550**	**1,000 [4]**

Notes and abbreviations on last page.

Table 3A
Vapor Sample Analytical Results,
Tower 96 Treatment System,
Second Quarter 2021(1) Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per Modified USEPA Method TO-15.

(3) 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.

(4) GAC within the supplemental GAC beds was replaced on March 3, 2021. Northrop Grumman will closely monitor vapor-phase effluent concentrations and replace GAC accordingly to ensure compliance with all discharge requirements.

10	Bold value indicates a detection
< 0.55	Compound is not detected above its laboratory quantification limit.
µg/m^3	micrograms per cubic meter
J	Compound detected below its reporting limit; value is estimated.
ELAP	Environmental Laboratory Approval Program
NYSDOH	New York State Department of Health
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Table 3B
Vapor Sample Analytical Results
Tower 102 Treatment System
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (Units in µg/m^3)	Location ID: / Sample ID: / Sample Date:	102 INFLUENT T102 INFLUENT (AA) 5/13/2021	102 EFFLUENT T102 EFFLUENT (AA) 5/13/2021
Volatile Organic Compounds (VOCs)[2]	**CAS #**		
1,1,1-Trichloroethane	00071-55-6	< 11	< 0.55
1,1,2,2-Tetrachloroethane	00079-34-5	< 14	< 0.69
1,1,2-Trichloroethane	00079-00-5	< 11	< 0.55
1,1-Dichloroethane	00075-34-3	**24**	**12**
1,1-Dichloroethene	00075-35-4	**44.4**	**36**
1,2-Dichloroethane	00107-06-2	< 16	< 0.81
1,2-Dichloropropane	00078-87-5	**11 J**	< 0.92
Benzene	00071-43-2	< 13	< 0.64
Bromodichloromethane	00075-27-4	< 13	< 0.67
Bromoform	00075-25-2	< 8.3	< 0.41
Bromomethane	00074-83-9	< 16	< 0.78
Carbon Disulfide	00075-15-0	< 12	< 0.62
Carbon Tetrachloride	00056-23-5	< 5.0	< 0.25
Chlorobenzene	00108-90-7	< 18	< 0.92
Chloroethane	00075-00-3	< 11	< 0.53
Chloroform	00067-66-3	< 20	**1.7**
Chloromethane	00074-87-3	< 8.3	**1.0**
cis-1,2 Dichloroethene	00156-59-2	**127**	**15**
cis-1,3-Dichloropropene	10061-01-5	< 18	< 0.91
Dibromochloromethane	00124-48-1	< 17	< 0.85
Ethylbenzene	00100-41-4	< 17	< 0.87
Dichloromethane	00075-09-2	< 14	**1.8**
Styrene	00100-42-5	< 17	< 0.85
Tetrachloroethene	00127-18-4	**347**	**1.6**
Toluene	00108-88-3	**< 15**	< 0.75
trans-1,2-Dichloroethene	00156-60-5	< 16	< 0.79
trans-1,3-Dichloropropene	10061-02-6	< 18	< 0.91
Trichloroethylene	00079-01-6	**2,670**	**20**
Trichlorotrifluoroethane (Freon 113)	00076-13-1	**35**	**18**
Vinyl Chloride	00075-01-4	< 2.0	< 0.10
Xylene-o	00095-47-6	< 17	< 0.87
Xylene-m,p	179601-23-1	< 17	< 0.87
Total VOCs [3]		**3,258**	**107**

Notes and abbreviations on last page.

Table 3B
Vapor Sample Analytical Results
Tower 102 Treatment System
Second Quarter 2021(1) Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per Modified USEPA Method TO-15.

(3) 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.

24	Bold value indicates a detection
< 11	Compound is not detected above its laboratory quantification limit.
µg/m^3	micrograms per cubic meter
J	Compound detected below its reporting limit; value is estimated.
ELAP	Environmental Laboratory Approval Program
NYSDOH	New York State Department of Health
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Table 4A
Summary of AERMOD Air Quality Impact Analysis
Tower 96 Treatment System
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents[7]	CAS#	T96 Effluent (ug/m^3)[6]	Emission Rate[2]			Scaled Impact - Hourly [3] (ug/m^3)	Scaled Impact - Annual [3] (ug/m^3)	SGC [4] (ug/m^3)	AGC[4] (ug/m^3)	%SGC	% AGC
		5/13/2021	lb/yr	lb/hr	g/s						
1,1,1 - Trichloroethane	00071-55-6	**4.1**	0.64	7.29E-05	9.19E-06	1.36E-03	3.99E-05	9,000	5,000.0	0.00%	0.00%
1,1 - Dichloroethane	00075-34-3	**45.7**	7.12	8.13E-04	1.02E-04	1.52E-02	4.45E-04	--	0.6	--	0.07%
1,2 - Dichloroethane	00107-06-2	**1.3**	0.20	2.31E-05	2.91E-06	4.31E-04	1.27E-05	--	0.0	--	0.03%
1,1 - Dichloroethene	00075-35-4	**99.1**	15.44	1.76E-03	2.22E-04	3.29E-02	9.65E-04	--	200.0	--	0.00%
Tetrachloroethene	00127-18-4	**2.5**	0.39	4.45E-05	5.60E-06	8.29E-04	2.43E-05	300	4.0	0.00%	0.00%
Trichloroethene[5]	00079-01-6	**514**	80.07	9.14E-03	1.15E-03	1.70E-01	5.00E-03	20	0.2	0.85%	2.50%
Vinyl Chloride[5]	00075-01-4	**18**	2.80	3.20E-04	4.03E-05	5.97E-03	1.75E-04	180,000	0.1	0.00%	0.16%
cis-1,2-Dichloroethene	00156-59-2	**148**	23.05	2.63E-03	3.32E-04	4.91E-02	1.44E-03	--	63.0	--	0.00%
trans-1,2-Dichloroethene	00156-60-5	**2.0**	0.31	3.56E-05	4.48E-06	6.63E-04	1.95E-05	--	63.0	--	0.00%
Benzene[5]	00071-43-2	**0.31**	0.05	5.51E-06	6.95E-07	1.03E-04	3.02E-06	1,300	0.1	0.00%	0.00%
Toluene	00108-88-3	**61.0**	9.50	1.08E-03	1.37E-04	2.02E-02	5.94E-04	37,000	5,000	0.00%	0.00%
1,2-Dichloropropane	00078-87-5	**0.97**	0.15	1.72E-05	2.17E-06	3.22E-04	9.44E-06	--	4.0	--	0.00%
Carbon Tetrachloride	00078-93-10	**0.82**	0.13	1.46E-05	1.84E-06	2.72E-04	7.98E-06	1,900	0.2	0.00%	0.00%
Chloroethane	00075-00-3	**2.0**	0.31	3.56E-05	4.48E-06	6.63E-04	1.95E-05	--	10,000	--	0.00%
Chloroform	00067-66-3	**16**	2.49	2.85E-04	3.58E-05	5.31E-03	1.56E-04	150	14.7	0.00%	0.00%
Chloromethane	00074-87-3	**1.8**	0.28	3.20E-05	4.03E-06	5.97E-04	1.75E-05	22,000	90.0	0.00%	0.00%
Dichloromethane	00078-93-19	**4.5**	0.70	8.00E-05	1.01E-05	1.49E-03	4.38E-05	14,000	60.0	0.00%	0.00%
Trichlorotrifluoroethane (Freon 113)	00076-13-1	**77.4**	12.06	1.38E-03	1.73E-04	2.57E-02	7.53E-04	960,000	180,000	0.00%	0.00%

See Notes and Abbreviations on last page.

Table 4A
Summary of AERMOD Air Quality Impact Analysis
Tower 96 Treatment System
Second Quarter 2021(1) Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) Emission rate calculated based on effluent concentration and a stack air flow rate of 4,715 acfm. The stack air flow rate (in acfm) is taken from the actual stack air flow rate on 5/13/2021. Effluent temperature used in the model was 92°F from direct read in-line gauge.

Trichloroethene (lb/hr) = (Trichloroethene ug/m^3) x (4,715 ft^3/min) x (1 m^3/35 ft^3) x (60 min/hr) x (0.000001 g/1 ug) x (0.0022 lb/g)
lb/yr = lb/hr x 8,760 hrs/yr
g/s = lb/hr x 1 hr/3,600 sec x 453.59 g/1 lb

(3) Ambient impact based on AERMOD modeling using normalized rate of 1 g/s is scaled to the actual emission rate of the pollutant. Modeling was performed using the representative meteorological data from the nearest station (Farmingdale, NY) for the years 2011 through 2015, and a stack which is 55 feet high and 20 inches in diameter. The maximum impact from all the years was used for the calculations.

Scaled hourly impact (ug/m3) = AERMOD predicted hourly ambient impact at 1 g/s ([ug/m3]/[g/s]) x Actual emission rate (g/s)
Scaled annual impact (ug/m3) = AERMOD predicted annual ambient impact at 1 g/s ([ug/m3]/[g/s]) x Actual emission rate (g/s)

AERMOD Normalized Ambient Impact at 1 g/s	
Hourly ([ug/m^3]/[g/s])	Annual ([ug/m^3]/[g/s])
148.05	4.35

(4) Short-term and annual guideline concentrations for air toxic pollutants specified in the NYSDEC DAR-1 AGC/SGC tables revised August 10, 2016.

(5) Vinyl chloride and benzene potential emission rates are less than 0.1 lb/hr and therefore below the trigger emissions for degree of air cleaning requirement (6 CRR-NY 212-2.3). TCE potential emissions are above the trigger limit and require a 12 month rolling average of annual emission to be maintained (see Table 5A) to demonstrate compliance with the 6 CRR-NY 212-2.2 500 lb/year requirement.

(6) GAC within the supplemental GAC beds was replaced on March 3, 2021.

(7) Emission rate calculations are performed only for constituents detected in the collected sample

--	None Specified
0.34	bold value indicates a detection
acfm	actual cubic feet per minute
g/s	grams per second
µg/m^3	micrograms per cubic meter
lb/yr	pounds per year
lb/hr	pounds per hour
AGC	Annual Guideline Concentration
CAS #	Chemical Abstracts Service Registry Number
CRR-NY	New York Codes, Rules and Regulations
DAR-1	Division of Air Resources-1
NYSDEC	New York State Department of Environmental Conservation
SGC	Short-term Guideline Concentration

Table 4B
Summary of AERMOD Air Quality Impact Analysis
Tower 102 Treatment System
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents [6]	CAS#	T102 Effluent (ug/m^3)	Emission Rate[2]			Scaled Impact - Hourly [3] (ug/m^3)	Scaled Impact - Annual [3] (ug/m^3)	SGC [4] (ug/m^3)	AGC[4] (ug/m^3)	%SGC	% AGC
		5/13/2021	lb/yr	lb/hr	g/s						
1,1-Dichloroethane	00075-34-3	**12**	3.00	3.43E-04	4.32E-05	1.51E-02	9.86E-05	--	0.6	--	0.02%
1,1-Dichloroethene	00075-35-4	**36**	9.00	1.03E-03	1.29E-04	4.52E-02	2.96E-04	--	200	--	0.00%
Tetrachloroethene	00127-18-4	**1.6**	0.40	4.57E-05	5.75E-06	2.01E-03	1.31E-05	300	4.0	0.00%	0.00%
Trichloroethene[5]	00079-01-6	**20**	5.00	5.71E-04	7.19E-05	2.51E-02	1.64E-04	20	0.2	0.13%	0.08%
cis-1,2-Dichloroethene	00156-59-2	**15**	3.75	4.28E-04	5.39E-05	1.88E-02	1.23E-04	--	63.0	--	0.00%
Chloroform	00067-66-3	**1.7**	0.43	4.85E-05	6.11E-06	2.13E-03	1.40E-05	150	14.7	0.00%	0.00%
Chloromethane	00074-87-3	**1.0**	0.25	2.85E-05	3.60E-06	1.25E-03	8.22E-06	22,000	90.0	0.00%	0.00%
Dichloromethane	00075-09-2	**1.8**	0.45	5.14E-05	6.47E-06	2.26E-03	1.48E-05	14,000	60.0	0.00%	0.00%
Trichlorotrifluoroethane (Freon 113)	00076-13-1	**18**	4.50	5.14E-04	6.47E-05	2.26E-02	1.48E-04	960,000	180,000	0.00%	0.00%

See Notes and Abbreviations on last page.

Table 4B
Summary of AERMOD Air Quality Impact Analysis
Tower 102 Treatment System
Second Quarter 2021(1) Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) Emission rate calculated based on effluent concentration and a stack air flow rate of 7,569 cfm. The stack air flow rate (in acfm) is taken from the actual stack air flow rate on 5/13/2021.
Effluent temperature used in the model was 80°F from direct read in-line gauge.
Trichloroethene (lb/hr) = (Trichloroethene ug/m^3) x (7,569 ft^3/min) x (1 m3/35 ft^3) x (60 min/hr) x (0.000001 g/1 ug) x (0.0022 lb/g)
lb/yr = lb/hr x 8,760 hrs/yr
g/s = lb/hr x 1 hr/3,600 sec x 453.59 g/1 lb

(3) Ambient impact based on AERMOD modeling using normalized rate of 1 g/s is scaled to the actual emission rate of the pollutant. Modeling was performed using the representative meteorological data from the nearest station (Farmingdale, NY) for the years 2011 through 2015, and a stack which is 69.52 feet high and 24 inches in diameter. The maximum impact from all the years was used for the calculations.
Scaled hourly impact (ug/m3) = AERMOD predicted hourly ambient impact at 1 g/s ([ug/m3]/[g/s]) x Actual emission rate (g/s)
Scaled annual impact (ug/m3) = AERMOD predicted annual ambient impact at 1 g/s ([ug/m3]/[g/s]) x Actual emission rate (g/s)

AERMOD Normalized Ambient Impact at 1 g/s	
Hourly ([ug/m^3]/[g/s])	Annual ([ug/m^3]/[g/s])
348.85	2.29

(4) Short-term and annual guideline concentrations for air toxic pollutants specified in the NYSDEC DAR-1 AGC/SGC tables revised August 10, 2016.

(5) Benzene potential emission rate is less than 0.1 lb/hr and therefore below the trigger emissions for degree of air cleaning requirement (6 CRR-NY 212-2.3). TCE potential emissions are above the trigger limit and require a 12 month rolling average of annual emission to be maintained (see Table 5B) to demonstrate compliance with the 6 CRR-NY 212-2.2 500 lb/year requirement.

(6) Emission rate calculations are performed only for constituents detected in the collected sample.

--	None Specified
13	bold value indicates a detection
acfm	actual cubic feet per minute
g/s	grams per second
µg/m^3	micrograms per cubic meter
lb/yr	pounds per year
lb/hr	pounds per hour
AGC	Annual Guideline Concentration
CAS #	Chemical Abstracts Service Registry Number
CRR-NY	New York Codes, Rules and Regulations
DAR-1	Division of Air Resources-1
NYSDEC	New York State Department of Environmental Conservation
SGC	Short-term Guideline Concentration

Table 5A
Summary of TCE Mass Removal
Tower 96 Treatment System
Second Quarter 2021[1] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Date	TCE Concentration (µg/m^3)[2]			TCE Mass Emission[3]	Percent of Allowable TCE Emissions[4]
	T96 INFLUENT	T96 MIDTRAIN	T96 EFFLUENT [6]	(lbs)	12 Month Rolling Average
8/19/2020	7,310	4,180	1,550	65.0	34.2%
11/17/2020	19,300 [5]	2,190	5,040	196.4	72.9%
3/16/2021	13,500	5,320	34	1.8	70.8%
5/13/2021	12,419	1,550	1,000	24.6	57.6%

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP-certified laboratory for VOC analyses per Modified USEPA Method TO-15.

(3) TCE Mass Emission calculated based on the exhaust air flow rate on the day of sampling and the period of time since the preceding day of sampling.
TCE (lb) = TCE Concentration [µg/m3] x Days x Flow Rate [ft3/min] x (1 m3/35 ft3) x (60 min/hr) x (24 hr/day) x (0.000001 g/1 ug) x (0.0022 lb/g)

(4) Percent of allowable TCE emissions to date is a time-weighted annual rolling average based on the 500 lb/year emission limit specified in the CRR-NY 212-2.2 Table 2. High Toxicity Air Contaminant List, revised April 1, 2017.

(5) Given that Q4 2020 TCE aqueous-pahse influent concentrations are comparable to Q1 through Q3 2020 and prior quarters, it is unclear what caused this elevated vapor-phase concentration. Northrop Grumman inspected the GAC units and determined that they were functional.

(6) GAC within the supplemental GAC beds was replaced on March 3, 2021. Northrop Grumman will closely monitor vapor-phase effluent concentrations and replace GAC accordingly to ensure compliance with all discharge requirements.

µg/m^3	micrograms per cubic meter
lbs	pounds
CRR-NY	Codes, Rules and Regulations of the State of New York
ELAP	Environmental Laboratory Approval Program
NS	Not Sampled
NYSDOH	New York State Department of Health
SUP	Supplemental
TCE	Trichloroethylene
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
VPGAC	vapor phase granular activated carbon

Table 5B
Summary of TCE Mass Removal
Tower 102 Treatment System
Second Quarter 2021[(1)] Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

Date	TCE Concentration (µg/m^3)[(2)]		TCE Mass Emission[(3)]		Percentage of Allowable TCE Emissions[(4)]	
	T102 INFLUENT	T102 EFFLUENT	lbs	lbs/day	Period	12 Month Rolling Average
8/26/2020	3,910	105	7.6	0.07	5.3%	2.2%
12/8/2020	2,130	1,990 [(5)]	147.8	1.42	103.7%	31.4%
2/24/2021	2,890	13	0.7	0.01	0.7%	31.4%
5/13/2021	3,258	107	5.7	0.07	5.3%	32.4%

Notes and Abbreviations:

(1) Quarterly reporting period: April 1, 2021 through June 30, 2021.

(2) Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP-certified laboratory for VOC analyses per Modified USEPA Method TO-15.

(3) TCE Mass Emission calculated based on the exhaust air flow rate on the day of sampling and the period of time since the preceding sampling day.

TCE (lb) = TCE Concentration [µg/m^3] x Days x Flow Rate [ft^3/min] x (1 m^3/35 ft^3) x (60 min/hr) x (24 hr/day) x (0.000001 g/1 ug) x (0.0022 lb/g)

(4) Percent of allowable TCE emissions to date is a time-weighted annual rolling average based on the 500 lb/year emission limit specified in the CRR-NY 212-2.2 Table 2. High Toxicity Air Contaminant List, revised April 1, 2017.

(5) The elevated effluent vapor-phase contaminant concentrations, compared to prior quarterly sample events, are potentially related to a malfunctioning steam actuator valve noted at the regenerative vapor-phase granular activated carbon vessels (RVPGAC), which may have allowed regenerative steam and condensate to partially commingle with system vapor-phase effluent. It should be noted that no SGC or AGC air emission exceedance were noted associated with this sampling event, and the steam actuator valve has since been repaired. Arcadis will closely monitor contaminant concentrations during future sampling events.

µg/m^3	Micrograms per cubic meter
lbs	Pounds
ELAP	Environmental Laboratory Approval Program
NYSDOH	New York State Department of Health
TCE	Trichloroethene
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-15SR GM-15SR 5/6/2021	GM-15I GM-15I 5/6/2021	GM-15D GM-15D 5/6/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
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		< 1.0	< 1.0	< 1.0
Trichloroethene		**1.1**	**1.4**	< 1.0
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**1.1**	**1.4**	ND
1,4 Dioxane [1,2]		< 0.24 B	< 0.23	< 0.24 B

See notes on last page

Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-15D2 GM-15D2 5/6/2021	GM-17I GM-17I 4/13/2021	GM-17D GM-17D 4/13/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		**2.2**	< 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		**6.4**	**4.4**	< 1.0
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**8.6**	**4.4**	ND
1,4 Dioxane [1,2]		< 3.7 B	**7.0**	**10**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-18I GM-18I 5/12/2021	GM-18D GM-18D 5/12/2021	GM-20I GM-20I 5/11/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
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		< 1.0	< 1.0	< 1.0
Trichloroethene		< 1.0	< 1.0	**0.55 J**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		ND	ND	**0.55**
1,4 Dioxane [1,2]		**6.0**	**8.0**	**4.8**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-20D GM-20D 5/11/2021	GM-21S GM-21S 5/5/2021	GM-21I GM-21I 5/11/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
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		< 1.0	< 1.0	< 1.0
Trichloroethene		< 1.0	**0.53 J**	**0.76 J**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		ND	**0.53**	**0.76**
1,4 Dioxane [1,2]		**5.4**	**5.0**	**6.2**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-21D GM-21D 5/11/2021	GM-21D2 GM-21D2 5/5/2021	GM-33D2 GM-33D2 5/20/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 5.0	< 5.0	**3.5 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	**1.6**
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		**0.57 J**	**5.6**	**11.9**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**0.57**	**5.6**	**17.0**
1,4 Dioxane [1,2]		**4.4**	**4.3**	**9.9**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-34D GM-34D 5/25/2021	GM-34D2 GM-34D2 5/25/2021	GM-35D2 GM-35D2 5/19/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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 J
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	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		**3.0**	< 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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		**5.4**	**8.1**	**3.7**
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		**108**	**53.1**	**25.0**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**116**	**61.2**	**28.7**
1,4 Dioxane [1,2]		**6.6**	**4.3**	**5.8**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-36D GM-36D 5/13/2021	GM-36D2 GM-36D2 5/13/2021	GM-37D GM-37D 5/19/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	**0.64 J**	< 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 J	< 10 J	< 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 J	< 2.0 J	< 2.0 J
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	< 1.0
Chloromethane		< 1.0 J	< 1.0 J	< 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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
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		< 1.0	< 1.0	< 1.0
Trichloroethene		< 1.0	**3.4**	**7.7**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		ND	**4.0**	**7.7**
1,4 Dioxane [1,2]		**1.4**	**4.4**	**0.39**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-37D2 GM-37D2 5/19/2021	GM-38D GM-38D 5/13/2021	GM-38D2 GM-38D2 5/13/2021
Volatile Organic Compounds (VOCs)[1, 2]				
1,1,1-Trichloroethane		< 1.0	< 1.0	**0.84 J**
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		**0.72 J**	< 1.0	**3.8**
1,1-Dichloroethene		< 1.0	< 1.0	**1.3**
1,2-Dichloroethane		< 1.0	**1.3**	< 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 J	< 10 J
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0 J	< 2.0 J	< 2.0 J
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	< 1.0
Chloromethane		< 1.0	< 1.0 J	< 1.0 J
cis-1,2-Dichloroethene		< 1.0	**0.82 J**	**0.90 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-Xylenes		< 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	**2.0**	< 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		**1.7**	**110**	**27.5**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**2.4**	**114**	**34.3**
1,4 Dioxane [1,2]		**0.44**	**3.1 J**	**0.59**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-39DA GM-39DA 5/12/2021	GM-39DB GM-39DB 5/12/2021	GM-70D2 GM-70D2 5/18/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	**2.0**
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**	**11.1**	**5.9**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**1.0**	**11.1**	**7.9**
1,4 Dioxane [1,2]		**4.7**	**4.3**	**3.9**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-71D2 GM-71D2 5/18/2021	GM-73D GM-73D 4/14/2021	GM-73D2 GM-73D2 4/14/2021
Volatile Organic Compounds (VOCs)[1, 2]				
1,1,1-Trichloroethane		**0.74 J**	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		**1.6**	< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
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		< 1.0	< 1.0	< 1.0
Trichloroethene		**8.1**	**11.3**	**41.9**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**11.4**	**11.3**	**42.9**
1,4 Dioxane [1,2]		**3.8**	**1.8**	**2.7**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-73D3 GM-73D3 4/14/2021	GM-74I GM-74I 4/14/2021	GM-74D GM-74D 4/14/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		**1.5**	< 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		**2.3**	**1.1**	**1.9**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**3.8**	**1.1**	**1.9**
1,4 Dioxane [1,2]		**1.5 J**	**5.8**	**5.4**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-74D2 GM-74D2 4/14/2021	GM-74D3 GM-74D3 4/14/2021	GM-75D2 GM-75D2 5/18/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	**2.3**	< 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		**3.3**	**3.6**	**13.9**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**3.3**	**5.9**	**13.9**
1,4 Dioxane [1,2]		**3.0**	**1.6**	**4.9**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-78S GM-78S 4/15/2021	GM-78I GM-78I 4/15/2021	GM-78D GM-78D 4/15/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		**0.81 J**	**0.62 J**	< 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 J	< 10 J	< 10 J
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	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		**0.76 J**	**0.60 J**	< 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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
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		< 1.0	< 1.0	< 1.0
Trichloroethene		**3.1**	**2.9**	**0.64 J**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**4.7**	**4.1**	**0.64**
1,4 Dioxane [1,2]		**3.6 J**	**5.2 J**	**10 J**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-78D2 GM-78D2 4/15/2021	GM-78D2 REP041521ARH 4/15/2021	GM-79I GM-79I 5/12/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
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		< 1.0	< 1.0	< 1.0
Trichloroethene		**0.68 J**	**0.83 J**	**1.2**
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**0.68**	**0.83**	**1.2**
1,4 Dioxane [1,2]		**13 J**	**14 J**	**4.3**

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-79D GM-79D 5/12/2021	HN-24I HN-24I 5/5/2021	HN-40S HN-40S 5/4/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	**2.4**	< 1.0
1,1-Dichloroethene		< 1.0	**0.94 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	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		< 1.0	**0.66 J**	< 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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	**3.6**	< 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		**15.5**	**7.5**	< 1.0
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**15.5**	**15.1**	ND
1,4 Dioxane [1,2]		**4.6**	**1.0**	< 0.24

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Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	HN-40I HN-40I 5/4/2021	HN-42S HN-42S 5/4/2021	HN-42I HN-42I 5/4/2021
Volatile Organic Compounds (VOCs)[1, 2]				
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 (Freon 113)		< 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
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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		**4.3**	< 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		**3.1**	< 1.0	< 1.0
Vinyl chloride		< 1.0	< 1.0	< 1.0
Total VOCs [3]		**7.4**	ND	ND
1,4 Dioxane [1,2]		**0.20 J**	< 0.23	**0.31**

See notes on last page

Table 6
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	MW-3-1 MW-3-1 4/12/2021	MW-3-1 REP041221ARH 4/12/2021	N-10624 N-10624 5/18/2021
Volatile Organic Compounds (VOCs)[1, 2]				
1,1,1-Trichloroethane		**0.58 J**	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		**2.3 J**	**2.1 J**	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		**2.9**	**3.0**	< 1.0
1,1-Dichloroethene		**2.7**	**2.6**	< 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		**0.55 J**	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene		**12.5**	**11.4**	< 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
o-Xylene		< 1.0	< 1.0	< 1.0
Styrene (Monomer)		< 1.0	< 1.0	< 1.0
Tetrachloroethene		**35.3**	**33.4**	< 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		**149**	**140**	< 1.0
Vinyl chloride		**15.9**	**13.6**	< 1.0
Total VOCs [3]		**222**	**206**	ND
1,4 Dioxane [1,2]		**15**	**13**	**2.6**

See notes on last page

Table 6
Concentrations of Volatile Organic Compounds
and 1,4 Dioxane in Monitoring Wells
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Samples were analyzed for VOCs using USEPA Method 8260C. Samples were analyzed for 1,4-dioxane using USEPA Method 8270D-SIM.

(2) Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).

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

Bold	Constituent detected
B	Contamination found in associated blank
J	Constituent value is estimated
REP	Blind Replicate Sample
µg/L	Micrograms per liter
VOCs	Volatile Organic Compounds
<1.0	Compound not detected above its laboratory quanitfication limit
ND	Not Detected

Table 7
Concentrations of Metals and 1,4-Dioxane in Monitoring Wells[1]
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituent (units in µg/L)	Well ID: Sample ID: Date:	GM-15SR GM-15SR 5/6/2021	GM-78I GM-78I 4/15/2021	GM-78S GM-78S 4/15/2021	MW-01GF MW-01GF 4/15/2021	MW-02GF MW-02GF 4/15/2021	PLT1 MW-04 PLT1 MW-04 5/6/2021	PLT1 MW-05 PLT1 MW-05 5/6/2021	PLT1 MW-06 PLT1 MW-06 5/6/2021	PLT1 MW-06 REP050621BA 5/6/2021
Metals [2]										
Cadmium (Total)		--	< 3.0	< 3.0	< 3.0	< 3.0	--	--	--	--
Cadmium (Dissolved)		--	< 3.0	< 3.0	< 3.0	< 3.0	--	--	--	--
Chromium (Total)		**437**	< 10	< 10	< 10	**234**	< 10	**424**	**156**	**149**
Chromium (Dissolved)		**462**	< 10	< 10	< 10	**238**	< 10	**429**	**154**	**149**
1,4-Dioxane [3]		< 0.24 B	**5.2 J**	**3.6 J**	**7.8 J**	**6.2 J**	< 2.2 B	< 0.24 B	< 0.24 J	< 0.24 BJ

Notes and Abbreviations:

(1) Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).
(2) Samples analyzed for total unfiltered and dissolved filtered cadium and chromium using USEPA Method 6010C.
(3) Samples were analyzed for 1,4-dioxane using USEPA Method 8270D-SIM.

REP Blind Replicate sample
µg/L Micrograms per liter
-- Not analyzed
<3.0 Compound not detected above its laboratory quanitfication limit
Bold Constituent detected
B Contamination found in associated blank
J Constituent value is estimated

Table 8
Concentrations of Volatile Organic Compounds
and 1,4 Dioxane in Outpost Wells [1]
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (units in ug/L)	Well ID: Sample ID: Sample Date:	BPOW 1-1 BPOW 1-1 4/19/2021	BPOW 1-2 BPOW 1-2 4/19/2021	BPOW 1-3 BPOW 1-3 4/20/2021
Volatile Organic Constituents [2, 4]				
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	**0.68**	**0.96**
Vinyl chloride		< 0.50	< 0.50	< 0.50
TVOCs [4]		ND	**0.68**	**0.96**
1,4 Dioxane [2,3]		< 0.200 J	< 0.200	**0.177 J**

See notes and abbreviations on last page.

Table 8
Concentrations of Volatile Organic Compounds
and 1,4 Dioxane in Outpost Wells [1]
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (units in ug/L)	Well ID: Sample ID: Sample Date:	BPOW 1-4 BPOW 1-4 4/19/2021	BPOW 1-5 BPOW 1-5 4/19/2021	BPOW 1-6 BPOW 1-6 4/19/2021
Volatile Organic Constituents [2, 4]				
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50
TVOCs [4]		ND	ND	ND
1,4 Dioxane [2,3]		**0.201**	< 0.200	< 0.200

See notes and abbreviations on last page.

Table 8
Concentrations of Volatile Organic Compounds
and 1,4 Dioxane in Outpost Wells [1]
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (units in ug/L)	Well ID: Sample ID: Sample Date:	BPOW 2-1 BPOW 2-1 4/20/2021	BPOW 2-2 BPOW 2-2 4/20/2021	BPOW 2-3 BPOW 2-3 4/20/2021
Volatile Organic Constituents [2, 4]				
1,1,1-Trichloroethane		< 0.50	< 0.50 J	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50 J	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50
TVOCs [4]		ND	ND	ND
1,4 Dioxane [2,3]		**0.871**	**0.772**	**2.77**

See notes and abbreviations on last page.

Table 8
Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells [1]
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (units in ug/L)	Well ID: Sample ID: Sample Date:	BPOW 3-1 BPOW 3-1 5/14/2021	BPOW 3-2 BPOW 3-2 5/17/2021	BPOW 3-3 BPOW 3-3 5/17/2021
Volatile Organic Constituents [2, 4]				
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50
TVOCs [4]		ND	ND	ND
1,4 Dioxane [2,3]		**0.767**	**3.98**	**7.01 J**

See notes and abbreviations on last page.

Table 8
Concentrations of Volatile Organic Compounds
and 1,4 Dioxane in Outpost Wells [1]
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (units in ug/L)	Well ID: Sample ID: Sample Date:	BPOW 3-4 BPOW 3-4 5/17/2021	BPOW 4-1R BPOW 4-1R 4/20/2021	BPOW 4-2R BPOW 4-2R 4/20/2021
Volatile Organic Constituents [2, 4]				
1,1,1-Trichloroethane		**0.42 J**	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		**4.6**	**60.1**	**36.3**
1,1,2-Trichloroethane		**1.3**	< 0.50	< 0.50
1,1-Dichloroethane		**0.63**	< 0.50	< 0.50
1,1-Dichloroethene		**5.3**	**1.2**	**0.81**
1,2-Dichloroethane		< 0.50	**0.20 J**	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		**1.8**	**0.45 J**	**0.33 J**
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 1.5 B	**0.30 J**	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		**2.1**	**0.35 J**	**0.21 J**
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	**0.61**
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethene		**172 D**	**1.8**	**3.0**
Vinyl chloride		< 0.50	< 0.50	< 0.50
TVOCs [4]		**188**	**64.4**	**41.3**
1,4 Dioxane [2,3]		**7.74**	**3.69**	**2.12**

See notes and abbreviations on last page.

Table 8
Concentrations of Volatile Organic Compounds
and 1,4 Dioxane in Outpost Wells (1)
Second Quarter 2021
Operable Unit 2
Northrop Grumman
Bethpage,New York

Notes and Abbreviations:

(1) These outpost wells have been recently repurposed for use as plume monitoring wells per the June 2015 Groundwater Monitoring Plan Addendum (ARCADIS of New York, Inc., 2015) as conditionally approved by the NYSDEC (August 25, 2015). Therefore, TVOC trigger levels that may have been previously established are no longer shown.

(2) Samples were analyzed for VOCs using USEPA Method 524.2. Samples were analyzed for 1,4-dioxane using USEPA Method 522.

(3) Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).

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

Bold	Value indicates constituent detected
TVOCs	Total Volatile Organic Compounds
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
µg/L	micrograms per liter
<0.5	Compound not detected above its laboratory quantification limit
D	Result was reported from the diluted run
J	Value is estimated concentration
ND	Not Detected

Figures

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X-LI-NY_R03ST
X-1496X01

FORMER RUCO POLYMER SITE

NWIRP SITE (FORMER NAVY SITE)

BETHPAGE COMMUNITY PARK

BETHPAGE HIGH SCHOOL

OU-2 ON-SITE GROUNDWATER REMEDY TREATMENT SYSTEMS

OU2 OUTFALL 006

OU2 OUTFALL 005

OU2 MAIN FACILITY REMEDIAL SYSTEM (TOWER 96)

OU2 MAIN FACILITY REMEDIAL SYSTEM (TOWER 102)

SOUTH BASINS

HWD 10208
HWD 8779
BWD 8768
BWD 8767
BWD 9591
BWD 6915
BWD 6916
BWD 8941
BWD 3876
BWD 8004
SFWD 7377
SFWD 5148
SFWD 4043
SFWD 6150
TOH(LWD) 7076
TOH(LWD) 5303
NYAW 9338
NYAW 8480
BPOW 1-1
BPOW 1-2
BPOW 1-3
BPOW 1-4
BPOW 1-5
BPOW 1-6
BPOW 2-1
BPOW 2-2
BPOW 2-3
BPOW 3-1
BPOW 3-2
BPOW 3-3
BPOW 3-4
BPOW 4-1R
BPOW 4-2R

HN-24I
HN-24S
HN-42S
HN-42I
HN-40S
HN-40I
FW-03
GM-13D
GM-16I
GM-16SR
GM-17SR
GM-17I
GM-17D
GM-32S
GM-19S
GM-19I
GM-39DA
GM-39DB
GM-73D3
GM-73D2
GM-73D
GM-74I
GM-74D
GM-74D2
GM-74D3
GM-18S
GM-18I
GM-18D
GM-33D2
GM-78S
GM-78I
GM-78D
GM-78D2
GM-20I
GM-20D
GM-21S
GM-21I
GM-21D
GM-21D2
GM-75D2
GM-79I
GM-79D
GM-71D2
GM-70D2
GM-35D2
GM-36D
GM-36D2
GM-37D
GM-37D2
GM-38D
GM-38D2
GM-34D
GM-34D2
GM-15SR
GM-15I
GM-15D
GM-15D2
MW-1GF
MW-2GF
MW-3R
MW-4
MW-5
MW-6
10597
10631
10600
9921
10624
10627
10634
10633
10628
10821

WELL 1
WELL 3R
WELL 3
WELL-17
WELL-18
WELL-19

PLANT 1
PLANT 2
PLANT 3
PLANT 5
PLANT 10
PLANT 14
PLANT 15
PLANT 21
PLANT 25
PLANT 26
PLANT 30
PLANT 35
PLANT 37
PLANT 111
PLANT 115
PLANT 116

HAYPATH ROAD
FARMERS AVENUE
(PLAINVIEW ROAD)
BROADWAY
GRUMMAN ROAD
LONG ISLAND RAILROAD
CENTRAL AVENUE
BLOOMINGDALE ROAD
NORTH WANTAGH AVE.
HICKSVILLE ROAD
STEWART AVENUE
SEAFORD - OYSTER BAY EXPRESSWAY
BETHPAGE STATE PARKWAY
(GARDINER'S AVENUE)
MALLARD ROAD
LOWLAND ROAD
PIKE
BOUNDARY AVENUE
(107)

0 1000' 2000'
APPROXIMATE SCALE IN FEET

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
BETHPAGE, NEW YORK
OPERABLE UNIT 2

LOCATIONS OF OF WELLS AND ON-SITE GROUNDWATER REMEDY

ARCADIS

FIGURE 1

PLANT 25

PLANT 23

PLANT 5

TOWER 102
TREATMENT
SYSTEM

WELL 3R

WEST RECHARGE BASINS
(OUTFALL 006)

TOWER 96
TREATMENT
SYSTEM

WELL 3

198 GRUMMAN
ROAD WEST

PLANT 2

LONG ISLAND RAILROAD

GRUMMAN ROAD WEST

PLANT 1

GRUMMAN ROAD EAST

AMC
NETWORKS
BROADCASTING
AND TECHNOLOGY

WELL
1

AERATION BASIN

LIRR

WELL
17

SOUTH RECHARGE BASINS
(OUTFALL 005)

WELL 18

WELL
19

SUN–SITE

LEGEND:

- FORMER NORTHROP GRUMMAN PROPERTY LINE
- INFLUENT LINE
- BYPASS
- STORM DRAIN (EFFLUENT)
- NON POTABLE WATER DISTRIBUTION LINE (EFFLUENT)
- RAILROAD TRACKS
- FENCE
- WELL 18 — REMEDIAL WELL
- BASIN
- ONCT — ON–SITE CONTAMINANT

NOTES:

1. DRAWING IS NOT TO BE USED FOR DESIGN PURPOSES. LAYOUT OF PIPING IS FOR REPRESENTATION ONLY (LOCATIONS ARE APPROXIMATE).
2. THE PIPING REPRESENTED IN THIS DRAWING MAY BE CONSTRUCTED OF CAST IRON PIPE (CIP), DUCTILE IRON PIP (DIP),ASBESTOS CEMENT PIP (ACP) OR TRANSITE, OR A COMBINATION OF THESE PIPE TYPES.

NORTHROP GRUMMAN
BETHPAGE, NEW YORK
OPERABLE UNIT 2

ONCT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SITE PLAN

ARCADIS

FIGURE
2

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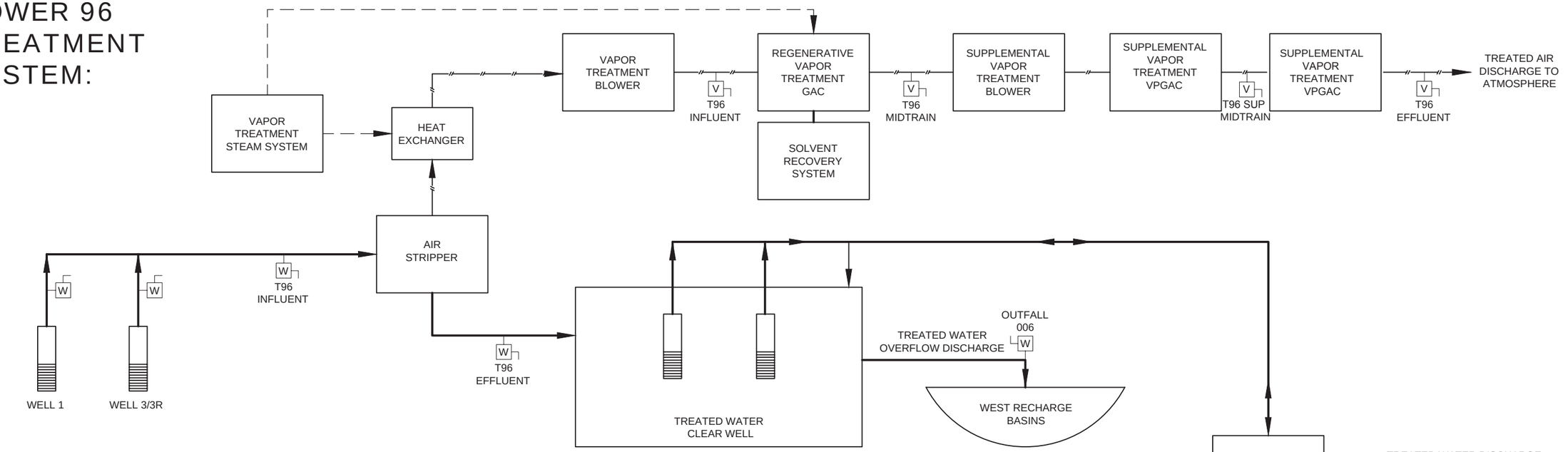
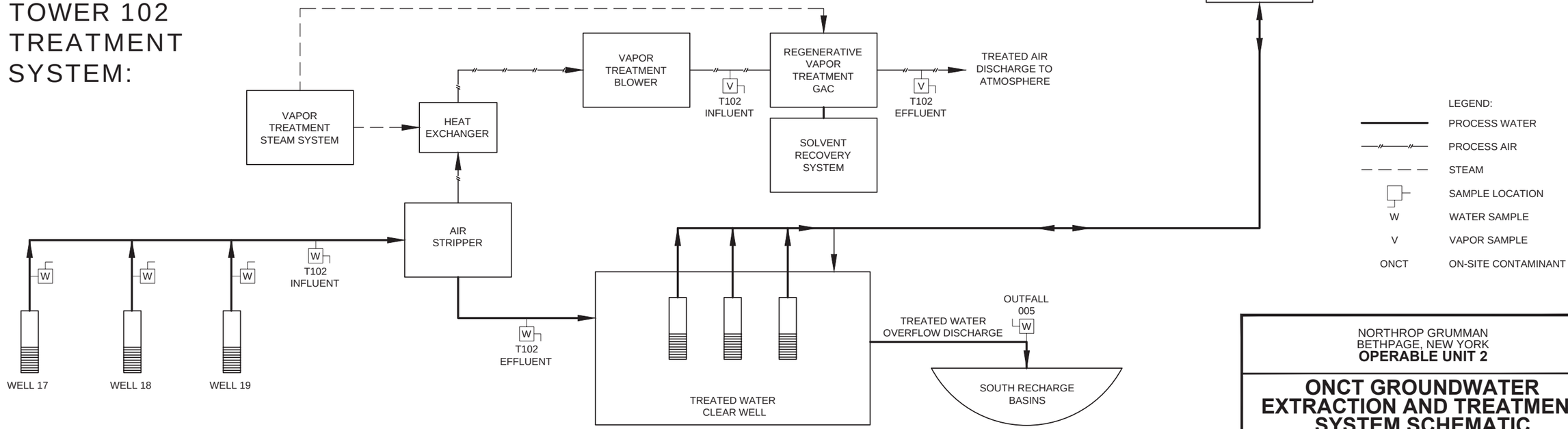
X-LI-NY_RD&ST
X-GW-SYS-PIPE

TOWER 96 TREATMENT SYSTEM:



TOWER 102 TREATMENT SYSTEM:



NORTHROP GRUMMAN
BETHPAGE, NEW YORK
OPERABLE UNIT 2

ONCT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SCHEMATIC

ARCADIS

FIGURE 3

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XBDR-BL