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Mr. Steven Scharf, P.E.
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ENVIRONMENT

Date:

November 30, 2015

Contact:

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Our ref:

NY001496. 314I.NAVI4

Subject:

Results of Third Quarter 2015 Groundwater Monitoring,
Operable Unit 2, Northrop Grumman Systems Corporation and Naval Weapons Industrial Reserve Plant (NWIRP) Sites, Bethpage, New York.
(NYSDEC Site #s 1-30-003A and B)

Dear Mr. Scharf:

On behalf of Northrop Grumman Systems Corporation (Northrop Grumman), ARCADIS is providing the NYSDEC with the validated results of Operable Unit 2 (OU2) groundwater monitoring, performed in accordance with the approved Groundwater Monitoring Plan (ARCADIS of New York, Inc. 2012) and the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M, Inc. 2003). Table 1 summarizes OU2 remedial system performance operational data and water balance. Tables 2 and 3 provide the validated analytical results of monitoring for this period. Table 4, 5 and 6 provide the validated analytical results for vapor samples collected from the system for this period. Figure 1 shows the site plan with well locations.

Please contact us if you have any questions or comments.

Sincerely,

Arcadis of New York, Inc.

David E. Stern
Senior Hydrogeologist

Enclosures

Mr. Henry Wilkie
Mr. Steven Scharf, P.E.
November 30, 2015

Copies:
Ed Hannon – Northrop Grumman
Fred Weber – Northrop Grumman
Walter Parish – NYSDEC Region 1
Steven Karpinski – New York State Department of Health
Michael Alarcon – Nassau County Department of Health
Joseph DeFranco – Nassau County Department of Health
Lora Fly – NAVFAC Midlant Environmental
David Brayack – TetraTech NUS, Inc.
Roger Smith – Glenn Springs Holdings, Inc.
Kevin Lumpe – Steel Equities
Thomas Taccone – USEPA
Robert Alvey – USEPA
Carol Stein-USEPA
Matthew Russo – Town of Oyster Bay
Stan Carey – Massapequa Water District
Matthew Snyder – New York American Water
Charles Prucha – South Farmingdale Water District
John Reinhardt – Town of Hempstead Water District
Michael Boufis – Bethpage Water District
Lois Lovisolo – Bethpage Public Library (Public Repository)
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TABLES

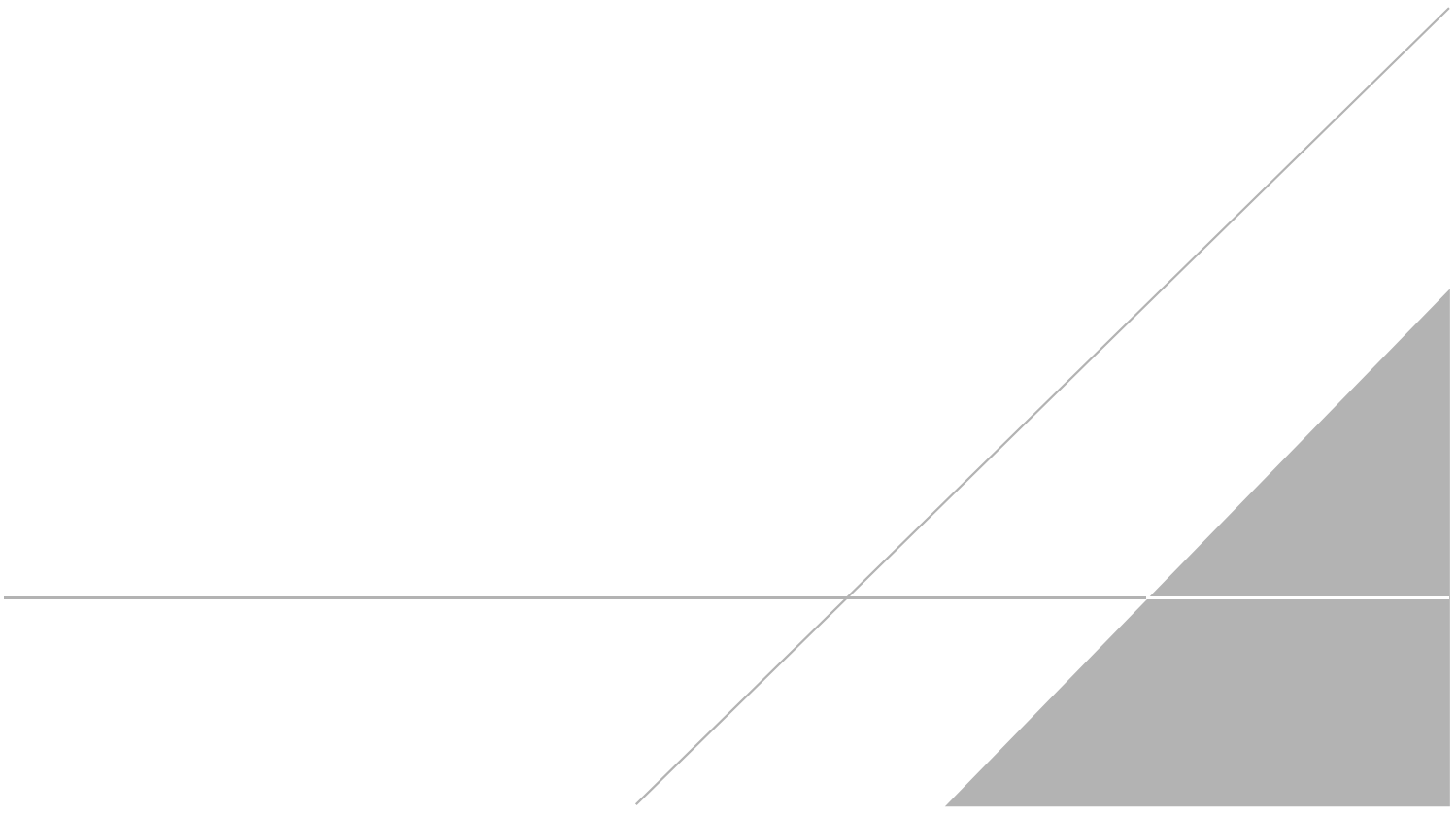


Table 1
Operational Summary for the On-Site Portion of the Operable Unit 2 Groundwater Remedy
Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

	Quarterly Flow Rates (gpm)		Quarterly Flow Volumes (MG)			Quarterly VOC Concentrations (µg/L)		VOC Mass Removed (lbs) [7]
	Design [2]	Average [3,4,17]	Design [2]	Actual [3,4]	% of Design	TCE [5]	TVOC [5,6]	Quarterly
Influent Groundwater								
Well 1 [11,13]	800	803	104.8	101.0	96%	852	900	760
Well 3R [12,13]	700	916	91.7	118.9	130%	557	620	603
Well 17 [14,16]	1,000	998	131.0	126.9	97%	178	220	228
Well 18 [16]	600	616	78.6	79.1	101%	61	83	54
Well 19 [15,16]	700	750	91.7	92.4	101%	153	180	136
Total	3,800	4,083	498	518	104%	--	--	1,781
Effluent Groundwater [8]								
Calpine	100 - 400	497	--	65.9	--	--	--	--
OXY Biosparge [10]	2 - 42	3.8	--	0.5	--	--	--	--
West Recharge Basins	1,112 - 1,455	852	--	111.6	--	--	0.90	--
South Recharge Basins	2,231	2,597	292.4	340.3	116%	--	1.18	--
Total Effluent Groundwater	--	3,950	--	518	--	--	--	--
Additional Flow to South Recharge Basins								
Storm Water Runoff Contributing to South Recharge Basins Flow Volume [18]				20.7				
Total Flow Volume to South Recharge Basins [19]			292.4	361.0	123%			
Treatment Efficiencies [9]								
Tower 96 System:	99.9%							
Tower 102 System:	>99.9%							

See notes on next page

Table 1
Operational Summary for the On-Site Portion of the Operable Unit 2 Groundwater Remedy
Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Notes:

(1) Quarterly reporting period: July 06, 2015 through October 05, 2015

(2) "Design" flow rates were determined for the five remedial wells and for the South Recharge Basins based on computer modeling (ARCADIS G&M, Inc. 2003c, modified in April 2005). Flow rates for Calpine, OXY Biosparge and West Recharge Basins are typical flow rates and are provided for reader information. "Design" flow volumes represent the volume of water that should be pumped/discharged during the reporting period and is calculated by multiplying the design rate by the reporting period duration.

(3) "Average" 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. During this reporting period, the remedial wells operated for the following percentage of the time: Well 1 (96%), Well 3R (99%), Well 17 (97%), Well 18 (98%), and Well 19 (94%). "Actual" volumes are determined via totalizing flow meters.

(4) "Average" flow rates for the system discharges represent the average flow rate during the entire reporting period and are determined by dividing the total flow during the reporting period by the reporting period duration. The Calpine and South Recharge Basins flow volumes are determined via totalizing flow meters. The West Recharge Basin flow is calculated by subtracting the cumulative flow to the other discharges from the total influent flow. Actual flow to the recharge basins are greater than shown because storm water combines with the plant effluent prior to discharge to the recharge basins.

(5) The TCE and TVOC concentrations for the remedial wells are from the quarterly sampling event performed during this reporting period on September 9, 2015 (Table 2).

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

(7) TVOC mass removed for the reporting period is calculated by multiplying the TVOC concentration from the quarterly sampling event and the quantity of water pumped during the reporting period.

(8) There are four discharges for the effluent groundwater: South Recharge Basins, West Recharge Basins, Calpine and OXY Biosparge system. Treated water is continuously discharged to the south and west recharge basins, and is available "on-demand" to both the Calpine Power Plant (Calpine) for use as make-up water, and the biosparge remediation system operated by Occidental Chemical (OXY Biosparge).

(9) Treatment System Efficiencies are calculated by dividing the difference between the influent and effluent TVOC concentrations by the influent concentration.

(10) The flow rate and volume for OXY Biosparge (Occidental Chemical) were estimated based on the average pumping rate calculated from data from April 2007 through March 2012.

(11) Well 1 was shutdown from September 21 through 24, 2015 due to replacement of the existing drop pipe with stainless steel pipe.

(12) A Well 3R pilot study was started on July 14, 2014 in an effort to increase the VOC mass removal through an increased pumping rate to approximately 1,000 gpm. The TVOC concentration and mass removal have increased since the initiation of the pilot study. On April 3, 2015 Well 3R flow rate was decreased to approximately 900 gpm to eliminate the increasing trend of TVOC concentration at Tower 96 effluent. Well 3R was brought online December 2013 to replace Well 3 due to decreasing specific capacity at Well 3 indicative of imminent well failure.

(13) Well 1 and Well 3R were shutdown on August 26, 2015 due to cleaning of the distribution tray at the Tower 96 air stripper.

(14) Well 17 was shut down due to pressure gauge issues and replacement, and installation of additional ball valve on the sampling port line.

(15) Well 19 was shut down from August 21 through 25, 2015 due to flow meter calibration and repair.

(16) Wells 17, 18 and 19 were shut down various times throughout the reporting period due to Tower 102 treatment system alarm testing, routine maintenance and well communication alarms.

(17) Total pumpage/recharge rates are accurate to -/+ 15% due to limitations in metering. Flow meter calibration is scheduled.

(18) Storm Water Runoff Volume is calculated by multiplying the adjusted tributary area and NOAA precipitation data for the reporting period. The adjusted tributary area is tributary area that is adjusted by the runoff coefficient to exclude the infiltration volume from the total rainfall volume. The tributary area, runoff coeficient, 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.

(19) Total Flow Volume to South Recharge Basins is estimated as a sum of flow volumes contributed from the Effluent Groundwater to South Recharge Basins and from Storm Water Runoff to South Recharge Basins.

Abbreviations:

--	Not Available or Not Applicable	TCE	Trichloroethene
TVOC	Total Volatile Organic Compounds	lbs	pounds
µg/L	micrograms per liter	MG	Million Gallons
VOC	Volatile Organic Compounds	NOAA	National Oceanic and Atmospheric Administration
gpm	gallons per minute	SPDES	State Pollutant Discharge Elimination System

Table 2
Water Sample Analytical Results for Groundwater
Remedial Wells and Treatment Systems, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Constituent (Units in µg/L)	Location: / Sample ID: / Date:	WELL 1 / WELL 1 / 9/9/2015	WELL 3R / WELL 3R / 9/9/2015	96 EFFLUENT / T96 EFFLUENT (GW) / 9/9/2015
Volatile Organic Compounds (VOCs)[1]				
1,1,1-Trichloroethane		<5.0	<5.0	<1.0
1,1,2,2-Tetrachloroethane		<5.0	<5.0	<1.0
1,1,2-Trichloroethane		<5.0	<5.0	<1.0
1,1-Dichloroethane		<5.0	**1.3 J**	<1.0
1,1-Dichloroethene		**2.8 J**	**3.9 J**	<1.0
1,2-Dichloroethane		<5.0	<5.0	<1.0
1,2-Dichloropropane		**5.0**	<5.0	<1.0
2-Butanone (MEK)		<50	<50	<10
2-Hexanone (MBK)		<25	<25	<5.0
4-methyl-2-pentanone (MIK)		<25	<25	<5.0
Acetone		<50	<50	<10
Benzene		<2.5	<2.5	<0.50
Bromodichloromethane		<5.0	<5.0	<1.0
Bromoform		<5.0	<5.0	<1.0
Bromomethane		<10	<10	<2.0
Carbon Disulfide		<10	<10	<2.0
Carbon tetrachloride		<5.0	<5.0	<1.0
Chlorobenzene		<5.0	<5.0	<1.0
Chloroethane		<5.0	<5.0	<1.0
Chloroform		<5.0	<5.0	<1.0
Chloromethane		<5.0	<5.0	<1.0
cis-1,2-dichloroethene		**4.6 J**	**6.4**	<1.0
cis-1,3-dichloropropene		<5.0	<5.0	<1.0
Dibromochloromethane		<5.0	<5.0	<1.0
Ethylbenzene		<5.0	<5.0	<1.0
Methylene Chloride		<10	<10	<2.0
Styrene		<5.0	<5.0	<1.0
Tetrachloroethene		**35.4**	**36.6**	<1.0
Toluene		<5.0	<5.0	<1.0
trans-1,2-dichloroethene		<5.0	<5.0	<1.0
trans-1,3-dichloropropene		<5.0	<5.0	<1.0
Trichloroethylene		**852**	**557**	**0.66 J**
Trichlorotrifluoroethane (Freon 113)		**4.3 J**	**4.8 J**	<5.0
Vinyl Chloride		<5.0	**12.7**	<1.0
Xylene-o		<5.0	<5.0	<1.0
Xylenes-m,p		<5.0	<5.0	<1.0
Total VOCs [2]		**900**	**620**	**0.66**
1,4-Dioxane[3]		**3.4**	**8.5**	**6.8**

See notes on last page.

Table 2
Water Sample Analytical Results for Groundwater
Remedial Wells and Treatment Systems, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Constituent (Units in µg/L)	Location: / Sample ID: / Date:	WELL 17 / WELL 17 / 9/9/2015	WELL 17-REP / REP-090915-EE-1 / 9/9/2015	WELL 18 / WELL 18 / 9/9/2015	WELL 19 / WELL 19 / 9/9/2015	102 EFFLUENT / T102 EFFLUENT (GW) / 9/9/2015
Volatile Organic Compounds (VOCs)[1]						
1,1,1-Trichloroethane		**0.51 J**	**0.54 J**	**0.87 J**	**0.43 J**	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0 J
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		**1.2**	**1.1**	**1.4**	**0.77 J**	<1.0
1,1-Dichloroethene		**1.9**	**2.0**	<1.0	**1.3**	<1.0
1,2-Dichloroethane		<1.0	<1.0	<1.0	**0.46 J**	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)		<10	<10	<10	<10	<10 J
2-Hexanone (MBK)		<5.0	<5.0	<5.0	<5.0	<5.0 J
4-methyl-2-pentanone (MIK)		<5.0	<5.0	<5.0	<5.0	<5.0 J
Acetone		<10	<10	<10	<10	<10 J
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		**0.43 J**	**0.47 J**	<1.0	**0.44 J**	<1.0
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		**3.8**	**3.7**	**2.0**	**18.3**	<1.0
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		**30**	**30.5**	**15.2**	**6.7**	<1.0
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		**178**	**177**	**61.3**	**153**	<1.0
Trichlorotrifluoroethane (Freon 113)		**2.4 J**	**2.5 J**	**2.3 J**	**0.97 J**	<5.0
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes-m,p		<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs [2]		**220**	**220**	**83**	**180**	0
1,4-Dioxane[3]		**2.8**	**3.0**	**2.2**	**1.9**	**2.8**

See notes on last page.

Table 2
Water Sample Analytical Results for Groundwater
Remedial Wells and Treatment Systems, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Notes and Abbreviations:

(1) VOC samples analyzed using Method 8260C.
(2) Total VOC results rounded to two significant figures.
(3) 1,4-Dioxane samples analyzed using Method 8270D SIM.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2014).

Bold	Constituent detected
VOCs	Volatile Organic Compounds
µg/L	Micrograms per liter
J	Constituent value is estimated
REP	Field replicate
<5.0	Compound not detected above its laboratory quantification limit.
OU2	Operable Unit 2

Table 3
Concentrations of Site Related Volatile Organic Compunds and 1,4-Dioxane in Outpost Wells[1]
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Constituent (Units in µg/L)	Well: / Sample ID: / Date:	BPOW 1-1 / BPOW 1-1 / 8/11/2015	BPOW 1-2 / BPOW 1-2 / 8/11/2015	BPOW 1-3 / BPOW 1-3 / 8/13/2015	BPOW 1-4 / BPOW 1-4 / 8/18/2015	BPOW 1-5 / BPOW 1-5 / 8/18/2015	BPOW 1-6 / BPOW 1-6 / 8/17/2015	BPOW 2-1 / BPOW 2-1 / 8/10/2015
Volatile Organic Compounds (VOCs) [3]								
1,1,1-Trichloroethane		**0.67**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane		**0.21J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethene		**0.6**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chlorobenzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform		**0.15J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorotrifluoroethane (Freon 113)		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene		**1.1**	**0.30J**	<0.50	<0.50	<0.50	<0.50	<0.50
Total Site-Related VOCs [4] :		**2.7**	**0.3**	0	0	0	0	0
1,4-Dioxane [5]		<0.20	<0.20	<0.21	<0.21	<0.20	<0.22	**0.09J**

See notes on last page.

Table 3
Concentrations of Site Related Volatile Organic Compunds and 1,4-Dioxane in Outpost Wells[1]
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Constituent (Units in µg/L)	Well: / Sample ID: / Date:	BPOW 2-2 / BPOW 2-2 / 8/14/2015	BPOW 2-3 / BPOW 2-3 / 8/14/2015	BPOW 3-1 / BPOW 3-1 / 8/12/2015	BPOW 3-2 / BPOW 3-2 / 9/17/2015	BPOW 3-3 / BPOW 3-3 / 8/25/2015	BPOW 3-4 / BPOW 3-4 / 8/25/2015	BPOW 3-4 / REP082515BT1 / 8/25/2015
Volatile Organic Compounds (VOCs) [3]								
1,1,1-Trichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	**0.79J**	**0.74J**
1,1-Dichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	**0.61**	**0.64**
1,2-Dichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride		<0.50	<0.50	<0.50	<0.50	<0.50	**1**	**1.1**
Chlorobenzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform		<0.50	<0.50	<0.50	<0.50	<0.50	**1.3**	**1.4**
cis-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	**1.1**	**1.1**
Trichlorotrifluoroethane (Freon 113)		<1.0	<1.0	<1.0	<1.0	<1.0	**0.75J**	**0.72J**
Tetrachloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	**60.9D**	**61D**
Total Site-Related VOCs [4] :		0	0	0	0	0	**66**	**67**
1,4-Dioxane [5]		<0.21	<0.21	**0.28**	**1.1**	**0.6**	**0.77J**	**0.32J**

See notes on last page.

Table 3
Concentrations of Site Related Volatile Organic Compunds and 1,4-Dioxane in Outpost Wells[1]
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Constituent (Units in µg/L)	Well: / Sample ID: / Date:	BPOW 4-1R[2] / BPOW 4-1R / 8/26/2015	BPOW 4-2R[2] / BPOW 4-2R / 8/26/2015
Volatile Organic Compounds (VOCs) [3]			
1,1,1-Trichloroethane		<0.50	**0.063J**
1,1,2,2-Tetrachloroethane		<0.50	<0.50
1,1,2-Trichloroethane		<0.50	<0.50
1,1-Dichloroethane		<0.50	<0.50
1,1-Dichloroethene		**0.38J**	**0.52**
1,2-Dichloroethane		**0.13J**	**0.072J**
Carbon Tetrachloride		**0.21J**	**0.19J**
Chlorobenzene		<0.50	<0.50
Chloroform		**0.15J**	**0.090J**
cis-1,2-Dichloroethene		**0.086J**	**0.18J**
Trichlorotrifluoroethane (Freon 113)		**14.7**	**12.9**
Tetrachloroethene		<0.50	<0.50
trans-1,2-Dichloroethene		<0.50	<0.50
Trichloroethene		**0.92J**	**1.6**
Total Site-Related VOCs [4] :		**17**	**16**
1,4-Dioxane [5]		**0.58**	**0.41**

See notes on last page.

Table 3
Concentrations of Site Related Volatile Organic Compunds and 1,4-Dioxane in Outpost Wells(1)
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

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) The NAVY abandoned original Wells BPOW4-1 and BPOW4-2 and installed replacement Wells BPOW4-1R and BPOW4-2R between August, 2014 and October, 2014.

(3) Samples analyzed for site related VOCs per the PWSCP (ARCADIS G&M, Inc. 2003) using USEPA Method 524.2

(4) Site-related VOCs were established for the wells identified above in the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M, Inc. 2003). Total Site-Related VOCs rounded to two significant figures.

(5) Samples analyzed for 1,4-Dioxane by USEPA Method 8270D SIM.

Bold	Bold value indicates constituent detected.
J	Constituent value is estimated
D	Concentration is based on a diluted sample analysis
REP	Replicate Sample
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.

Table 4
Vapor Sample Analytical Results for Treatment Systems
Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Constituent (Units in µg/m3)	Sample ID: Date:	T96 Influent 9/9/2015	T96 Midtrain 9/9/2015	T96 Effluent 9/9/2015	T102 Influent 9/9/2015	T102 Effluent 9/9/2015
1,1,1-Trichloroethane		<65	**9.3**	<0.55	**10**	<0.55
1,1,2,2-Tetrachloroethane		<82	<5.5	<0.69	<5.5	<0.69
1,1,2-Trichloroethane		<65	<4.4	<0.55	<4.4	<0.55
1,1-Dichloroethane		49.0 J	**39**	**34**	**23**	**8.1**
1,1-Dichloroethylene		**148**	**142**	**60.7**	**52.7**	**35**
1,2-Dichloroethane		<97	<6.5	<0.81	<6.5	<0.81
1,2-Dichloropropane		84.1 J	**18**	<0.92	<7.4	<0.92
Benzene		<77	<5.1	<0.64	<5.1	**0.51**
Bromodichloromethane		<80	< 5.4	<0.67	< 5.4	<0.67
Bromoform		<49	< 3.3	<0.41	< 3.3	<0.41
Bromomethane		<93	< 6.2	<0.78	< 6.2	<0.78
Carbon disulfide		<75	< 5.0	<0.62	< 5.0	<0.62
Carbon tetrachloride		<30	<2.0	<0.25	<2.0	<0.25
Chlorobenzene		<110	<7.4	<0.92	<7.4	<0.92
Chloroethane		<63	**11**	**13**	<4.2	<0.53
Chloroform		<120	6.8 J	**2.5**	**8.8**	**1.6**
Chloromethane		<50	<3.3	**1.6**	<3.3	**1.3**
cis-1,3-Dichloropropene		<110	<7.3	<0.91	<7.3	<0.91
Dibromochloromethane		<100	<6.8	<0.85	<6.8	<0.85
Ethylbenzene		<100	<6.9	<0.87	<6.9	0.69 J
Methylene chloride		**154**	<5.6	**1.7**	<5.6	**1.5**
Styrene		<100	<6.8	<0.85	<6.8	<0.85
Tetrachloroethylene		**1,460**	**178**	**0.37**	**411**	**3.7**
Toluene		<90	<6.0	<0.75	< 6.0	**21**
trans-1,3-Dichloropropene		<110	<7.3	<0.91	<7.3	<0.91
Trichloroethylene		**29,900**	**8,010**	**3.8**	**3,710**	**12**
Trichlorotrifluoroethane (Freon 113)		**189**	**109**	**2.6**	**52**	**7.7**
Vinyl chloride		**268**	**284**	**28.4**	<0.82	<0.10
Xylene-o		<100	<6.9	<0.87	<6.9	0.56 J
Xylenes - m,p		<100	<6.9	<0.87	<6.9	**1.9**
Total VOCs [(2)]		**32,104**	**8,617**	**54**	**4,182**	**96**

See notes on last page.

Table 4
Vapor Sample Analytical Results for Treatment Systems
Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Notes and Abbreviations:

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

(2) "Total VOCs" represents the sum of individual concentrations of compounds detected rounded to the nearest whole number.

Acronyms\Key:

700 Bold data indicates that the analyte was detected at or above its reporting limit.

16 Data that is not bold indicates analyte detected but below its reporting limit; the 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.

$\mu g/m^3$ Micrograms per cubic meter.

Table 5A
Summary of SCREEN3 Model Input and Outputs
Tower 96 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Parameters	Date Sampled:	11/13/2014	3/16/2015	5/11/2015	9/9/2015
SCREEN3 Model Input					
Source Type		Point	Point	Point	Point
Emission Rate (g/s)		1	1	1	1
Stack Height (ft)		55	55	55	55
Stack Height (m)		16.8	16.8	16.8	16.8
Stack Inside Diameter (m)		0.508	0.508	0.508	0.508
Air Flow Rate (scfm@stack temp)(1)		4,606	4,627	4,688	4,581
Air Flow Rate (acfm)(2), (3)		4,780	4,810	4,936	4,840
Stack Gas Exit Temperature (K)(2)		305	306	310	311
Ambient Air Temperature (K)(4)		286	277	287	293
Receptor Height (m)(5)		1.5	1.5	1.5	1.5
Urban/Rural		Urban	Urban	Urban	Urban
Building Height (m)		6.7	6.7	6.7	6.7
Min Horizontal Bldg Dim (m)		9.8	9.8	9.8	9.8
Max Horizontal Bldg Dim (m)		12.8	12.8	12.8	12.8
Consider Bldg Downwash?		Yes	Yes	Yes	Yes
Simple/Complex Terrain Above Stack		Simple	Simple	Simple	Simple
Simple/Complex Terrain Above Stack Base		Simple	Simple	Simple	Simple
Meteorology		Full	Full	Full	Full
Automated Distances Array		Yes	Yes	Yes	Yes
Terrain Height Above Stack Base		0	0	0	0
SCREEN3 Model Output					
1-HR Max Concentration at Receptor Height (µg/m^3) (6)		198	197	195	199
Annualization Factor(7)		0.08	0.08	0.08	0.08
Average Annual Concentration at Receptor Height (µg/m^3)(8)		15.8	15.8	15.6	15.9
Distance To Max Concentration (m)(9)		110	110	110	109

See notes on last page.

Table 5A
Summary of SCREEN3 Model Input and Outputs
Tower 96 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Notes:

(1) The stack air flow rate at the stack temperature (in scfm) was calculated by multiplying the stack air flow rate in acfm by the ratio of the standard temperature to the actual stack gas exit temperature in degrees Kelvin.
(2) The stack air flow rate (in acfm) and temperature were measured using inline instrumentation. Values were measured at the blower effluent location.
(3) The stack air flow rate is taken from the actual stack air flow rate on the day of sampling.
(4) The ambient temperature was recorded from weather.newsday.com website for Islip, New York. The mean actual temperature from the website was used in the model calculation
(5) The receptor height corresponds to the average inhalation level.
(6) SCREEN3 calculated constituent concentration at listed conditions at the specified inhalation level.
(7) A USEPA time averaging conversion factor of 1/0.08 was used to convert the 1-hour maximum concentration output to an annual average.
(8) Average annual constituent concentration at the receptor height was calculated by multiplying the one hour maximum concentration by the annualization factor.
(9) SCREEN3 calculated distance to the 1-hour maximum concentration.

Acronyms\Key:

µg/m^3	Micrograms per cubic meter.
acfm	Actual cubic feet per minute.
ft	Feet.
g/s	Grams per second.
K	Kelvin.
m	Meters.
scfm	Standard cubic feet per minute.
USEPA	United States Environmental Protection Agency.

Table 5B
Summary of Maximum Allowable Stack Concentration Calculations
Tower 96 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Compound	SGC[1] (µg/m^3)	Actual Effluent Concentrations[2] (µg/m^3)			
		11/13/2014	3/16/2015	5/11/2015	9/9/2015
1,1-Dichloroethane	95,000 [3]	0	8.9	0.57	34
1,1-Dichloroethene	188,000 [3]	3.7	138	2.3	60.7
Benzene	1,300	0.38	0	0	0
Chloroethane	619,000 [3]	19	20	12	13
Chloroform	150	0	0.63	0	2.5
Chloromethane	22,000	1.2	3.7	3.5	1.6
Methylene Chloride	14,000	18	1.5	1.7	1.7
Tetrachloroethylene	1,000	1.4	14	2.7	0.37
Toluene	37,000	0.49	0	0	0
Trichloroethylene	14,000	2	203	32	3.8
Trichlorotrifluoroethane (Freon 113)	960,000	0	4.5	0	2.6
Vinyl chloride	180,000	99.9	281	1.0	28.4

Compound	AGC[4] (µg/m^3)	Annual MASC[5] (µg/m^3)			
		11/13/2014	3/16/2015	5/11/2015	9/9/2015
1,1-Dichloroethane	0.63	1.77E+04	1.76E+04	1.73E+04	1.73E+04
1,1-Dichloroethene	200	5.61E+06	5.58E+06	5.50E+06	5.51E+06
Benzene	0.13	3.65E+03	3.62E+03	3.58E+03	3.58E+03
Chloroethane	10,000	2.81E+08	2.79E+08	2.75E+08	2.75E+08
Chloroform	14.700	4.12E+05	4.10E+05	4.05E+05	4.05E+05
Chloromethane	90	2.53E+06	2.51E+06	2.48E+06	2.48E+06
Methylene Chloride	60	1.68E+06	1.67E+06	1.65E+06	1.65E+06
Tetrachloroethylene	4.0	1.12E+05	1.12E+05	1.10E+05	1.10E+05
Toluene	5,000	1.40E+08	1.39E+08	1.38E+08	1.38E+08
Trichloroethylene	0.2	5.61E+03	5.58E+03	5.50E+03	5.51E+03
Trichlorotrifluoroethane (Freon 113)	180,000	5.05E+09	5.02E+09	4.95E+09	4.96E+09
Vinyl chloride	0.068	1.91E+03	1.90E+03	1.87E+03	1.87E+03

See notes on last page.

Table 5B
Summary of Maximum Allowable Stack Concentration Calculations
Tower 96 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Compound	Percent of Annual MASC[6]				Cumulative % MASC[7]
	11/13/2014	3/16/2015	5/11/2015	9/9/2015	
1,1-Dichloroethane	0.0%	0.05%	0.0%	0.20%	0.08%
1,1-Dichloroethene	0.0%	0.0%	0.0%	0.0%	0.0%
Benzene	0.01%	0.0%	0.0%	0.0%	0.0%
Chloroethane	0.0%	0.0%	0.0%	0.0%	0.0%
Chloroform	0.0%	0.0%	0.0%	0.0%	0.0%
Chloromethane	0.0%	0.0%	0.0%	0.0%	0.0%
Methylene Chloride	0.0%	0.0%	0.0%	0.0%	0.0%
Tetrachloroethylene	0.0%	0.01%	0.0%	0.0%	0.0%
Toluene	0.0%	0.0%	0.0%	0.0%	0.0%
Trichloroethylene	0.04%	3.64%	0.58%	0.07%	1.35%
Trichlorotrifluoroethane (Freon 113)	0.0%	0.0%	0.0%	0.0%	0.0%
Vinyl chloride	5.24%	14.82%	0.05%	1.52%	6.45%

Notes:

(1) Refers to the compound-specific SGC per the NYSDEC DAR-1 AGC/SGC tables revised February 28, 2014.

(2) Only VOCs that were detected in the effluent vapor sample (T96 EFF) over the past year of system operation are included in this table.

(3) An SGC was not provided in the DAR-1 AGC/SGC Tables, dated February 28, 2014. An interim SGC was developed based on guidelines provided in Section IV.A.2.b.1 of the NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants, 1991 edition.

(4) AGC refers to the compound-specific annual guideline concentration per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014. NYSDEC DAR-1 AGCs were scaled using the results of a site-specific annual USEPA SCREEN 3 model to calculate the annual MASC per monitoring event.

(5) Annual MASC was calculated by dividing the product of the AGC of a compound and the ratio of the SCREEN3 gas emission rate and the SCREEN 3 average annual concentration at receptor height by the air flow rate at the stack temperature and multiplying by the appropriate conversion factors.

(6) Percent of MASC was calculated by dividing the actual effluent concentration by the MASC for the past four quarters of operation. Percentages have been rounded to two digits.

(7) Cumulative percent of the MASC was calculated using a time-weighted average of the percent MASC per event. Percentages have been rounded to two digits.

Acronyms\Key:

µg/m^3	Micrograms per cubic meter.
AGC	Annual guideline concentration.
SGC	Short-term guideline concentration
DAR-1	Division of Air Resources-1
MASC	Maximum allowable stack concentration.
NL	Compound concentration is not listed
NYSDEC	New York State Department of Environmental Conservation

Table 6A
Summary of SCREEN3 Model Input and Outputs
Tower 102 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Parameters	Date Sampled:	11/13/14	3/16/15	5/11/15	9/9/15
SCREEN3 Model Input					
Source Type		Point	Point	Point	Point
Emission Rate (g/s)		1	1	1	1
Stack Height (ft)		69.52	69.52	69.52	69.52
Stack Height (m)		21.19	21.19	21.19	21.19
Stack Inside Diameter (m)		0.61	0.61	0.61	0.61
Air Flow Rate (scfm@stack temp)(1)		8,123	8,231	8,068	7,930
Air Flow Rate (acfm)(2), (3)		8,320	8,420	8,220	8,080
Stack Gas Exit Temperature (K)(2)		301	301	300	300
Ambient Air Temperature (K)(4)		286	277	287	293
Receptor Height (m)(5)		1.5	1.5	1.5	1.5
Urban/Rural		Urban	Urban	Urban	Urban
Building Height (m)		7.62	7.62	7.62	7.62
Min Horizontal Bldg Dim (m)		12.5	12.5	12.5	12.5
Max Horizontal Bldg Dim (m)		15.54	15.54	15.54	15.54
Consider Bldg Downwash?		Yes	Yes	Yes	Yes
Simple/Complex Terrain Above Stack		Simple	Simple	Simple	Simple
Simple/Complex Terrain Above Stack Base		Simple	Simple	Simple	Simple
Meteorology		Full	Full	Full	Full
Automated Distances Array		Yes	Yes	Yes	Yes
Terrain Height Above Stack Base		0	0	0	0
SCREEN3 Model Output					
1-HR Max Concentration at Receptor Height (µg/m^3) (6)		108.0	106.6	108.7	110.6
Annualization Factor(7)		0.08	0.08	0.08	0.08
Average Annual Concentration at Receptor Height (µg/m^3)(8)		8.6	8.5	8.7	8.8
Distance To Max Concentration (m)(9)		146	146	145	144

See notes on last page.

Table 6A
Summary of SCREEN3 Model Input and Outputs
Tower 102 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Notes:

(1) The stack air flow rate at the stack temperature (in scfm) was calculated by multiplying the stack air flow rate in acfm by the ratio of the standard temperature to the actual stack gas exit temperature in degrees Kelvin.

(2) The stack air flow rate (in acfm) and temperature were measured using inline instrumentation. Values were measured at the blower effluent location.

(3) The stack air flow rate is taken from the actual stack air flow rate on the day of sampling.

(4) The ambient temperature was recorded from weather.newsday.com website for Islip, New York. The mean actual temperature from the website was used in the model calculation

(5) The receptor height corresponds to the average inhalation level.

(6) SCREEN3 calculated constituent concentration at listed conditions at the specified inhalation level.

(7) A USEPA time averaging conversion factor of 1/0.08 was used to convert the 1-hour maximum concentration output to an annual average.

(8) Average annual constituent concentration at the receptor height was calculated by multiplying the one hour maximum concentration by the annualization

(9) SCREEN3 calculated distance to the 1-hour maximum concentration.

Acronyms\Key:

µg/m^3	Micrograms per cubic meter.
acfm	Actual cubic feet per minute.
ft	Feet.
g/s	Grams per second.
K	Kelvin.
m	Meters.
scfm	Standard cubic feet per minute.
USEPA	United States Environmental Protection Agency.

Table 6B
Summary of Maximum Allowable Stack Concentration Calculations
Tower 102 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Compound	SGC[1] ($\mu g/m^3$)	Actual Effluent Concentrations[2] ($\mu g/m^3$)			
		11/13/2014	3/16/2015	5/11/2015	9/9/2015
1,1,1-Trichloroethane	9,000	0	0	0.55	0
1,1-Dichloroethane	95,000 [3]	4.5	3.2	5.7	8.1
1,1-Dichloroethene	188,000 [3]	15	11	21	35
Benzene	1,300	0	0	0	0.51
Carbon Disulfide	6,200	0	1.6	0	0
Chloroform	150	1.1	0.88	1.6	1.6
Chloromethane	22,000	1.1	1.2	0.99	1.3
Ethylbenzene	54,000	0	0	0	0.69
Methylene Chloride	14,000	13	16	1.3	1.5
Tetrachloroethene	1,000	7.5	5.2	1.6	3.7
Toluene	37,000	0	0	0	21
Trichloroethene	14,000	22	20	34	12
Trichlorotrifluoroethane (Freon 113)	960,000	4.4	3.1	7.1	7.7
Vinyl Chloride	180,000	0.41	0.31	0	0
Xylene-m,p	4,300	0	0	0	1.9
Xylene-o	4,300	0	0	0	0.56

See notes on last page.

Table 6B
Summary of Maximum Allowable Stack Concentration Calculations
Tower 102 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Compound	AGC[4] ($\mu g/m^3$)	Annual MASC[5] (µg/m3)			
		11/13/2014	3/16/2015	5/11/2015	9/9/2015
1,1,1-Trichloroethane	5,000	1.48E+08	1.48E+08	1.48E+08	1.49E+08
1,1-Dichloroethane	0.63	1.87E+04	1.87E+04	1.87E+04	1.88E+04
1,1-Dichloroethene	200	5.92E+06	5.92E+06	5.93E+06	5.96E+06
Benzene	0.13	3.85E+03	3.85E+03	3.85E+03	3.87E+03
Carbon Disulfide	700	2.07E+07	2.07E+07	2.07E+07	2.09E+07
Chloroform	14.700	4.35E+05	4.35E+05	4.36E+05	4.38E+05
Chloromethane	90	2.67E+06	2.66E+06	2.67E+06	2.68E+06
Ethylbenzene	1,000	2.96E+07	2.96E+07	2.96E+07	2.98E+07
Methylene Chloride	60.0	1.78E+06	1.78E+06	1.78E+06	1.79E+06
Tetrachloroethene	4	1.18E+05	1.18E+05	1.19E+05	1.19E+05
Toluene	5,000	1.48E+08	1.48E+08	1.48E+08	1.49E+08
Trichloroethene	0.2	5.92E+03	5.92E+03	5.93E+03	5.96E+03
Trichlorotrifluoroethane (Freon 113)	180,000	5.33E+09	5.33E+09	5.33E+09	5.36E+09
Vinyl Chloride	0.068	2.01E+03	2.01E+03	2.01E+03	2.03E+03
Xylene-m,p	100	2.96E+06	2.96E+06	2.96E+06	2.98E+06
Xylene-o	100	2.96E+06	2.96E+06	2.96E+06	2.98E+06

See notes on last page.

Table 6B
Summary of Maximum Allowable Stack Concentration Calculations
Tower 102 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

Compound	Percent of Annual MASC[6]				Cumulative % MASC[7]
	11/13/14	03/16/15	5/11/2015	9/9/2015	
1,1,1-Trichloroethane	0.0%	0.0%	0.0%	0.0%	0.0%
1,1-Dichloroethane	0.02%	0.02%	0.03%	0.04%	0.03%
1,1-Dichloroethene	0.0%	0.0%	0.0%	0.0%	0.0%
Benzene	0.0%	0.0%	0.0%	0.01%	0.0%
Carbon Disulfide	0.0%	0.0%	0.0%	0.0%	0.0%
Chloroform	0.0%	0.0%	0.0%	0.0%	0.0%
Chloromethane	0.0%	0.0%	0.0%	0.0%	0.0%
Ethylbenzene	0.0%	0.0%	0.0%	0.0%	0.0%
Methylene Chloride	0.0%	0.0%	0.0%	0.0%	0.0%
Tetrachloroethene	0.01%	0.0%	0.0%	0.0%	0.0%
Toluene	0.0%	0.0%	0.0%	0.0%	0.0%
Trichloroethene	0.37%	0.34%	0.57%	0.20%	0.33%
Trichlorotrifluoroethane (Freon 113)	0.0%	0.0%	0.0%	0.0%	0.0%
Vinyl Chloride	0.02%	0.02%	0.0%	0.0%	0.01%
Xylene-m,p	0.0%	0.0%	0.0%	0.0%	0.0%
Xylene-o	0.0%	0.0%	0.0%	0.0%	0.0%

See notes on last page.

Table 6B
Summary of Maximum Allowable Stack Concentration Calculations
Tower 102 Treatment System, Third Quarter 2015
Northrop Grumman Systems Corporation, Operable Unit 2
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

Notes:

(1) Refers to the compound-specific SGC per the NYSDEC DAR-1 AGC/SGC tables revised February 28, 2014.

(2) Only VOCs that were detected in the effluent vapor sample (T102 EFF) over the past year of system operation are included in this table.

(3) An SGC was not provided in the DAR-1 AGC/SGC Tables, dated February 28, 2014. An interim SGC was developed based on guidelines provided in Section IV.A.2.b.1 of the NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants, 1991 edition.

(4) AGC refers to the compound-specific annual guideline concentration per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014. NYSDEC DAR-1 AGCs were scaled using the results of a site-specific annual USEPA SCREEN 3 model to calculate the annual MASC per monitoring event.

(5) Annual MASC was calculated by dividing the product of the AGC of a compound and the ratio of the SCREEN3 gas emission rate and the SCREEN 3 average annual concentration at receptor height by the air flow rate at the stack temperature and multiplying by the appropriate conversion factors.

(6) Percent of MASC was calculated by dividing the actual effluent concentration by the MASC for the past four quarters of operation. Percentages have been rounded to two digits.

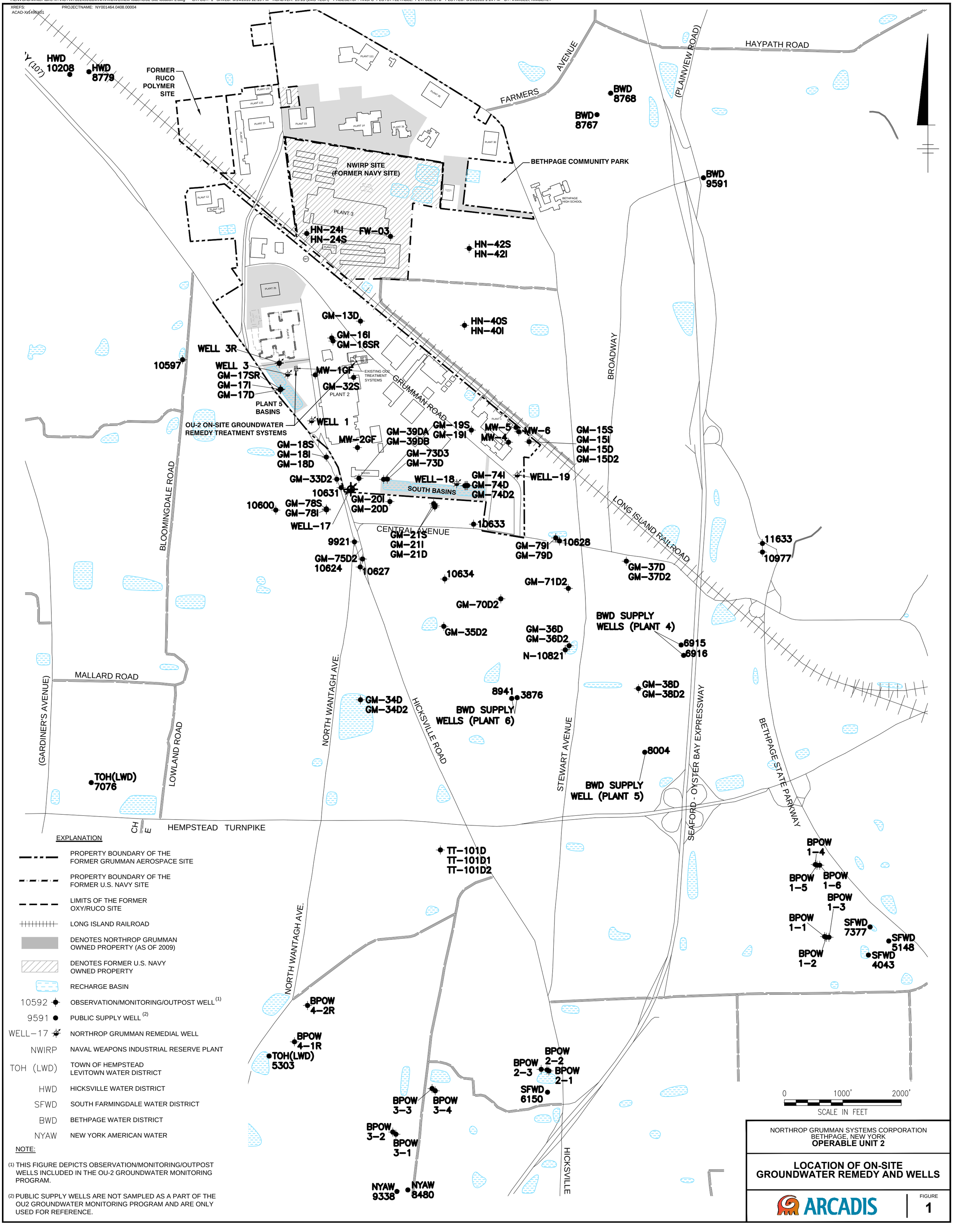
(7) Cumulative percent of the MASC was calculated using a time-weighted average of the percent MASC per event. Percentages have been rounded to two digits.

Acronyms\Key:

-- Compound not reported, unable to compute MASC
AGC Annual guideline concentration.
NL Compound concentration not listed
DAR-1 Division of Air Resources-1
MASC Maximum allowable stack concentration.
$\mu g/m^3$ Micrograms per cubic meter.
NYSDEC New York State Department of Environmental Conservation

FIGURES

CITY:MELVILLE DIV/GROUP:ENV DB:ALS LD: PIC: PM:CSG TM:DS LYR:ON=*;OFF=*REF*
I:\ENVCAD\WhitePlains-NY\ACT\NY001496\314I\NAVI4\DWG\New folder\OU2 Site location-2.dwg LAYOUT: 1 SAVED: 8/14/2015 12:15 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ANSI C PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 8/14/2015 1:14 PM BY: IAMICELI, KIMBERLY
XREFS: PROJECTNAME: NY001464.0408.00004
ACAD-X:1496X01



EXPLANATION

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER U.S. NAVY SITE
- LIMITS OF THE FORMER OXY/RUCO SITE
- LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2009)
- DENOTES FORMER U.S. NAVY OWNED PROPERTY
- RECHARGE BASIN
- 10592 OBSERVATION/MONITORING/OUTPOST WELL (1)
- 9591 PUBLIC SUPPLY WELL (2)
- WELL-17 NORTHROP GRUMMAN REMEDIAL WELL
- 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 USED FOR REFERENCE.

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

LOCATION OF ON-SITE GROUNDWATER REMEDY AND WELLS

ARCADIS

FIGURE 1