

Mr. Jason Pelton
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Subject:

January to June 2021 Semi-Annual Progress Report
Northrop Grumman Systems Corporation
Operable Unit 3 (OU3),
NYSDEC Site ID # 1-30-003A,
Bethpage, New York

Our Ref: 30059266
Date: July 22, 2021

Dear Jason,

In accordance with Section III of Administrative Order on Consent (AOC) Index # W1-0018-04-01, and the May 2011 Work Plan for Modification of AOC Progress Report (work plan), this letter report describes OU3 activities performed by Northrop Grumman from January through June 2021. Activities planned for June through December 2021 are also summarized. In accordance with the approved work plan, these reports will be submitted to the NYSDEC on a semi-annual basis until it is determined that the reports are no longer necessary. The site plan showing well locations is provided on **Figure 1**.

OU3 Activities Conducted During January Through June 2021

Bethpage Park Soil Gas Containment System (Formerly Soil Gas IRM)

- Continued Operation, Maintenance, and Monitoring (OM&M) of the Bethpage Park Soil Gas Containment System (BPSGCS).
- Submitted BPSGCS 2020 Annual and First Quarter 2021 OM&M Reports (March and May, respectively) to the NYSDEC.
- Significant shutdown instances this period are summarized below. In each instance the system was fully restored following shutdown.
 - March 2021 shutdown for 4 hours for condensate removal.

Bethpage Park Groundwater Containment System (Formerly Groundwater IRM)

- Continued OM&M of the Bethpage Park Groundwater Containment System (BPGWCS).
- Submitted BPGWCS 2020 Annual and First Quarter 2021 OM&M Reports (March and May 2021, respectively) to the NYSDEC
- Significant shutdown instances this period are summarized below. In each instance the system was fully restored following shutdown.
 - January 2021 operated at reduced flow rates for 4.5 hours due to ISTR Baker Tank discharge.
 - February 2021 operated at reduced flow rates for 10.5 hours due to ISTR Baker Tank discharge.
 - March 2021 operated at reduced flow rates for 6.25 hours due to ISTR Baker Tank discharge.
 - March 2021 shutdown for 15.5 hours due to power surge.
 - April 2021 shutdown for 18.8 hours due to bag filter valve malfunction and subsequent replacement.
 - April 2021 operated at reduced flow rates for 18.8 hours due to ISTR Baker Tank discharge.
 - May 2021 shutdown for 10.3 hours due to air stripper pressure adjustments.
 - May 2021 System operated at reduced flow rates for 63 hours due to RW-2 pump maintenance.
 - June 2021 shutdown for 5 hours due to system reset following air stripper high pressure alarm.

Other

- Performed quarterly monitoring rounds for Monitoring Wells MW109-3 and MW111-4 from January through June 2021. Performed monthly monitoring round for Monitoring Well MW116-5 from January through June 2021. Validated data obtained from the January through June 2021 period is provided in **Table 1** and well locations are shown in **Figure 1**.
- January 2021 sampling of MW116-5 was not completed due to sampling equipment failure. Sampling was resumed on February 2021 after equipment repair.

OU3 Activities Scheduled During June Through December 2021

Bethpage Park Soil Gas Containment System

- Continue OM&M of the BPSGCS.
- Submit OU3 BPSGCS Second Quarter 2021 and Third Quarter 2021 Reports (August and November 2021 respectively) to the NYSDEC.

Jason Pelton
NYSDEC
July 22, 2021

Bethpage Park Groundwater Containment System

- Continue OM&M of the BPGWCS.
- Submit OU3 BPGWCS Second Quarter 2021 and Third Quarter 2021 Reports (August and November 2021 respectively) to the NYSDEC.

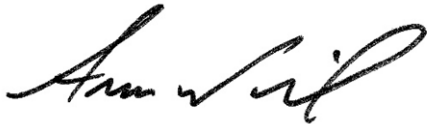
Other

- Perform quarterly monitoring rounds for Monitoring Wells MW109-3 and MW111-4 and monthly monitoring rounds for Monitoring Well MW116-5.

Feel free to call us if you have any questions.

Sincerely,

Arcadis of New York, Inc.



Arnas Nemickas
Senior Hydrogeologist/ Project Manager

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CC.

Edward Hannon, Northrop Grumman Corporation
Donald Hesler, NYSDEC
Jim Sullivan, NYS Dept. of Health
Donald Irwin, Nassau County Dept. of Health

Jason Pelton
NYSDEC
July 22, 2021

Robin Putnam, Nassau County Dept. of Health
Richard Castle, Nassau County Dept. of Health
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Enc. Tables

- 1 Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Groundwater Samples Collected from Monitoring Wells

Figures

- 1 Site Plan Showing OU3 Well Locations

Table 1.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in
Groundwater Samples Collected from Monitoring Wells,
Northrop Grumman,
Bethpage, New York.

Constituents (units in ug/L)	Location ID: Sample Date:	MW-109-3 3/12/2021	MW-109-3 5/27/2021	MW-111-4 3/12/2021	MW-111-4 5/27/2021
1,1,1-Trichloroethane		< 1.0	< 1.0	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 5.0	< 5.0	< 25	< 25
1,1-Dichloroethane		< 1.0	< 1.0	< 5.0	< 5.0
1,1-Dichloroethene		2.3	3.2	7.2	7.3
1,2-Dichloroethane		< 1.0	0.83 J	3.9 J	3.8 J
1,2-Dichloropropane		< 1.0	1.4	< 5.0	< 5.0
1,3-Butadiene		< 1.0	0.53 J	< 5.0	< 5.0
1-chloro-1,1-difluoroethane		< 5.0	< 5.0	< 25	< 25
2-Butanone		< 5.0	< 5.0	< 25	< 25
2-Hexanone		< 10	< 10	< 50	< 50
4-methyl-2-pentanone		< 5.0	< 5.0	< 25	< 25
Acetone		< 10	< 10	< 50	< 50
Benzene		1.3	6.2	< 2.5	< 2.5
Bromodichloromethane		< 1.0	< 1.0	< 5.0	< 5.0
Bromoform		< 1.0	< 1.0	< 5.0	< 5.0
Bromomethane		< 2.0	< 2.0	< 10	< 10
Carbon Disulfide		< 2.0	< 2.0	< 10	< 10
Carbon Tetrachloride		< 1.0	< 1.0	< 5.0	< 5.0
Chlorobenzene		< 1.0	< 1.0	< 5.0	< 5.0
Chlorodifluoromethane (Freon 22)		< 5.0	0.85 J	< 25	< 25
Chloroethane		< 1.0	< 1.0	< 5.0	< 5.0
Chloroform		6.8	6.5	< 5.0	3.2 J
Chloromethane		< 1.0	< 1.0	< 5.0	< 5.0
cis-1,2-dichloroethene		195	250	611	592
cis-1,3-dichloropropene		< 1.0	< 1.0	< 5.0	< 5.0
Dibromochloromethane		< 1.0	< 1.0	< 5.0	< 5.0
Dichlorodifluoromethane (Freon 12)		< 2.0	< 2.0	< 10	< 10
Ethylbenzene		< 1.0	< 1.0	< 5.0	< 5.0
Methylene Chloride		< 2.0	< 2.0	< 10	< 10
Styrene		< 1.0	< 1.0	< 5.0	< 5.0
Tetrachloroethene		1.0	< 1.0	6.4	6.2
Toluene		< 1.0	< 1.0	< 5.0	< 5.0
trans-1,2-dichloroethene		3.0	4.2	3.7 J	8.6
trans-1,3-dichloropropene		< 1.0	< 1.0	< 5.0	< 5.0
Trichloroethylene		211	200	999	944
Trichlorotrifluoroethane (Freon 113)		< 5.0	< 5.0	< 25	< 25
Vinyl Chloride		< 1.0	< 1.0	< 5.0	< 5.0
Xylene-o		< 1.0	< 1.0	< 5.0	< 5.0
Xylenes - m,p		< 1.0	< 1.0	< 5.0	< 5.0
TVOCs		420	470	1600	1600
1,4-Dioxane		5.0	6.8	9.7	--

Notes and Abbreviations on Last Page

Table 1.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in
Groundwater Samples Collected from Monitoring Wells,
Northrop Grumman,
Bethpage, New York.

Constituents (units in ug/L)	Location ID: Sample Date:	MW-116-5 2/23/2021	MW-116-5 3/19/2021	MW-116-5 4/9/2021	MW-116-5 5/28/2021	MW-116-5 6/9/2021
1,1,1-Trichloroethane		<10	<10	3.0J	< 25	3.6
1,1,2,2-Tetrachloroethane		<10	<10	<5.0	< 25	<1.0
1,1,2-Trichloroethane		<10	<10	4.9J	< 130	5.4
1,1-Dichloroethane		17.2	15.8	15.9	< 25	19
1,1-Dichloroethene		18.1	15.2	15.7	18.2 J	20.5
1,2-Dichloroethane		30.1	32	27.6	18.2 J	29
1,2-Dichloropropane		11.4	<10	9.8	30.7	11.2
1,3-Butadiene		<50	<50	<25	< 25	<5.0
1-chloro-1,1-difluoroethane		<50	<50	<25	< 130	<5.0
2-Butanone		<100	<100	<50	< 130	<10
2-Hexanone		<50	<50	<25	< 130	<5.0
4-methyl-2-pentanone		< 50	< 50	< 25	< 130	<5.0
Acetone		< 100	< 100	< 50	< 250	<10
Benzene		< 5.0	< 5.0	< 2.5	<13	<0.50
Bromodichloromethane		< 10	< 10	< 5.0	<25	<1.0
Bromoform		< 10	< 10	< 5.0	<25	<1.0
Bromomethane		< 20	< 20	< 10	< 50	<2.0
Carbon Disulfide		< 20	< 20	< 10	< 50	<2.0
Carbon Tetrachloride		< 10	< 10	3.1 J	< 25	<1.0
Chlorobenzene		< 10	< 10	< 5.0	< 25	<1.0
Chlorodifluoromethane (Freon 22)		< 50	< 50	< 25	<130	<5.0
Chloroethane		< 10	< 10	< 5.0	< 25	<1.0
Chloroform		25.9	24.1	22.3	26.7	23.2
Chloromethane		< 10	< 10	< 5.0	< 25	<1.0
cis-1,2-dichloroethene		807	762	763	822	785
cis-1,3-dichloropropene		< 10	< 10	< 5.0	< 25	<1.0
Dibromochloromethane		<10	<10	<5.0	<25	<1.0
Dichlorodifluoromethane (Freon 12)		<20	<20	<10	<50	<2.0
Ethylbenzene		< 10	< 10	< 5.0	<25	<1.0
Methylene Chloride		<20	<20	<10	<50	<2.0
Styrene		< 10	< 10	< 5.0	<25	<1.0
Tetrachloroethene		< 10	< 10	< 5.0	<25	4
Toluene		< 10	< 10	< 5.0	<25	<1.0
trans-1,2-dichloroethene		9.0 J	< 10	5.6	<25	9.8
trans-1,3-dichloropropene		< 10	< 10	< 5.0	<25	<1.0
Trichloroethylene		4580 E	4420	3900	4320	3910
Trichlorotrifluoroethane (Freon 113)		<50	<50	<25	<130	<5.0
Vinyl Chloride		< 10	< 10	< 5.0	<25	<1.0
Xylene-o		< 10	< 10	< 5.0	<25	<1.0
Xylenes - m,p		< 10	< 10	< 5.0	<25	<1.0
TVOCs		5,500	5,300	4,800	5,200	4,800
1,4-Dioxane		66	120	85	(1)	69

Notes and Abbreviations on Last Page

Table 1.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in
Groundwater Samples Collected from Monitoring Wells,
Northrop Grumman,
Bethpage, New York.

Notes and Abbreviations:

Results validated following protocols specified in March 2006 RI/FS Work Plan (ARCADIS G&M, Inc. 2006).

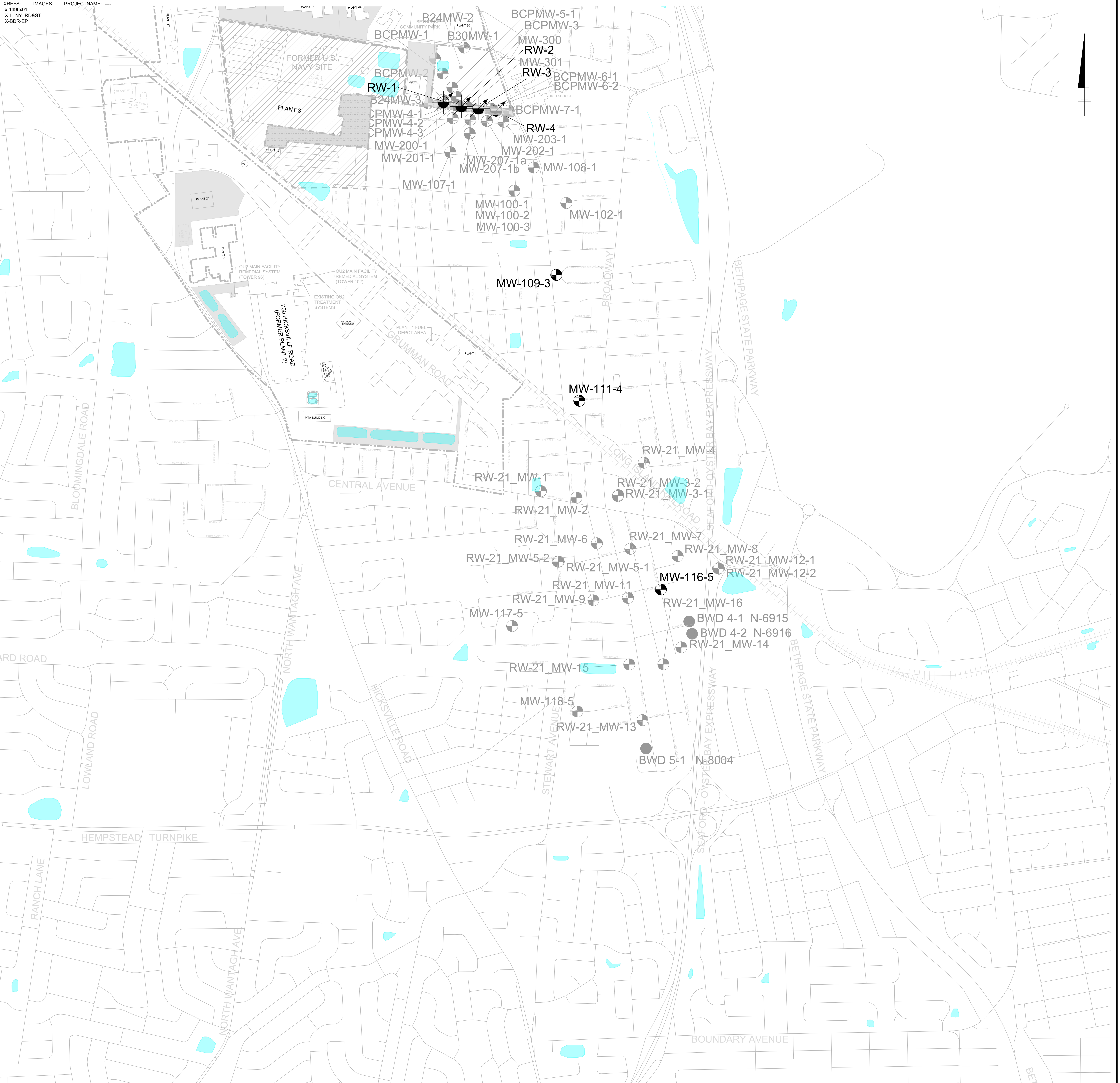
Samples analyzed for TCL VOCs using EPA Method 8260C.

Samples analyzed for 1,4-Dioxane using USEPA Method 8270D SIM.

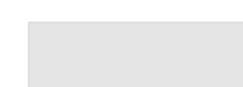


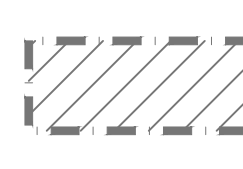



(1) Sample was received out of temperature due to delayed delivery.

Bold value indicates a detection.

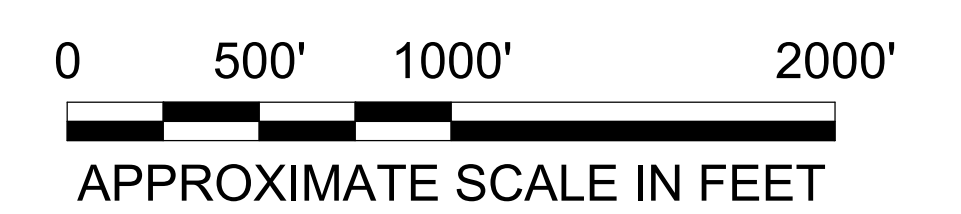
RI/FS	Remedial Investigation/Feasibility Study
NYSDEC	New York State Department of Environmental Conservation
TCL	Target compound list
VOC	Volatile Organic Compound
TVOC	Total Volatile Organic Compounds
ug/L	Micrograms per liter
J	Value is estimated
E	Value exceeds calibration range
REP	Blind replicate



EXPLANATION:

-  CURRENT NORTHROP GRUMMAN PROPERTY
-  CURRENT NAVAL OWNED PROPERTY
-  FORMER NORTHROP GRUMMAN PROPERTY BOUNDARY
-  FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
-  MONITORING WELL
-  REMEDIAL WELL
-  PUBLIC SUPPLY WELL

NAVY AND BETHPAGE WELLS
SHOWN FOR REFERENCE PURPOSES



NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK

**SITE PLAN
SHOWING OU3 WELL LOCATIONS**