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Subject: First Quarter 2021 Progress Report
Northrop Grumman
Operable Unit 2, NYSDEC Site ID # 1-30-003A
Bethpage, New York
Our Ref: 30062156.RPTI4
Date: April 9, 2021

Dear Jason,

In accordance with Appendix “A”, Section XIII of Administrative Order on Consent (AOC) Index # W1-118-14-12, this letter reports Operable Unit 2 (OU2) activities performed by Northrop Grumman during the First Quarter of 2021 (January through March 2021). Activities planned for the Second Quarter of 2021 (April to June 2021) are also described, as applicable.

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

As this is an ongoing remediation project, Northrop Grumman submits these Progress Reports on a quarterly frequency and the next Progress Report will be submitted following the close of June 2021.

OU2 ACTIVITIES CONDUCTED DURING FIRST QUARTER 2021

OU2 On-Site Containment (ONCT) System

- Continued Operation, Maintenance and Monitoring (OM&M) of the OU2 ONCT system.
- Completed routine First Quarter 2021 ONCT system sampling.
- Notable shutdown events (generally shutdowns of 3 hours or greater, excluding brief or short-term maintenance events) during this period are summarized below. In each instance, the system was fully restored following any needed assessments and repairs:
  - The Tower 96 System shut down on 2/18/2021 due to exterior blower bearing failure. Following corrective actions and associated balancing, the system was restarted on 2/24/21.

- The Tower 102 System shut down on 2/19/2021 due to an issue with the hydrovane, and an issue with the alarm notification system prevented the system from notifying the operators of the shutdown. Following corrective actions, the system was restarted on 2/20/21.
- The Tower 96 System shut down on 3/3/2021 for change-out of the GAC within the supplemental GAC beds. Following this maintenance event, the system was restarted the same day.
- The Tower 96 System was shut down on 3/24/2021 to accommodate installation of vibration and temperature sensors for the blower bearings to reduce future downtime associated with blower bearing failures. Following this maintenance event, the system was restarted the same day.
- The Tower 102 System shut down on 3/30/2021 due to a low air flow alarm at the stripper tower. Following corrective actions, the system was restarted the same day.

Regional Groundwater Monitoring & Outpost Well Monitoring

- Initiated and completed the First Quarter 2021 routine OU2 groundwater monitoring activities (Monitoring Well GM-21D2 and BPOW-2 well cluster). Well locations are shown on Figure 1.
- Prepared and submitted the Fourth Quarter 2020 sampling event data (Form 1 packages) to NYSDEC.
- Data not routinely reported are provided for the current period as follows:
    - Analytical data associated with the purge water discharged as part of the Fourth Quarter 2020 sampling event (Sample ID “DISCHARGE”) are provided in Table 1.

Northrop Grumman Cooperation with Navy

- Coordinated with Navy and completed First Quarter 2021 sampling of additional outpost wells (BPOW 5 cluster and BPOW 6 cluster), as highlighted on Figure 1.

Other

- Prepared and submitted the 2020 Annual OU2 OM&M Report.
- Prepared and submitted the Fourth Quarter 2020 AOC Quarterly Progress Report.

OU2 ACTIVITIES SCHEDULED FOR SECOND QUARTER 2021

OU2 ONCT System

- Continue OM&M of the OU2 ONCT system.
- Conduct routine Second Quarter 2021 ONCT system sampling.

Regional Groundwater Monitoring & Outpost Well Monitoring

- Conduct Second Quarter 2021 sampling, including water-level collection, associated with wells in Northrop Grumman's routine monitoring program.

Northrop Grumman Cooperation with Navy

- Coordinate with Navy to conduct the Second Quarter 2021 sampling, including water-level collection, associated with additional outpost wells (BPOW5 and BPOW6 clusters) and select monitoring wells, as highlighted on Figure 1.

Other

- Prepare and submit the First Quarter 2021 AOC Quarterly Progress Report.
- Prepare and submit the First Quarter 2021 OU2 OM&M Report.
- Prepare and submit to Navy the Fourth Quarter 2020 data reports for outpost wells (BPOW 5 and 6 cluster wells) and select monitoring wells (RE wells and TT wells).

Mr. Jason Pelton
New York State Department of Environmental Conservation
April 9, 2021

Sincerely,
Arcadis of New York, Inc.

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Enclosure

Tables

Table 1
Summary of Analytical Data
Operable Unit 2
Northrop Grumman
Bethpage, New York

Constituents (units in µg/L)	Sample ID: Location ID: Date Sampled:	DISCHARGE [2] DISCHARGE 11/5/2020	TB-110520-JS-1 QAQC 11/5/2020
Volatile Organic Compounds [1]			
1,1,1-Trichloroethane		< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 2.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0
1,3-Butadiene		--	< 5.0
1-Chloro-1,1-difluoroethane		--	< 5.0
2-Butanone (MEK)		< 5.0	< 10
4-Methyl-2-Pentanone		< 5.0	< 5.0
Acetone		**4.4 J**	< 10
Benzene		< 1.0	< 0.50
Bromodichloromethane		< 1.0	< 1.0
Bromoform		< 1.0	< 1.0
Bromomethane		< 1.0	< 2.0
Carbon Disulfide		< 1.0	< 2.0
Carbon Tetrachloride		< 1.0	< 1.0
CFC-11		< 2.0	< 2.0
CFC-12		< 2.0	< 2.0
Chlorobenzene		< 1.0	< 1.0
Chlorodibromomethane		< 1.0	< 1.0
Chlorodifluoromethane		--	< 5.0
Chloroethane		< 1.0	< 1.0
Chloroform		< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0
cis-1,2-Dichloroethene		**0.60 J**	< 1.0
cis-1,3-Dichloropropene		< 1.0	< 1.0
Dichloromethane		< 1.0	< 2.0
Ethylbenzene		< 1.0	< 1.0
m&p-Xylenes		< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)		< 5.0	< 5.0
Methyl-tert-butylether		< 1.0	< 1.0
o-Xylene		< 1.0	< 1.0
Styrene (Monomer)		< 2.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0
Toluene		< 1.0	< 1.0
trans-1,2-Dichloroethene		< 1.0	< 1.0
trans-1,3-Dichloropropene		< 1.0	< 1.0
Trichloroethene		**6.0**	< 1.0
Vinyl chloride		< 1.0	< 1.0
Total VOCs [3]		**11.0**	**ND**

Notes and abbreviations on Last Page

Table 1
Summary of Analytical Data
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Monitoring well purge water discharge sample analysis by VOC Method 624.1.

(2) The sample is collected from monitoring well purge water discharged as part of the Fourth Quarter 2020 sampling event.

(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.

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

Bold	Indicates a Detection
<1.0	Constituent not detected above its laboratory quantification limit.
--	Not analyzed
µg/L	Micrograms per liter
J	Value is estimated concentration
OU2	Operable Unit 2
QAQC	Quality Assurance/Quality Control sample
ND	Non-Detect
TB	Trip Blank
VOC	Volatile Organic Compound

Figures

CITY:SYRACUSE-NY DIV/GROUP:ENV DB:A.SANCHEZ LD:ALS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\gstowell\BIM 360\Arcadis\ANA - Northrop Grumman\Project Files\OU2 ONCT OM&M Program\2019\01-DWG\OU2-GWMWN-A1.dwg LAYOUT: 1 SAVED: 9/3/2019 1:14 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 9/3/2019 1:15 PM BY: STOWELL, GARY

XREFS: IMAGES: PROJECTNAME: ----
X-1496X01
X-BDR-DP
X-LI-NY_RD&ST

HN-24I HN-24S FW-03 HN-42S HN-42I GM-13D HN-40I HN-40S GM-16I GM-16SR N-10597 MW-3-1 WELL 3R MW-1GF WELL 3 GM-17I GM-17SR GM-17D WELL 1 MW-2GF GM-18D GM-18I GM-18S GM-39DB GM-39DA GM-33D2 N-10631 WELL 17 GM-20I GM-21D2 GM-20D GM-21S GM-21I GM-21D N-10633 GM-73D3 WELL 18 GM-73D GM-73D2 GM-74D3 GM-74D2 GM-74I GM-74D WELL 19 PLT1MW-05 PLT1MW-06 PLT1MW-04 GM-19SR GM-19I GM-15D2 GM-15D GM-15SR GM-15I GM-79I GM-79S GM-79D GM-37D GM-37D2 GM-71D2 RE106D2 GM-78D2 GM-78D N-10600 RE106D1 GM-78S RE106D3 GM-78I N-9921 RE107D1 RE107D2 RE107D3 N-10624 GM-75D2 N-10627 N-10634 RE109D1 RE109D2 RE109D3 GM-70D2 GM-35D2 GM-36D GM-36D2 N-10821 GM-34D GM-34D2 GM-38D GM-38D2 RE121D1 RE121D2 RE124D1 RE124D2 RE116D1 RE114D1 RE114D3 RE114D2 RE115D1 RE115D2 BPOW 4-2R BPOW 4-1R BPOW 2-2 BPOW 2-3 BPOW 2-1 BPOW 3-4 BPOW 3-3 BPOW 3-2 BPOW 3-1 RE128D1 RE128D2 RE127D1 RE127D2 BPOW 5-1 BPOW 5-2 BPOW 5-3 RE130D2 RE130D1 BPOW 5-6 RE118D1 BPOW 5-5 BPOW 5-7 RE119D1 BPOW 5-4 RE129D2 RE129D1 TT102D2 TT102D RE133D2 RE133D1 BPOW 6-4 BPOW 6-3 BPOW 6-5 BPOW 6-6 BPOW 6-2 BPOW 6-1 BPOW 1-4 BPOW 1-5 BPOW 1-6 BPOW 1-1 BPOW 1-2 BPOW 1-3

PLANT 3 PLANT 25 PLANT 5 PLANT 2 PLANT 1 FUEL DEPOT AREA
OU2 MAIN FACILITY REMEDIAL SYSTEM (TOWER 66)
OU2 MAIN FACILITY REMEDIAL SYSTEM (TOWER 102)
EXISTING OU2 TREATMENT SYSTEMS
GRUMMAN ROAD
CENTRAL AVENUE
BROADWAY
BETHPAGE STATE PARKWAY
SEAFORD-OYSTER BAY EXPRESSWAY
LONG ISLAND RAILROAD
BLOOMINGDALE ROAD
(GARDINER'S AVENUE)
MALLARD ROAD
LOWLAND ROAD
NORTH WANTAGH AVE.
HICKSVILLE ROAD
STEWART AVENUE
HEMPSTEAD TURNPIKE
RANCH LANE
BOUNDARY AVENUE
SOUTHERN STATE PARKWAY
NORTH BROADWAY

LEGEND:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER NAVY SITE
- LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2009)
- DENOTES NAVY OWNED PROPERTY (AS OF 2014)
- RECHARGE BASIN
- WELL LOCATION
- GREEN HIGHLIGHT INDICATES WELLS SAMPLED BY ARCADIS ON BEHALF OF NAVY

0 800' 1600'
APPROXIMATE SCALE IN FEET

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK

WELL LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1