NORTHROP GRUMMAN

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-0024L-20
October 7, 2020

Jason Pelton
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A**
Northrop Grumman Corporation - Bethpage, New York Facility

Mr. Pelton:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of September 2020, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,

Edward J. Hannon
Environmental, Safety, Health & Medical Director
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: *D. Stern (AG&M)*

NORTHROP GRUMMAN

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925 South Oyster Bay Road
Bethpage, NY 11714

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ESH&M-025L-20
October 7, 2020

Jason Pelton
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
September 1, 2020 – September 30, 2020

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – 1.2 ug/L
Outfall 5 – 6.3 ug/L
Outfall 6 – 10.0 ug/L

If you have any questions, please call me at 516-575-2333
Very truly yours,

Edward J. Hannon
Environmental, Safety, Health & Medical Director
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ ADDRESS *(Include Facility Name/Location if*
NAME: NORTHROP GRUMMAN SYSTEMS CORP
ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2020	09/30/2020

DMR Mailing ZIP CODE: 11714
MINOR
(SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT				6.7		6.7	SU	0	1/30	Grab
00100 1 0 Effluent Gross	PERMIT REQUIREMENT				Req. Mon. MINIMUM		Req. Mon. MAXIMUM	SU		Monthly	Grab
pH	SAMPLE MEASUREMENT				5.7		5.7	SU	0	1/30	Grab
00100 1 0 Intake from Well	PERMIT REQUIREMENT				Req. Mon. MINIMUM		Req. Mon. MAXIMUM	SU		Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT						4.4	mg/L	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT						10 DAILY MX	mg/L		Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
1,1- Dichloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
1,1,1- Trichloroethane	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Edward J Hannon / ESHM Director	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	516-575-2333		10/07/2020
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTSUPPLY WELL & OUTFALL PH MONTHLY &REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA).SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

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DISCHARGE MONITORING REPORT (DMR)

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OMB No. 2040-0004

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ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
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09/01/2020	09/30/2020

DMR Mailing ZIP CODE: 11714
MINOR
(SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall

No Discharge ☐

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		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Vinyl Chloride	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT						1.6	ug/L	0	1/30	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT		3.96	*****					0	1/30	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT		5 DAILY MX	MGD						Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	1		*****					0	1/30	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. Single Rdg		N=0;Y=1						Monthly	Calculated
cis- 1,2- Dichloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
trans- 1,2- Dichloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab

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BETHPAGE, NY 11714
FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
BETHPAGE, NY 11714
ATTN: JOHN COFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2020	09/30/2020

DMR Mailing ZIP CODE: 11714
MINOR
(SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT				6.7		6.7	SU	0	1/30	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT				Req. Mon. MINIMUM		Req. Mon. MAXIMUM	SU		Monthly	Grab
pH	SAMPLE MEASUREMENT				5.4		5.4	SU	0	1/30	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT				Req. Mon. MINIMUM		Req. Mon. MAXIMUM	SU		Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT						6.1	mg/L	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT						10 DAILY MX	mg/L		Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
1,1- Dichloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
1,1,1- Trichloroethane	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab

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WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTSUPPLY WELL & OUTFALL PH MONTHLY &REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA).SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

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ADDRESS: 925 SO. OYSTER BAY RD M/S: W16-035
BETHPAGE, NY 11714
FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S: W16-035
BETHPAGE, NY 11714
ATTN: JOHN COFMAN

NY0096792	006-C
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2020	09/30/2020

DMR Mailing ZIP CODE: 11714
MINOR
(SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Vinyl Chloride	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT		2.20	*****					0	1/30	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT		4.25 DAILY MX	MGD						Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	1		*****					0	1/30	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. Single Rdg		N=0;Y=1						Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT						<0.5	ug/L	0	1/30	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Edward J Hannon/ESHH Director	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	516-575-2333		10/07/2020
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BETHPAGE, NY 11714
FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
BETHPAGE, NY 11714
ATTN: JOHN COFMAN

NY0096792	001- WSP7
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2020	09/30/2020

DMR Mailing ZIP CODE: 11714
MINOR
(SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT				6.6		6.6	SU	0	1/30	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT				Req. Mon. MINIMUM		Req. Mon. MAXIMUM	SU		Monthly	Grab
pH	SAMPLE MEASUREMENT				5.5		5.5	SU	0	1/30	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT				Req. Mon. MINIMUM		Req. Mon. MAXIMUM	SU		Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT						2.6	mg/L	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT						10 DAILY MX	mg/L		Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT						<2.0	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT						<1.0	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
1,1- Dichloroethylene	SAMPLE MEASUREMENT						<1.0	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
1,1,1- Trichloroethane	SAMPLE MEASUREMENT						<1.0	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab

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BETHPAGE, NY 11714
ATTN: JOHN COLMAN

NY0096792	001-WSP7
PERMIT NUMBER	DISCHARGE NUMBER

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MM/DD/YYYY	MM/DD/YYYY
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External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING VALUE	QUANTITY OR LOADING VALUE	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Vinyl Chloride	SAMPLE MEASUREMENT						<1.0	ug/L	0	1/30	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
1,1-Dichloroethylene	SAMPLE MEASUREMENT						<1.0	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT		0.32	*****					0	1/30	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT		5 DAILY MX	MGD						Monthly	Measured
Calculated Limit	SAMPLE MEASUREMENT	1		*****					0	1/30	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. Single Rdg		N=0;Y=1						Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT						<1.0	ug/L	0	1/30	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT						<5.0	ug/L	0	1/30	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT						1.0	ug/L	0	1/30	Grab
34546 1 0 Effluent Gross	PERMIT REQUIREMENT						5 DAILY MX	ug/L		Monthly	Grab

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Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

ARCADIS Design & Consultancy for natural and built assets

Monitoring Period:
September 2020
9/1/20 12:00 AM 10/1/20 12:00 AM
30 Days

OU2 South Basins: Outfall 005

OU2 Groundwater Remedy Tower 102 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter[1]	CAS Number	OUTFALL 005 9/17/2020	Discharge Limit[2]	Units	Monitoring Frequency	Sample Type	Average Mass Loading[3,7]	Units
Daily Average Flow[4]	--	3.92	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow[4]	--	3.96	Monitor	MGD	Continuous	SCADA	--	--
Influent pH[5]	--	5.7	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH[5]	--	6.7	Range 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	4.4	10.0	mg/L	Monthly (1/30) Days	Grab	143.93	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese[6]	--	ND	1,000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	1.6	5.0	µg/L	Monthly (1/30) Days	Grab	0.05	lbs/day
Vinyl Chloride	75-01-4	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	6.3	Monitor	µg/L	Monthly (1/30) Days	Grab	0.21	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

ARCADIS Design & Consultancy for natural and built assets

OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter[1]	CAS Number	OUTFALL 006 9/17/2020	Discharge Limit[2]	Units	Monitoring Frequency	Sample Type	Average Mass Loading[3,7]	Units
Daily Average Flow[4]	--	1.65	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow[4]	--	2.20	Monitor	MGD	Continuous	SCADA	--	--
Influent pH[5]	--	5.4	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH[5]	--	6.7	Range 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	**6.1**	10.0	mg/L	Monthly (1/30) Days	Grab	83.99	lbs/day
Total Iron	7439-89-6	<100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese[6]	--	ND	1000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	**10**	Monitor	µg/L	Monthly (1/30) Days	Grab	0.14	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

ARCADIS Design & Consultancy for natural and built assets

OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter[1]	CAS Number	OUTFALL 001 (WSP-7) 9/2/2020	Discharge Limit[2]	Units	Monitoring Frequency	Sample Type	Average Mass Loading[3,7]	Units
Daily Average Flow[4]	--	0.32	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow[4]	--	0.32	Monitor	MGD	Continuous	SCADA	--	--
Influent pH[5]	--	5.5	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH[5]	--	6.6	Range 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	**2.6**	10.0	mg/L	Monthly (1/30) Days	Grab	6.94	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	**46.0**	600	µg/L	Monthly (1/30) Days	Grab	0.12	lbs/day
Sum of Total Iron and Manganese	--	**46.0**	1000	µg/L	Monthly (1/30) Days	Calculated	0.12	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	**1.2**	Monitor	µg/L	Monthly (1/30) Days	Grab	3.20E-03	lbs/day

Notes and Abbreviations:

XX Bold value indicates the constituent was detected at or above its laboratory quantification limit.
< Compound is not detected above laboratory quantification limit
-- Not Applicable
µg/L micrograms per liter
lbs/day pounds per day
lb/kg pounds per kilogram
MGD million gallons per day
mg/L milligrams per liter
min minutes
SU Standard Units

CAS Chemical Abstracts Service
ND Non Detect
NS None Specified
NYSDEC New York State Department of Environmental Conservation
SCADA Supervisory Control and Data Acquisition
SPDES State Pollution Discharge Elimination System
TKN Total Kjeldahl Nitrogen

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system. 1,4-Dioxane using USEPA Method 8270D-SIM-CLLE. Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively. Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on July 30, 2018 and transmitted by the NYSDEC to Northrop Grumman on August 9, 2018.

3. Mass Loading Calculation

$$Mass\ Loading\left(\frac{lb}{day}\right) = Flow\left(\frac{gal}{min}\right) * 1440\left(\frac{min}{day}\right) * concentration\left(\frac{\mu g}{liter}\right) * 10^{-9}\left(\frac{\mu g}{kg}\right) * 3.785\left(\frac{liter}{gal}\right) * 2.2046\left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

Report of Analysis

Client Sample ID:	OUTFALL 005		
Lab Sample ID:	JD13319-1	**Date Sampled:**	09/17/20
Matrix:	AQ - Effluent	**Date Received:**	09/18/20
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A204298.D	1	09/25/20 12:58	ED	n/a	n/a	V1A8828
Run #2	T247059.D	1	09/28/20 13:24	ED	n/a	n/a	VT10242

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform [a]	ND	0.50	0.33	ug/l	
75-35-4	1,1-Dichloroethene [a]	ND	0.50	0.34	ug/l	
156-59-2	cis-1,2-Dichloroethene [a]	ND	0.50	0.34	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.46	ug/l	
76-13-1	Freon 113 [b]	ND	0.50	0.45	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.41	ug/l	
127-18-4	Tetrachloroethene	ND [c]	0.50	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane [a]	ND	0.50	0.28	ug/l	
79-01-6	Trichloroethene	1.6	0.50	0.43	ug/l	
75-01-4	Vinyl chloride [a]	ND	0.50	0.17	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	90%	101%	76-122%
2037-26-5	Toluene-D8 (SUR)	91%	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	100%	80-120%
1868-53-7	Dibromofluoromethane (S)	111%	103%	80-120%

(a) MDL from current instrument.
(b) Associated CCV outside of control limits high, sample was ND. MDL from current instrument.
(c) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	OUTFALL 005		
Lab Sample ID:	JD13319-1	**Date Sampled:**	09/17/20
Matrix:	AQ - Effluent	**Date Received:**	09/18/20
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/21/20	09/21/20	ND	EPA 200.7 [1]	EPA 200.7 [2]
Manganese	< 15	15	ug/l	1	09/21/20	09/21/20	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA49330
(2) Prep QC Batch: MP22844

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 005		
Lab Sample ID:	JD13319-1	**Date Sampled:**	09/17/20
Matrix:	AQ - Effluent	**Date Received:**	09/18/20
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	4.4	0.10	0.090	mg/l	1	09/29/20 19:25	EB	EPA 353.2/LACHAT
Nitrogen, Total [a]	4.4	0.30	0.23	mg/l	1	09/29/20 19:25	EB	SM4500 A-11
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	09/29/20 16:14	BM	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Report of Analysis

Client Sample ID:	OUTFALL 006		
Lab Sample ID:	JD13319-2	**Date Sampled:**	09/17/20
Matrix:	AQ - Effluent	**Date Received:**	09/18/20
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A204299.D	1	09/25/20 13:24	ED	n/a	n/a	V1A8828
Run #2	T247060.D	1	09/28/20 13:55	ED	n/a	n/a	VT10242

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform [a]	ND	0.50	0.33	ug/l	
75-35-4	1,1-Dichloroethene [a]	ND	0.50	0.34	ug/l	
156-59-2	cis-1,2-Dichloroethene [a]	ND	0.50	0.34	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.46	ug/l	
76-13-1	Freon 113 [b]	ND	0.50	0.45	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.41	ug/l	
127-18-4	Tetrachloroethene	ND [c]	0.50	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane [a]	ND	0.50	0.28	ug/l	
79-01-6	Trichloroethene	ND	0.50	0.43	ug/l	
75-01-4	Vinyl chloride [a]	ND	0.50	0.17	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	93%	101%	76-122%
2037-26-5	Toluene-D8 (SUR)	92%	98%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	97%	80-120%
1868-53-7	Dibromofluoromethane (S)	112%	102%	80-120%

(a) MDL from current instrument.
(b) Associated CCV outside of control limits high, sample was ND. MDL from current instrument.
(c) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	OUTFALL 006		
Lab Sample ID:	JD13319-2	**Date Sampled:**	09/17/20
Matrix:	AQ - Effluent	**Date Received:**	09/18/20
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/21/20	09/21/20	ND	EPA 200.7 [1]	EPA 200.7 [2]
Manganese	< 15	15	ug/l	1	09/21/20	09/21/20	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA49330
(2) Prep QC Batch: MP22844

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	OUTFALL 006		
Lab Sample ID:	JD13319-2	**Date Sampled:**	09/17/20
Matrix:	AQ - Effluent	**Date Received:**	09/18/20
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	6.1	0.30	0.27	mg/l	3	09/29/20 20:03	EB	EPA 353.2/LACHAT
Nitrogen, Total [a]	6.1	0.50	0.41	mg/l	1	09/29/20 20:03	EB	SM4500 A-11
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	09/29/20 16:15	BM	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ARCADIS
Lab ID: SN7849-1
Client ID: OUTFALL 005
Project: Program 3 - OU2 TS/SPDES (Bethpage, N\
SDG: SN7849
Lab File ID: G2239.D

Sample Date: 17-SEP-20
Received Date: 18-SEP-20
Extract Date: 21-SEP-20
Extracted By: SR/MP
Extraction Method: SW846 3520C
Lab Prep Batch: WG286725

Analysis Date: 24-SEP-20
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 25-SEP-20

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.3	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		72.4	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ARCADIS
Lab ID: SN7849-2
Client ID: OUTFALL 006
Project: Program 3 - OU2 TS/SPDES (Bethpage, NY
SDG: SN7849
Lab File ID: G2240.D

Sample Date: 17-SEP-20
Received Date: 18-SEP-20
Extract Date: 21-SEP-20
Extracted By: SR/MP
Extraction Method: SW846 3520C
Lab Prep Batch: WG286725

Analysis Date: 24-SEP-20
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 25-SEP-20

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		10	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		65.5	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

SGS ACCUTEST GW TB

AUS COC#: - -

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

COC ID PAGE 1 OF 1

Fed Ex Tracking # 3795 4050 | Bottle Order Control # ISO1-09820-189 | Accutest Quote # | Accutest Job # JD13319

Client / Reporting Information	Project Information	Requested Analysis (see TEST CODE sheet)	Matrix Codes
Company Name: Arcadis	Project Name: AGMNYM62233 // OU2 SPDES Northrop Grumman OU2 Groundwater System		DW - Drinking Water; GW - Ground Water; WW - Waste Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank
Street Address: 2 Huntington Quad, Suite 1S10	Street:	Billing Information (if different from Report to)	
City: Melville State: NY Zip: 11747	City: Bethpage State: NY	Company Name: Arcadis, U.S., Inc.	
Project Contact: Sal Tedesco E-mail: sal.tedesco@arcadis.com	Project #: 30038454.OMM13	Street Address: 630 Plaza Drive, Suite 600	
Phone #: 631-356-8791 Fax #: 631-249-7610	Client Purchase Order #:	City: Highlands Ranch, State: CO Zip: 80129	
Sampler(s) Name(s): Jon Schwartz 516-330-6356 Phone #:	Project Manager: Carlo San Giovanni	Attention: Accounts Payable	

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Preservation: HCl	MeOH	HNO3	H2SO4	NaOH	Na2S2O3	ZnAc/NaOH	V8242NG9SPDS + Chloroform (40 mL Clear Glass VOA's)	XTNIT - EPA 353.2 & EPA 351.2 w/TL N Calc- (500 mL Plastic)	VC82602NG36GW+40 (40 mL Clear Glass VOA's)	Iron + Maganese EPA 200.7 (500 mL Plastic)		LAB USE ONLY
1	OUTFALL 005		9/17/20	13:30		EFF	5	3		1	1				X	X		X		AB1
2	OUTFALL 006			12:30		EFF	5	3		1	1				X	X		X		C7
3	TB-091720-SS1					TB	2	2									X			VIO6

Initial Assessment JBK

Label Verification

Turnaround Time (Business days)	Data Deliverable Information	Comments / Special Instructions
☐ Std. 15 Business Days	Approved By (Accutest PM): / Date:	☐ Commercial "A" (Level 1) ☐ NYASP Category A
☒ Std. 10 Business Days (by Contract only)		☐ Commercial "B" (Level 2) ☐ NYASP Category B
☐ 10 Day RUSH		☐ FULL1 (Level 3+4) ☐ State Forms
☐ 5 Day RUSH		☐ NJ Reduced ☒ EDD Format-EQuIS 6
☐ 3 Day EMERGENCY		☐ Commercial "C" ☒ Other COMSC+
☐ 2 Day EMERGENCY		Commercial "A" = Results Only
☐ 1 Day EMERGENCY		Commercial "B" = Results + QC Summary
Emergency & Rush T/A data available VIA Lablink		NJ Reduced = Results + QC Summary + Partial Raw data

***VOC 624 RL's 0.5 ug/L

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1 Jonathan Schwartz	9/17/20 15:30	1 Fed Ex	2 Fed Ex	9/18/2020 10:15	2 Shivani G
Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not Intact	Preserved where applicable
5		6			IR-4 On Ice Cooler Temp. 3.6°

IP

JD13319: Chain of Custody
Page 1 of 2

ARCADIS

ID#: SN7849

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #: MSA 3601

Send Results to:

Contact & Company Name	Telephone
Sal Tedesco -Task Manager	631-356-8791 cell
Address	**Fax**
Two Huntington Quad-Suite 1S10	631-249-7610
City / State / Zip	**E-mail Address**
Melville NY 11747	Sal.Tedesco@arcadis.com
Project Name/Location (City, State):	**Project #:**
Program 3 - OU2 TS/SPDES (Bethpage, NY)	30038454
Sampler's Printed Name: Jonathan Schwartz	**Sampler's Signature:**

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	1,4-Dioxane 8270D-SIM-CLLE
Outfall 005	9/7/20	13 30		X	EFF	E	-	1	2	X
Outfall 006	9/7/20	12 30		X	EFF	E	-	1	2	X

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C HNO_3
D NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1 40 ml Vial
2. 1 L Amber
3 250 ml Plastic
4 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8 8 oz. Glass
9 Other _____
10 Other _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: EFF

REMARKS

Special Instructions/Comments:
SVOC extracted by CLLE
EDD-ARCADIS_EQUIS (EQuIS6-4 file format)

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓)	Printed Name: Jonathan Schwartz	Printed Name:	Printed Name:	Printed Name: Jacob Bryce
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature	Signature
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: KAS
Shipping Tracking #	Condition/Cooler Temp: _____	Date/Time: 9/7/20 15 30	Date/Time:	Date/Time:	Date/Time: 9/8/20 0950

20730526 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

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Katahdin Analytical Services SN7849 page 0000009 of 0000011

Report of Analysis

Client Sample ID:	WSP-7		
Lab Sample ID:	JD12698-1	**Date Sampled:**	09/02/20
Matrix:	AQ - Effluent	**Date Received:**	09/03/20
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Northrop Grumman, OU3 BPGWCS System, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D192460.D	1	09/08/20 17:39	EH	n/a	n/a	V2D8316
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
106-99-0	1,3-Butadiene [a]	ND	5.0	2.2	ug/l	
75-15-0	Carbon disulfide [a]	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.9	ug/l	
75-00-3	Chloroethane [a]	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane [a]	ND	2.0	1.4	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WSP-7		
Lab Sample ID:	JD12698-1	**Date Sampled:**	09/02/20
Matrix:	AQ - Effluent	**Date Received:**	09/03/20
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Northrop Grumman, OU3 BPGWCS System, Bethpage, NY		

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.84	ug/l	
75-01-4	Vinyl chloride [a]	ND	1.0	0.79	ug/l	
75-68-3	1-chloro-1,1-difluoroethane [a]	ND	5.0	3.5	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WSP-7		
Lab Sample ID:	JD12698-1	**Date Sampled:**	09/02/20
Matrix:	AQ - Effluent	**Date Received:**	09/03/20
		Percent Solids:	n/a
Project:	Northrop Grumman, OU3 BPGWCS System, Bethpage, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/06/20	09/09/20	ND	EPA 200.7 [1]	EPA 200.7 [2]
Manganese	46.0	15	ug/l	1	09/06/20	09/09/20	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA49275
(2) Prep QC Batch: MP22690

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WSP-7		
Lab Sample ID:	JD12698-1	**Date Sampled:**	09/02/20
Matrix:	AQ - Effluent	**Date Received:**	09/03/20
		Percent Solids:	n/a
Project:	Northrop Grumman, OU3 BPGWCS System, Bethpage, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.6	0.10	mg/l	1	09/14/20 22:37	EB	EPA 353.2/LACHAT
Nitrogen, Total [a]	2.6	0.30	mg/l	1	09/14/20 22:37	EB	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	09/17/20 18:38	BM	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ARCADIS
Lab ID: SN7403-1
Client ID: WSP-7
Project: Program 4 - OU3 TS/SPDES (Bethpage, NY
SDG: SN7403
Lab File ID: G2062.D

Sample Date: 02-SEP-20
Received Date: 03-SEP-20
Extract Date: 03-SEP-20
Extracted By: JPS
Extraction Method: SW846 3520C
Lab Prep Batch: WG285548

Analysis Date: 08-SEP-20
Analyst: BF
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 10-SEP-20

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		1.2	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		56.8	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

OU3 ONCT (formerly BPGWCS) WW TB

COC #7 (AGMNYM62236)

JD12698

NJ 082620 42

ARCADIS

WA#: NY001496_2015.10.30

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #

Send Results to: Albina Redzepagic - Task Manager

Telephone: 212-365-4651 cell

Address: Two Huntington Quad-Suite 1S10

Fax: 631-249-7610

City: Melville State: NY Zip: 11747

E-mail Address: Albina.Redzepagic@arcadis.com

Project Name/Location (City, State): OU3 ONCT(SPDES)-Northrop Grumman, Bethpage NY

Project #: 30037969 OMMI3

Sampler's Printed Name: Jonathan Schwartz

Sampler's Signature:

Preservative: | | | | | | | | |

Filtered (Y): | | | | | | | | |

# of Containers: 16

Container Information: | | | | | | | | |

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type (Y) Comp	Type (Y) Grab	Matrix	VOC8260NG40CW +20: VMS+13BUTADIN, VMS+F142	XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc. (500 mL Plastic)	Iron + Magnesse EPA 200.7 (500 mL Plastic)						REMARKS
1 WSP-7	9/2	14:15		X	EFF	X	X	X						A19
2 TB090220-JS						X								G18
														V28

Keys

Preservation Key: A. H2SO4, B. HCL, C. HNO3, D. NaOH, E. None, F. Other: _____, G. Other: _____, H. Other: _____

Container Information Key: 1. 40 ml Vial, 2. 1 L Amber, 3. 250 ml Plastic, 4. 500 ml Plastic, 5. Encore, 6. 2 oz. Glass, 7. 4 oz. Glass, 8. 8 oz. Glass, 9. Other: _____, 10 Other: _____

Matrix Key: SO - Soil, W - Water, T - Tissue, SE - Sediment, SL - Sludge, A - Air, NL - NAPL/Oil, SW - Sample Wipe, Other: EFF

Special Instructions/Comments:

PDF-DELIVERABLE "COMM+"

EDD-ARCADIS_EQUIS (EQuIS6-4 file format)

☐ Special QA/QC Instructions(✓):

Send sample confirmation receipt within 48 hours

42 target sample list, with NO special low RLs

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: SGS Lab-Dayton, NJ	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: Jonathan Schwartz	Printed Name: Darrell Schenck	Printed Name: Darrell Schenck	Printed Name: Shivani G
☒ Cooler packed with Ice (✓) 3.3 C1P		Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt:	Firm: Arcadis	Firm/Courier: SGS	Firm/Courier: SGS	Firm: SGS
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 9/2/20 16:00	Date/Time: 9/3/20 1244	Date/Time: 9/3/20 1827	Date/Time: 9/3/20

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Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

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3A 02

Label Verification

5.2 5

ARCADIS

ID#: SN7403

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #: MSA 3601

Send Results to:

Contact & Company Name: Albina Redzepagic - Task Manager	Telephone: 212-365-4651 cell
Address: Two Huntington Quad-Suite 1S10	Fax: 631-249-7610
City: Melville State: NY Zip: 11747	E-mail Address: Albina.Redzepagic@arcadis.com
Project Name/Location (City, State): Program 4 - OU3 TS/SPDES (Bethpage, NY)	Project #: 30037969.OMM13
Sampler's Printed Name: Jonathan Schwartz	Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	1,4-Dioxane 8270D-SIM-CLLE
WSP-7	9/2/20	14:15		X	EFF	E	-		2	X

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other _____
G. Other _____
H. Other _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: EFF

REMARKS

Special Instructions/Comments:
SVOC extracted by CLLE
EDD-ARCADIS_EQUIS (EQuIS6-4 file format)

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓)	Printed Name: Jonathan Schwartz	Printed Name:	Printed Name:	Printed Name: Jacob Bruce
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt:	Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm: KAS
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 9/2/20 16:00	Date/Time:	Date/Time:	Date/Time: 9.3.20 1025

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Distribution: WHITE – Laboratory returns with results; YELLOW – Lab copy; PINK – Retained by Arcadis

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Katahdin Analytical Services SN7403 page 0000008 of 0000010