

## Pelton, Jason M (DEC)

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**From:** Stern, David <David.Stern@arcadis.com>  
**Sent:** Friday, November 03, 2017 11:04 AM  
**To:** Pelton, Jason M (DEC)  
**Cc:** Edward Hannon (Edward.Hannon@ngc.com); Hesler, Donald (DEC); San Giovanni, Carlo; Wolfert, Mike; Engler, Christopher  
**Subject:** DELIVERABLE: OU3 Form 1 Submittal to NYSDEC  
**Attachments:** Form1\_May-September 2017 (OU3 Phase 2).pdf; OU3 BPGWCS 2017 Annual.pdf

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Good morning Jason:

On behalf of Northrop Grumman, Arcadis is submitting the attached Form 1 data. As per discussions between Northrop Grumman and NYSDEC, NYSDEC requested that Northrop Grumman submit the validated Form 1s as soon as the information is available. The attached Form 1's are for the final data associated with OU3 routine sampling events conducted between May-September 2017.

Have a great weekend!

Thank you!

Dave

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## Report of Analysis

Client Sample ID:	BCPMW4-2	Date Sampled:	07/31/17
Lab Sample ID:	JC48047-1	Date Received:	08/01/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B152899.D	1	08/02/17 18:42	EH	n/a	n/a	V2B6797
Run #2							

Run #	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	2.3	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	0.25	1.0	0.21	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	19.9	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BCPMW4-2 <b>Lab Sample ID:</b> JC48047-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 07/31/17 <b>Date Received:</b> 08/01/17 <b>Percent Solids:</b> n/a
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**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	17.6	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		76-120%
17060-07-0	1,2-Dichloroethane-D4	101%		73-122%
2037-26-5	Toluene-D8	101%		84-119%
460-00-4	4-Bromofluorobenzene	102%		78-117%

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

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW4-2	<b>Date Sampled:</b> 07/31/17
<b>Lab Sample ID:</b> JC48047-1	<b>Date Received:</b> 08/01/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42543

(2) Prep QC Batch: MP2224

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW4-2	<b>Date Sampled:</b> 07/31/17
<b>Lab Sample ID:</b> JC48047-1F	<b>Date Received:</b> 08/01/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42543

(2) Prep QC Batch: MP2224

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RL = Reporting Limit

4.2  
4

## Report of Analysis

Client Sample ID:	FB073117JB1	Date Sampled:	07/31/17
Lab Sample ID:	JC48047-2	Date Received:	08/01/17
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B152897.D	1	08/02/17 17:40	EH	n/a	n/a	V2B6797
Run #2							

Run #	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	FB073117JB1	Date Sampled:	07/31/17
Lab Sample ID:	JC48047-2	Date Received:	08/01/17
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU3 Hydro, Bethpage, NY		

## VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		76-120%
17060-07-0	1,2-Dichloroethane-D4	99%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	102%		78-117%

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

<b>Client Sample ID:</b> FB073117JB1 <b>Lab Sample ID:</b> JC48047-2 <b>Matrix:</b> AQ - Field Blank Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 07/31/17 <b>Date Received:</b> 08/01/17 <b>Percent Solids:</b> n/a
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**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42543

(2) Prep QC Batch: MP2224

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RL = Reporting Limit

4.3  
4



## Report of Analysis

Client Sample ID:	TB073117JB1	Date Sampled:	07/31/17
Lab Sample ID:	JC48047-3	Date Received:	08/01/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B152898.D	1	08/02/17 18:11	EH	n/a	n/a	V2B6797
Run #2							

Run #	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: TB073117JB1		Date Sampled: 07/31/17
Lab Sample ID: JC48047-3		Date Received: 08/01/17
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8260C		
Project: Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		76-120%
17060-07-0	1,2-Dichloroethane-D4	100%		73-122%
2037-26-5	Toluene-D8	101%		84-119%
460-00-4	4-Bromofluorobenzene	101%		78-117%

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

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

4.4  
4

## Report of Analysis

Client Sample ID:	BCPMW4-1	Date Sampled:	07/31/17
Lab Sample ID:	JC48047-4	Date Received:	08/01/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B152900.D	1	08/02/17 19:12	EH	n/a	n/a	V2B6797
Run #2							

Run #	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	0.76	1.0	0.29	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	1.6	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	53.5	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	BCPMW4-1	Date Sampled:	07/31/17
Lab Sample ID:	JC48047-4	Date Received:	08/01/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU3 Hydro, Bethpage, NY		

## VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	21.9	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		76-120%
17060-07-0	1,2-Dichloroethane-D4	102%		73-122%
2037-26-5	Toluene-D8	101%		84-119%
460-00-4	4-Bromofluorobenzene	102%		78-117%

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

<b>Client Sample ID:</b> BCPMW4-1	<b>Date Sampled:</b> 07/31/17
<b>Lab Sample ID:</b> JC48047-4	<b>Date Received:</b> 08/01/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42543

(2) Prep QC Batch: MP2224

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RL = Reporting Limit

4.5  
**4**

## Report of Analysis

<b>Client Sample ID:</b> BCPMW4-1	<b>Date Sampled:</b> 07/31/17
<b>Lab Sample ID:</b> JC48047-4F	<b>Date Received:</b> 08/01/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/03/17	08/05/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42543

(2) Prep QC Batch: MP2224

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RL = Reporting Limit

# Report of Analysis

<b>Client Sample ID:</b> BCPMW-7-1		<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-1		<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B152988.D	1	08/04/17 19:08	EH	n/a	n/a	V2B6801
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-7-1		<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-1		<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		76-120%
17060-07-0	1,2-Dichloroethane-D4	111%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	102%		78-117%

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

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

4.1  
4



## Report of Analysis

<b>Client Sample ID:</b> BCPMW-7-1	<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-1	<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2253

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-7-1	<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-1F	<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2253

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RL = Reporting Limit

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080117MO1		<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-2		<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B152989.D	1	08/04/17 19:39	EH	n/a	n/a	V2B6801
Run #2							

Run #	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> FB080117MO1	<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-2	<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		76-120%
17060-07-0	1,2-Dichloroethane-D4	110%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	101%		78-117%

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

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080117MO1 <b>Lab Sample ID:</b> JC48165-2 <b>Matrix:</b> AQ - Field Blank Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/01/17 <b>Date Received:</b> 08/02/17 <b>Percent Solids:</b> n/a
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### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2253

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RL = Reporting Limit

4.3  
4



## Report of Analysis

<b>Client Sample ID:</b> TB080117MO1	<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-3	<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		76-120%
17060-07-0	1,2-Dichloroethane-D4	111%		73-122%
2037-26-5	Toluene-D8	101%		84-119%
460-00-4	4-Bromofluorobenzene	100%		78-117%

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

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

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-6-1	<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-4	<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B152991.D	1	08/04/17 20:40	EH	n/a	n/a	V2B6801
Run #2							

Run #	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> BCPMW-6-1	<b>Date Sampled:</b> 08/01/17
<b>Lab Sample ID:</b> JC48165-4	<b>Date Received:</b> 08/02/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		76-120%
17060-07-0	1,2-Dichloroethane-D4	112%		73-122%
2037-26-5	Toluene-D8	101%		84-119%
460-00-4	4-Bromofluorobenzene	101%		78-117%

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

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-6-1 <b>Lab Sample ID:</b> JC48165-4 <b>Matrix:</b> AQ - Ground Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/01/17 <b>Date Received:</b> 08/02/17 <b>Percent Solids:</b> n/a
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### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2253

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RL = Reporting Limit

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-6-1 <b>Lab Sample ID:</b> JC48165-4F <b>Matrix:</b> AQ - Ground Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/01/17 <b>Date Received:</b> 08/02/17 <b>Percent Solids:</b> n/a
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**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2253

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RL = Reporting Limit

4.6  
4

# Report of Analysis

<b>Client Sample ID:</b>	DISCHARGE080217	<b>Date Sampled:</b>	08/02/17
<b>Lab Sample ID:</b>	JC48246-1	<b>Date Received:</b>	08/03/17
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	EPA 624		
<b>Project:</b>	Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T225981.D	1	08/06/17 01:56	PR	n/a	n/a	VT9278
Run #2							

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

## VOA OU3 Discharge List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	1.0	0.23	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.19	ug/l	
75-25-2	Bromoform	ND	1.0	0.44	ug/l	
74-83-9	Bromomethane	ND	1.0	0.74	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.9	ug/l	
75-15-0	Carbon disulfide	ND	1.0	0.59	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.31	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.23	ug/l	
75-00-3	Chloroethane	ND	1.0	0.63	ug/l	
67-66-3	Chloroform	ND	1.0	0.20	ug/l	
74-87-3	Chloromethane	ND	1.0	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.30	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.32	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.32	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.57	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.36	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.36	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.59	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
76-13-1	Freon 113	ND	2.0	0.57	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.9	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.24	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.8	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.55	ug/l	
100-42-5	Styrene	ND	2.0	0.45	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.24	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.82	ug/l	
108-88-3	Toluene	0.50	1.0	0.24	ug/l	J

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> DISCHARGE080217		<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48246-1		<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 624		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### VOA OU3 Discharge List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.36	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.35	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.24	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.89	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.29	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	0.22	1.0	0.20	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	97%		76-122%
2037-26-5	Toluene-D8 (SUR)	95%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	98%		80-120%

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

4.1  
4



## Report of Analysis

<b>Client Sample ID:</b> BCPMW-6-2		<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-1		<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		76-120%
17060-07-0	1,2-Dichloroethane-D4	103%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	105%		78-117%

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

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-6-2	<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-1	<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	3.3	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	87.7	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42555

(2) Prep QC Batch: MP2271

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RL = Reporting Limit

4.1  
4



## Report of Analysis

<b>Client Sample ID:</b> BCPMW-6-2	<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-1F	<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42555

(2) Prep QC Batch: MP2271

RL = Reporting Limit

4.2  
4



## Report of Analysis

<b>Client Sample ID:</b> FB080217JB1		<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-2		<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		76-120%
17060-07-0	1,2-Dichloroethane-D4	101%		73-122%
2037-26-5	Toluene-D8	102%		84-119%
460-00-4	4-Bromofluorobenzene	105%		78-117%

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

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080217JB1 <b>Lab Sample ID:</b> JC48247-2 <b>Matrix:</b> AQ - Field Blank Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/02/17 <b>Date Received:</b> 08/03/17 <b>Percent Solids:</b> n/a
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**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/04/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42555

(2) Prep QC Batch: MP2271

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RL = Reporting Limit

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB080217JB1	<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-3	<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B73819.D	1	08/07/17 19:36	HT	n/a	n/a	V4B3031
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> TB080217JB1		<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-3		<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		76-120%
17060-07-0	1,2-Dichloroethane-D4	100%		73-122%
2037-26-5	Toluene-D8	102%		84-119%
460-00-4	4-Bromofluorobenzene	107%		78-117%

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

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

4.4  
4

# Report of Analysis

<b>Client Sample ID:</b> B24MW-3	<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-4	<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B73820.D	1	08/07/17 20:06	HT	n/a	n/a	V4B3031
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	0.59	1.0	0.50	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> B24MW-3		<b>Date Sampled:</b> 08/02/17
<b>Lab Sample ID:</b> JC48247-4		<b>Date Received:</b> 08/03/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		76-120%
17060-07-0	1,2-Dichloroethane-D4	104%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	105%		78-117%

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

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

4.5  
4





## Report of Analysis

<b>Client Sample ID:</b> BCPMW-4-3	<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-1	<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		76-120%
17060-07-0	1,2-Dichloroethane-D4	101%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	103%		78-117%

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

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-4-3	<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-1	<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/07/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/07/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2309

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BCPMW-4-3		<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-1F		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Groundwater Filtered		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/07/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/07/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2309

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RL = Reporting Limit

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080317JB1		<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-2		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U216900.D	1	08/08/17 15:44	GA	n/a	n/a	VU9914
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> FB080317JB1		<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-2		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		76-120%
17060-07-0	1,2-Dichloroethane-D4	101%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	103%		78-117%

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

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080317JB1 <b>Lab Sample ID:</b> JC48380-2 <b>Matrix:</b> AQ - Field Blank Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/03/17 <b>Date Received:</b> 08/04/17 <b>Percent Solids:</b> n/a
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**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/07/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/07/17	08/08/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42560

(2) Prep QC Batch: MP2309

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RL = Reporting Limit

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB080317JB1		<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-3		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U216901.D	1	08/08/17 16:28	GA	n/a	n/a	VU9914
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> TB080317JB1		<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-3		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		76-120%
17060-07-0	1,2-Dichloroethane-D4	101%		73-122%
2037-26-5	Toluene-D8	99%		84-119%
460-00-4	4-Bromofluorobenzene	103%		78-117%

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

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

4.4  
4

# Report of Analysis

<b>Client Sample ID:</b> B30MW-1		<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-4		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U216903.D	1	08/08/17 17:26	GA	n/a	n/a	VU9914
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.5  
 4

## Report of Analysis

<b>Client Sample ID:</b> B30MW-1		<b>Date Sampled:</b> 08/03/17
<b>Lab Sample ID:</b> JC48380-4		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		76-120%
17060-07-0	1,2-Dichloroethane-D4	102%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	102%		78-117%

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

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

4.5  
4



## Report of Analysis

<b>Client Sample ID:</b> B24MW-2		<b>Date Sampled:</b> 08/04/17
<b>Lab Sample ID:</b> JC48381-1		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	2.1	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

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

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080417JB1		<b>Date Sampled:</b> 08/04/17
<b>Lab Sample ID:</b> JC48381-2		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U216954.D	1	08/09/17 18:17	GA	n/a	n/a	VU9916
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> FB080417JB1	<b>Date Sampled:</b> 08/04/17
<b>Lab Sample ID:</b> JC48381-2	<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

## VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	104%		80-120%

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

<b>Client Sample ID:</b> TB080417JB1		<b>Date Sampled:</b> 08/04/17
<b>Lab Sample ID:</b> JC48381-3		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U216953.D	1	08/09/17 17:47	GA	n/a	n/a	VU9916
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> TB080417JB1		<b>Date Sampled:</b> 08/04/17
<b>Lab Sample ID:</b> JC48381-3		<b>Date Received:</b> 08/04/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	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	100%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

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

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-204-1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-1		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L293560.D	1	08/14/17 14:35	JC	n/a	n/a	VL8246
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-204-1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-1		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	2.4	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	116%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

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

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-204-1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-1		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	175	10	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42570

(2) Prep QC Batch: MP2335

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-204-1	<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-1F	<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	87.0	10	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42570

(2) Prep QC Batch: MP2335

RL = Reporting Limit

4.2  
4

# Report of Analysis

<b>Client Sample ID:</b> FB080717JB1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-2		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L293518.D	1	08/11/17 20:10	JC	n/a	n/a	VL8244
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.3  
 4

## Report of Analysis

<b>Client Sample ID:</b> FB080717JB1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-2		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	122%		81-124%
2037-26-5	Toluene-D8	96%		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	

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080717JB1 <b>Lab Sample ID:</b> JC48497-2 <b>Matrix:</b> AQ - Field Blank Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/07/17 <b>Date Received:</b> 08/08/17 <b>Percent Solids:</b> n/a
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**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42570

(2) Prep QC Batch: MP2335

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RL = Reporting Limit

4.3  
4



## Report of Analysis

<b>Client Sample ID:</b> TB080717JB1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-3		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L293519.D	1	08/11/17 20:36	JC	n/a	n/a	VL8244
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> TB080717JB1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-3		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	122%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

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

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

4.4  
4



## Report of Analysis

<b>Client Sample ID:</b> REP080717AD1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-4		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	2.5	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	117%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

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

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> REP080717AD1	<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-4	<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

4.5  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	171	10	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42570

(2) Prep QC Batch: MP2335

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> REP080717AD1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-4F		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Groundwater Filtered		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

4.6  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	85.3	10	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42570

(2) Prep QC Batch: MP2335

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-200-1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-5		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L293506.D	1	08/11/17 14:52	JC	n/a	n/a	VL8244
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> MW-200-1		<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-5		<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	115%		81-124%
2037-26-5	Toluene-D8	100%		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	

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

4.7  
4



## Report of Analysis

<b>Client Sample ID:</b> MW-200-1	<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-5	<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	11.1	10	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42570

(2) Prep QC Batch: MP2335

RL = Reporting Limit

4.7  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-200-1	<b>Date Sampled:</b> 08/07/17
<b>Lab Sample ID:</b> JC48497-5F	<b>Date Received:</b> 08/08/17
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/09/17	08/09/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42570

(2) Prep QC Batch: MP2335

RL = Reporting Limit

4.8  
4

# Report of Analysis

<b>Client Sample ID:</b> MW-205-1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-1		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D169156.D	1	08/12/17 05:42	JC	n/a	n/a	V2D7094
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	0.62	1.0	0.50	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.1  
 4

## Report of Analysis

<b>Client Sample ID:</b> MW-205-1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-1		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	0.41	1.0	0.27	ug/l	J
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.44	180	ug/l	J
	Total TIC, Volatile		0	ug/l	

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-205-1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-1		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	134	10	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42581

(2) Prep QC Batch: MP2354

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-205-1	<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-1F	<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42581

(2) Prep QC Batch: MP2354

RL = Reporting Limit

4.2  
4

# Report of Analysis

<b>Client Sample ID:</b> TB080817JB1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-2		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D169157.D	1	08/12/17 06:13	JC	n/a	n/a	V2D7094
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.3  
 4

## Report of Analysis

<b>Client Sample ID:</b> TB080817JB1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-2		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.45	56	ug/l	J
	Total TIC, Volatile		0	ug/l	

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

4.3  
4



# Report of Analysis

<b>Client Sample ID:</b> FB080817JB1		
<b>Lab Sample ID:</b> JC48598-3		<b>Date Sampled:</b> 08/08/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Date Received:</b> 08/09/17
<b>Method:</b> SW846 8260C		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D169158.D	1	08/12/17 06:43	JC	n/a	n/a	V2D7094
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080817JB1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-3		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.44	63	ug/l	J
	Total TIC, Volatile		0	ug/l	

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

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080817JB1	<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-3	<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42581

(2) Prep QC Batch: MP2354

RL = Reporting Limit

4.4  
4

# Report of Analysis

<b>Client Sample ID:</b> MW-201-1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-4		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D169159.D	1	08/12/17 07:13	JC	n/a	n/a	V2D7094
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	1.5	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-201-1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-4		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	1.3	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.45	170	ug/l	J
	Total TIC, Volatile		0	ug/l	

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-201-1		<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-4		<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

4.5  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	11.7	10	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42581

(2) Prep QC Batch: MP2354

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-201-1	<b>Date Sampled:</b> 08/08/17
<b>Lab Sample ID:</b> JC48598-4F	<b>Date Received:</b> 08/09/17
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/10/17	08/11/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42581

(2) Prep QC Batch: MP2354

RL = Reporting Limit





## Report of Analysis

<b>Client Sample ID:</b> MW-206-1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-1		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	0.76	1.0	0.25	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	0.65	1.0	0.27	ug/l	J
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	93%		81-124%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

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

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-206-1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-1		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	82.0	10	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42612

(2) Prep QC Batch: MP2390

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-206-1	<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-1F	<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	10.7	10	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42612

(2) Prep QC Batch: MP2390

RL = Reporting Limit

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080917JB1		
<b>Lab Sample ID:</b> JC48719-2		<b>Date Sampled:</b> 08/09/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Date Received:</b> 08/10/17
<b>Method:</b> SW846 8260C		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B140213.D	1	08/12/17 19:12	VC	n/a	n/a	V3B6203
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> FB080917JB1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-2		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		81-124%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

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

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB080917JB1	<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-2	<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42612

(2) Prep QC Batch: MP2390

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RL = Reporting Limit

4.3  
4

# Report of Analysis

<b>Client Sample ID:</b> TB080917JB1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-3		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B140214.D	1	08/12/17 19:40	VC	n/a	n/a	V3B6203
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	

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

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB080917JB1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-3		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	93%		81-124%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

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

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

4.4  
4



# Report of Analysis

<b>Client Sample ID:</b> MW-202-1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-4		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B140216.D	1	08/12/17 20:37	VC	n/a	n/a	V3B6203
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	0.80	1.0	0.21	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethane	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	1.4	1.0	0.50	ug/l	

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-202-1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-4		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	0.96	1.0	0.27	ug/l	J
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	94%		81-124%
2037-26-5	Toluene-D8	105%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

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

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-202-1	<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-4	<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	73.4	10	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42612

(2) Prep QC Batch: MP2390

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RL = Reporting Limit

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-202-1		<b>Date Sampled:</b> 08/09/17
<b>Lab Sample ID:</b> JC48719-4F		<b>Date Received:</b> 08/10/17
<b>Matrix:</b> AQ - Groundwater Filtered		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

4.6  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	14.4	10	ug/l	1	08/11/17	08/15/17 ND	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42612

(2) Prep QC Batch: MP2390

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-208-1		<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-1		<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B74115.D	1	08/16/17 16:07	HT	n/a	n/a	V4B3043
Run #2	4B74116.D	10	08/16/17 16:35	HT	n/a	n/a	V4B3043

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

## VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	1.4	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	1.1	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	268 <sup>a</sup>	10	5.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.6	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> MW-208-1	<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-1	<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	12.8	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	1.8	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	102%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	103%	81-124%
2037-26-5	Toluene-D8	101%	103%	80-120%
460-00-4	4-Bromofluorobenzene	109%	108%	80-120%

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

(a) Result is from Run# 2

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-208-1		<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-1		<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42631

(2) Prep QC Batch: MP2459

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RL = Reporting Limit

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-208-1	<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-1F	<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42631

(2) Prep QC Batch: MP2459

RL = Reporting Limit

4.2  
4





## Report of Analysis

<b>Client Sample ID:</b> FB081017JB1		<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-2		<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

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

(a) This compound in BS is outside in house QC limits bias high.

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB081017JB1 <b>Lab Sample ID:</b> JC48819-2 <b>Matrix:</b> AQ - Field Blank Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/10/17 <b>Date Received:</b> 08/11/17 <b>Percent Solids:</b> n/a
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### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42631

(2) Prep QC Batch: MP2459

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RL = Reporting Limit

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB081017JB1		<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-3		<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C152440.D	1	08/16/17 17:45	HT	n/a	n/a	V2C6756
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane <sup>a</sup>	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	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

<b>Client Sample ID:</b> TB081017JB1		<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-3		<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	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	110%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

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

(a) This compound in BS is outside in house QC limits bias high.

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

4.4  
4

# Report of Analysis

<b>Client Sample ID:</b> MW-203-1		<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-4		<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C152427.D	1	08/16/17 11:24	HT	n/a	n/a	V2C6756
Run #2							

Run #1	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	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	3.3	5.0	2.1	ug/l	J
75-00-3	Chloroethane <sup>a</sup>	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	0.35	1.0	0.29	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	0.34	1.0	0.21	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	0.55	1.0	0.50	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	1.2	1.0	0.50	ug/l	

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-203-1		<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-4		<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 BPGWVS List**

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	2.9	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

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

(a) This compound in BS is outside in house QC limits bias high.

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

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-203-1 <b>Lab Sample ID:</b> JC48819-4 <b>Matrix:</b> AQ - Ground Water <b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	<b>Date Sampled:</b> 08/10/17 <b>Date Received:</b> 08/11/17 <b>Percent Solids:</b> n/a
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4.5  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	138	10	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42631

(2) Prep QC Batch: MP2459

---

RL = Reporting Limit



## Report of Analysis

<b>Client Sample ID:</b> MW-203-1	<b>Date Sampled:</b> 08/10/17
<b>Lab Sample ID:</b> JC48819-4F	<b>Date Received:</b> 08/11/17
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	08/16/17	08/18/17 AB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA42631

(2) Prep QC Batch: MP2459

RL = Reporting Limit

4.6  
4

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48047X  
 Lab Sample ID: 429779001  
  
 Client ID: BCPMW4-2  
 Batch ID: 1688161  
 Run Date: 08/16/2017 20:38  
 Prep Date: 08/14/2017 09:00  
 Data File: s081617.B\s6h1611.D

Date Collected: 07/31/2017 11:05  
 Date Received: 08/04/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: LOF  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.35	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48047X  
 Lab Sample ID: 429779002  
  
 Client ID: FB073117-JB1  
 Batch ID: 1688161  
 Run Date: 08/16/2017 21:27  
 Prep Date: 08/14/2017 09:00  
 Data File: s081617.B\s6h1613.D

Date Collected: 07/31/2017 08:10  
 Date Received: 08/04/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: LOF  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48047X  
 Lab Sample ID: 429779003  
  
 Client ID: BCPMW4-1  
 Batch ID: 1688161  
 Run Date: 08/16/2017 22:17  
 Prep Date: 08/14/2017 09:00  
 Data File: s081617.B\s6h1615.D

Date Collected: 07/31/2017 13:40  
 Date Received: 08/04/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: LOF  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		2.64	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48165X  
 Lab Sample ID: 429780001  
  
 Client ID: BCPMW-7-1  
 Batch ID: 1693340  
 Run Date: 08/23/2017 16:50  
 Prep Date: 08/23/2017 12:30  
 Data File: s082317.B\s6h2307.D

Date Collected: 08/01/2017 11:05  
 Date Received: 08/04/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48165X  
 Lab Sample ID: 429780002  
  
 Client ID: FB080117MO1  
 Batch ID: 1693340  
 Run Date: 08/23/2017 17:45  
 Prep Date: 08/23/2017 12:30  
 Data File: s082317.B\s6h2309.D

Date Collected: 08/01/2017 08:15  
 Date Received: 08/04/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48165X  
 Lab Sample ID: 429780003  
  
 Client ID: BCPMW-6-1  
 Batch ID: 1688161  
 Run Date: 08/17/2017 11:37  
 Prep Date: 08/14/2017 09:00  
 Data File: s081717.B\s6h1708.D

Date Collected: 08/01/2017 14:10  
 Date Received: 08/04/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48247X  
 Lab Sample ID: 429849001  
  
 Client ID: BCPMW-6-2  
 Batch ID: 1688161  
 Run Date: 08/17/2017 12:28  
 Prep Date: 08/14/2017 09:00  
 Data File: s081717.B\s6h1710.D

Date Collected: 08/02/2017 11:30  
 Date Received: 08/05/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48247X  
 Lab Sample ID: 429849002  
  
 Client ID: FB080217JB1  
 Batch ID: 1688161  
 Run Date: 08/17/2017 12:55  
 Prep Date: 08/14/2017 09:00  
 Data File: s081717.B\s6h1711.D

Date Collected: 08/02/2017 08:15  
 Date Received: 08/05/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48247X  
 Lab Sample ID: 429849003  
  
 Client ID: B24MW-3  
 Batch ID: 1688161  
 Run Date: 08/17/2017 13:22  
 Prep Date: 08/14/2017 09:00  
 Data File: s081717.B\s6h1712.D

Date Collected: 08/02/2017 16:00  
 Date Received: 08/05/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.675	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48380X  
 Lab Sample ID: 430176001  
  
 Client ID: BCPMW-4-3  
 Batch ID: 1690984  
 Run Date: 08/17/2017 15:28  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1717.D

Date Collected: 08/03/2017 01:45  
 Date Received: 08/09/2017 09:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.616	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48380X  
 Lab Sample ID: 430176002  
  
 Client ID: FB080317JB1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 16:43  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1720.D

Date Collected: 08/03/2017 08:15  
 Date Received: 08/09/2017 09:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48380X  
 Lab Sample ID: 430176003  
  
 Client ID: B30MW-1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 17:07  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1721.D

Date Collected: 08/03/2017 13:41  
 Date Received: 08/09/2017 09:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48381X  
 Lab Sample ID: 430178001  
  
 Client ID: B24MW-2  
 Batch ID: 1693340  
 Run Date: 08/23/2017 20:49  
 Prep Date: 08/23/2017 12:30  
 Data File: s082317.B\s6h2316.D

Date Collected: 08/04/2017 13:40  
 Date Received: 08/09/2017 09:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.348	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48381X  
 Lab Sample ID: 430178002  
  
 Client ID: FB080417JB1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 17:55  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1723.D

Date Collected: 08/04/2017 11:00  
 Date Received: 08/09/2017 09:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248001  
  
 Client ID: MW-204-1  
 Batch ID: 1690984  
 Run Date: 08/18/2017 13:19  
 Prep Date: 08/15/2017 09:10  
 Data File: S081817.B\s6h1809.D

Date Collected: 08/07/2017 10:39  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.306	ug/L	0.100	0.100	0.200

2



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248002  
  
 Client ID: FB080717JB1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 18:46  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1725.D

Date Collected: 08/07/2017 07:00  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248003  
  
 Client ID: REP080717AD1  
 Batch ID: 1690984  
 Run Date: 08/18/2017 12:54  
 Prep Date: 08/15/2017 09:10  
 Data File: S081817.B\s6h1808.D

Date Collected: 08/07/2017 12:00  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.319	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248004  
  
 Client ID: MW-200-1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 20:24  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1729.D

Date Collected: 08/07/2017 13:03  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.537	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48598X  
 Lab Sample ID: 430365001  
  
 Client ID: MW-205-1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 20:48  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1730.D

Date Collected: 08/08/2017 09:42  
 Date Received: 08/11/2017 08:50  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.714	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48598X  
 Lab Sample ID: 430365002  
  
 Client ID: FB080817JB1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 21:12  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1731.D

Date Collected: 08/08/2017 10:10  
 Date Received: 08/11/2017 08:50  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48598X  
 Lab Sample ID: 430365003  
  
 Client ID: MW-201-1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 21:36  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1732.D

Date Collected: 08/08/2017 12:10  
 Date Received: 08/11/2017 08:50  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.676	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48719X  
 Lab Sample ID: 430526001  
  
 Client ID: MW-206-1  
 Batch ID: 1691562  
 Run Date: 08/30/2017 16:06  
 Prep Date: 08/30/2017 09:45  
 Data File: s083017.B\s6h3010.D

Date Collected: 08/09/2017 11:03  
 Date Received: 08/12/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.06	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48719X  
 Lab Sample ID: 430526002  
  
 Client ID: FB080917JB1  
 Batch ID: 1691562  
 Run Date: 08/30/2017 16:31  
 Prep Date: 08/30/2017 09:45  
 Data File: s083017.B\s6h3011.D

Date Collected: 08/09/2017 08:00  
 Date Received: 08/12/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48719X  
 Lab Sample ID: 430526003  
  
 Client ID: MW-202-1  
 Batch ID: 1691562  
 Run Date: 08/30/2017 17:23  
 Prep Date: 08/30/2017 09:45  
 Data File: s083017.B\s6h3013.D

Date Collected: 08/09/2017 14:37  
 Date Received: 08/12/2017 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.518	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248001  
  
 Client ID: MW-204-1  
 Batch ID: 1690984  
 Run Date: 08/18/2017 13:19  
 Prep Date: 08/15/2017 09:10  
 Data File: S081817.B\s6h1809.D

Date Collected: 08/07/2017 10:39  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.306	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248002  
  
 Client ID: FB080717JB1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 18:46  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1725.D

Date Collected: 08/07/2017 07:00  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248003  
  
 Client ID: REP080717AD1  
 Batch ID: 1690984  
 Run Date: 08/18/2017 12:54  
 Prep Date: 08/15/2017 09:10  
 Data File: S081817.B\s6h1808.D

Date Collected: 08/07/2017 12:00  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.319	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC48497X  
 Lab Sample ID: 430248004  
  
 Client ID: MW-200-1  
 Batch ID: 1690984  
 Run Date: 08/17/2017 20:24  
 Prep Date: 08/15/2017 09:10  
 Data File: s081717.B\s6h1729.D

Date Collected: 08/07/2017 13:03  
 Date Received: 08/10/2017 08:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.537	ug/L	0.100	0.100	0.200

2



## Report of Analysis

<b>Client Sample ID:</b> MW-109-3		<b>Date Sampled:</b> 05/08/17
<b>Lab Sample ID:</b> JC42942-1		<b>Date Received:</b> 05/09/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	ug/l	
79-01-6	Trichloroethene	307 <sup>a</sup>	10	2.6	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.42	ug/l	
95-47-6	o-Xylene	ND	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	101%	76-120%
17060-07-0	1,2-Dichloroethane-D4	102%	98%	73-122%
2037-26-5	Toluene-D8	98%	97%	84-119%
460-00-4	4-Bromofluorobenzene	96%	91%	78-117%

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

(a) Result is from Run# 2

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

4.1  
4

# Report of Analysis

<b>Client Sample ID:</b> TB050817AD1	<b>Date Sampled:</b> 05/08/17
<b>Lab Sample ID:</b> JC42942-2	<b>Date Received:</b> 05/09/17
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D128725.D	1	05/12/17 18:35	TK	n/a	n/a	V3D5457
Run #2							

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

### VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.33	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.93	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	ND	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.5	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.39	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	

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

4.2  
4



## Report of Analysis

<b>Client Sample ID:</b> TB050817AD1		<b>Date Sampled:</b> 05/08/17
<b>Lab Sample ID:</b> JC42942-2		<b>Date Received:</b> 05/09/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.26	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.42	ug/l	
95-47-6	o-Xylene	ND	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		76-120%
17060-07-0	1,2-Dichloroethane-D4	100%		73-122%
2037-26-5	Toluene-D8	98%		84-119%
460-00-4	4-Bromofluorobenzene	97%		78-117%

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

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

4.2  
4

# Report of Analysis

<b>Client Sample ID:</b> FB050817AD1	<b>Date Sampled:</b> 05/08/17
<b>Lab Sample ID:</b> JC42942-3	<b>Date Received:</b> 05/09/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D128726.D	1	05/12/17 19:03	TK	n/a	n/a	V3D5457
Run #2							

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

### VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.33	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.93	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	ND	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.5	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.39	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB050817AD1	<b>Date Sampled:</b> 05/08/17
<b>Lab Sample ID:</b> JC42942-3	<b>Date Received:</b> 05/09/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.26	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.42	ug/l	
95-47-6	o-Xylene	ND	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		76-120%
17060-07-0	1,2-Dichloroethane-D4	100%		73-122%
2037-26-5	Toluene-D8	97%		84-119%
460-00-4	4-Bromofluorobenzene	96%		78-117%

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

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-111-4		<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-1		<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D128716.D	5	05/12/17 13:55	TK	n/a	n/a	V3D5457
Run #2	3D128717.D	50	05/12/17 14:23	TK	n/a	n/a	V3D5457

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	25	ug/l	
71-43-2	Benzene	ND	2.5	0.70	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	2.8	ug/l	
75-25-2	Bromoform	ND	5.0	1.7	ug/l	
74-83-9	Bromomethane	ND	10	2.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	9.5	ug/l	
75-15-0	Carbon disulfide	ND	10	1.7	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	2.7	ug/l	
108-90-7	Chlorobenzene	ND	5.0	0.87	ug/l	
75-45-6	Chlorodifluoromethane	ND	25	4.7	ug/l	
75-00-3	Chloroethane	ND	5.0	2.2	ug/l	
67-66-3	Chloroform	3.7	5.0	1.1	ug/l	J
74-87-3	Chloromethane	ND	5.0	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	1.1	ug/l	
75-71-8	Dichlorodifluoromethane	ND	10	3.5	ug/l	
75-34-3	1,1-Dichloroethane	12.4	5.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	4.6	5.0	2.0	ug/l	J
75-35-4	1,1-Dichloroethene	7.4	5.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	966	5.0	1.5	ug/l	
156-60-5	trans-1,2-Dichloroethene	4.1	5.0	1.8	ug/l	J
78-87-5	1,2-Dichloropropane	ND	5.0	1.6	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	0.93	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.3	ug/l	
100-41-4	Ethylbenzene	ND	5.0	0.98	ug/l	
76-13-1	Freon 113	ND	25	5.8	ug/l	
591-78-6	2-Hexanone	ND	25	7.6	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	25	6.0	ug/l	
75-09-2	Methylene chloride	ND	10	5.0	ug/l	
100-42-5	Styrene	ND	5.0	1.4	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	2.0	ug/l	
127-18-4	Tetrachloroethene	10.1	5.0	1.2	ug/l	
108-88-3	Toluene	ND	5.0	1.1	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

<b>Client Sample ID:</b> MW-111-4		<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-1		<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	1.4	5.0	1.1	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.4	ug/l	
79-01-6	Trichloroethene	1850 <sup>a</sup>	50	13	ug/l	
75-01-4	Vinyl chloride	ND	5.0	1.6	ug/l	
	m,p-Xylene	ND	5.0	2.1	ug/l	
95-47-6	o-Xylene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	101%	76-120%
17060-07-0	1,2-Dichloroethane-D4	100%	101%	73-122%
2037-26-5	Toluene-D8	101%	100%	84-119%
460-00-4	4-Bromofluorobenzene	99%	101%	78-117%

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

(a) Result is from Run# 2

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

4.1  
4

# Report of Analysis

<b>Client Sample ID:</b> FB060917AD1	<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-2	<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D128723.D	1	05/12/17 17:39	TK	n/a	n/a	V3D5457
Run #2							

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

### VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.33	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.93	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	ND	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.5	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.39	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	

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

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> FB060917AD1	<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-2	<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

### VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.26	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.42	ug/l	
95-47-6	o-Xylene	ND	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		76-120%
17060-07-0	1,2-Dichloroethane-D4	100%		73-122%
2037-26-5	Toluene-D8	97%		84-119%
460-00-4	4-Bromofluorobenzene	98%		78-117%

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

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

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> TB060917AD1	<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-3	<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D128724.D	1	05/12/17 18:07	TK	n/a	n/a	V3D5457
Run #2							

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.33	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.93	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	ND	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.5	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.39	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.23	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

<b>Client Sample ID:</b> TB060917AD1		<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-3		<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.26	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.42	ug/l	
95-47-6	o-Xylene	ND	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		76-120%
17060-07-0	1,2-Dichloroethane-D4	101%		73-122%
2037-26-5	Toluene-D8	98%		84-119%
460-00-4	4-Bromofluorobenzene	97%		78-117%

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

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

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-116-5		<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-4		<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D128718.D	5	05/12/17 14:51	TK	n/a	n/a	V3D5457
Run #2	3D128719.D	50	05/12/17 15:19	TK	n/a	n/a	V3D5457

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	25	ug/l	
71-43-2	Benzene	ND	2.5	0.70	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	2.8	ug/l	
75-25-2	Bromoform	ND	5.0	1.7	ug/l	
74-83-9	Bromomethane	ND	10	2.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	9.5	ug/l	
75-15-0	Carbon disulfide	ND	10	1.7	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	2.7	ug/l	
108-90-7	Chlorobenzene	ND	5.0	0.87	ug/l	
75-45-6	Chlorodifluoromethane	ND	25	4.7	ug/l	
75-00-3	Chloroethane	ND	5.0	2.2	ug/l	
67-66-3	Chloroform	15.2	5.0	1.1	ug/l	
74-87-3	Chloromethane	ND	5.0	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	1.1	ug/l	
75-71-8	Dichlorodifluoromethane	ND	10	3.5	ug/l	
75-34-3	1,1-Dichloroethane	3.9	5.0	1.0	ug/l	J
107-06-2	1,2-Dichloroethane	14.0	5.0	2.0	ug/l	
75-35-4	1,1-Dichloroethene	6.3	5.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	262	5.0	1.5	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	5.0	1.8	ug/l	
78-87-5	1,2-Dichloropropane	4.4	5.0	1.6	ug/l	J
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	0.93	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.3	ug/l	
100-41-4	Ethylbenzene	ND	5.0	0.98	ug/l	
76-13-1	Freon 113	ND	25	5.8	ug/l	
591-78-6	2-Hexanone	ND	25	7.6	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	25	6.0	ug/l	
75-09-2	Methylene chloride	ND	10	5.0	ug/l	
100-42-5	Styrene	ND	5.0	1.4	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	2.0	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	1.2	ug/l	
108-88-3	Toluene	ND	5.0	1.1	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

<b>Client Sample ID:</b> MW-116-5		<b>Date Sampled:</b> 05/09/17
<b>Lab Sample ID:</b> JC43032-4		<b>Date Received:</b> 05/10/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	1.5	5.0	1.1	ug/l	J
79-00-5	1,1,2-Trichloroethane	1.6	5.0	1.4	ug/l	J
79-01-6	Trichloroethene	1580 <sup>a</sup>	50	13	ug/l	
75-01-4	Vinyl chloride	ND	5.0	1.6	ug/l	
	m,p-Xylene	ND	5.0	2.1	ug/l	
95-47-6	o-Xylene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	103%	76-120%
17060-07-0	1,2-Dichloroethane-D4	101%	101%	73-122%
2037-26-5	Toluene-D8	102%	100%	84-119%
460-00-4	4-Bromofluorobenzene	98%	99%	78-117%

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

(a) Result is from Run# 2

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

4.4  
4

# Report of Analysis

<b>Client Sample ID:</b> MW-116-5	<b>Date Sampled:</b> 06/07/17
<b>Lab Sample ID:</b> JC44892-1	<b>Date Received:</b> 06/08/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B138453.D	1	06/17/17 09:02	VC	n/a	n/a	V3B6133
Run #2	3B138469.D	20	06/17/17 18:03	VC	n/a	n/a	V3B6134

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	1.9	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	14.9	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	3.9	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	15.0	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	5.7	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	238 <sup>a</sup>	20	10	ug/l	
156-60-5	trans-1,2-Dichloroethene	1.7	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	4.0	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	1.5	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.25	ug/l	

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-116-5		<b>Date Sampled:</b> 06/07/17
<b>Lab Sample ID:</b> JC44892-1		<b>Date Received:</b> 06/08/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	1.7	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	2.2	1.0	0.24	ug/l	
79-01-6	Trichloroethene	1610 <sup>a</sup>	20	5.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%	109%	76-120%
17060-07-0	1,2-Dichloroethane-D4	108%	110%	73-122%
2037-26-5	Toluene-D8	98%	96%	84-119%
460-00-4	4-Bromofluorobenzene	88%	90%	78-117%

(a) Result is from Run# 2

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

4.1  
4



## Report of Analysis

<b>Client Sample ID:</b> TB060717AD1		<b>Date Sampled:</b> 06/07/17
<b>Lab Sample ID:</b> JC44892-2		<b>Date Received:</b> 06/08/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		76-120%
17060-07-0	1,2-Dichloroethane-D4	107%		73-122%
2037-26-5	Toluene-D8	97%		84-119%
460-00-4	4-Bromofluorobenzene	90%		78-117%

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

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

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> MW-116-5		<b>Date Sampled:</b> 07/12/17
<b>Lab Sample ID:</b> JC46927-1		<b>Date Received:</b> 07/13/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A172934.D	5	07/17/17 16:13	VC	n/a	n/a	V1A7348
Run #2	1A172909.D	25	07/15/17 05:46	VC	n/a	n/a	V1A7347

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	25	ug/l	
71-43-2	Benzene	ND	2.5	0.87	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	1.1	ug/l	
75-25-2	Bromoform	ND	5.0	2.1	ug/l	
74-83-9	Bromomethane	ND	10	6.9	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
75-15-0	Carbon disulfide	ND	10	1.2	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	1.7	ug/l	
108-90-7	Chlorobenzene	ND	5.0	1.2	ug/l	
75-45-6	Chlorodifluoromethane <sup>a</sup>	ND	25	11	ug/l	
75-00-3	Chloroethane	ND	5.0	3.0	ug/l	
67-66-3	Chloroform	15.6	5.0	1.4	ug/l	
74-87-3	Chloromethane	ND	5.0	2.7	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	0.82	ug/l	
75-71-8	Dichlorodifluoromethane	ND	10	9.3	ug/l	
75-34-3	1,1-Dichloroethane	5.0	5.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	16.0	5.0	1.0	ug/l	
75-35-4	1,1-Dichloroethene	6.8	5.0	2.4	ug/l	
156-59-2	cis-1,2-Dichloroethene	284	5.0	2.5	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	5.0	2.0	ug/l	
78-87-5	1,2-Dichloropropane	4.7	5.0	1.2	ug/l	J
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.3	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.1	ug/l	
100-41-4	Ethylbenzene	ND	5.0	1.1	ug/l	
76-13-1	Freon 113	ND	25	6.2	ug/l	
591-78-6	2-Hexanone	ND	25	16	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	25	15	ug/l	
75-09-2	Methylene chloride	ND	10	5.0	ug/l	
100-42-5	Styrene	ND	5.0	1.2	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	0.84	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	2.5	ug/l	
108-88-3	Toluene	ND	5.0	1.2	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound



**Report of Analysis**

<b>Client Sample ID:</b> MW-116-5	
<b>Lab Sample ID:</b> JC46927-1	<b>Date Sampled:</b> 07/12/17
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/13/17
<b>Method:</b> SW846 8260C	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	1.8	5.0	1.3	ug/l	J
79-00-5	1,1,2-Trichloroethane	1.9	5.0	1.2	ug/l	J
79-01-6	Trichloroethene	1670 <sup>b</sup>	25	6.7	ug/l	
75-01-4	Vinyl chloride	ND	5.0	3.1	ug/l	
	m,p-Xylene	ND	5.0	2.1	ug/l	
95-47-6	o-Xylene	ND	5.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%	112%	76-120%
17060-07-0	1,2-Dichloroethane-D4	115%	115%	73-122%
2037-26-5	Toluene-D8	102%	100%	84-119%
460-00-4	4-Bromofluorobenzene	108%	107%	78-117%

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

(a) This compound in BS is outside in house QC limits bias high.

(b) 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

## Report of Analysis

<b>Client Sample ID:</b>	TB071217AD1	<b>Date Sampled:</b>	07/12/17
<b>Lab Sample ID:</b>	JC46927-2	<b>Date Received:</b>	07/13/17
<b>Matrix:</b>	AQ - Trip Blank Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8260C		
<b>Project:</b>	Northrop Grumman, OU3 Hydro, Bethpage, NY		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A172910.D	1	07/15/17 06:17	VC	n/a	n/a	V1A7347
Run #2							

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane <sup>a</sup>	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.25	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

<b>Client Sample ID:</b> TB071217AD1	
<b>Lab Sample ID:</b> JC46927-2	<b>Date Sampled:</b> 07/12/17
<b>Matrix:</b> AQ - Trip Blank Water	<b>Date Received:</b> 07/13/17
<b>Method:</b> SW846 8260C	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethane	ND	1.0	0.27	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		76-120%
17060-07-0	1,2-Dichloroethane-D4	115%		73-122%
2037-26-5	Toluene-D8	101%		84-119%
460-00-4	4-Bromofluorobenzene	109%		78-117%

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

(a) This compound in BS is outside in house QC limits bias high.

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

<b>Client Sample ID:</b> MW-116-5		<b>Date Sampled:</b> 08/14/17
<b>Lab Sample ID:</b> JC49007-1		<b>Date Received:</b> 08/15/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	2.1	5.0	1.3	ug/l	J
79-00-5	1,1,2-Trichloroethane	2.4	5.0	1.2	ug/l	J
79-01-6	Trichloroethene	2320 <sup>a</sup>	50	13	ug/l	
75-01-4	Vinyl chloride	ND	5.0	3.1	ug/l	
	m,p-Xylene	ND	5.0	2.1	ug/l	
95-47-6	o-Xylene	ND	5.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%	105%	80-120%
17060-07-0	1,2-Dichloroethane-D4	109%	109%	81-124%
2037-26-5	Toluene-D8	101%	102%	80-120%
460-00-4	4-Bromofluorobenzene	111%	111%	80-120%

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

(a) 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

## Report of Analysis

<b>Client Sample ID:</b> TB081417AD1	<b>Date Sampled:</b> 08/14/17
<b>Lab Sample ID:</b> JC49007-2	<b>Date Received:</b> 08/15/17
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B74180.D	1	08/18/17 00:43	HT	n/a	n/a	V4B3046
Run #2							

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	2.1	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.9	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
76-13-1	Freon 113	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.25	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

<b>Client Sample ID:</b> TB081417AD1		<b>Date Sampled:</b> 08/14/17
<b>Lab Sample ID:</b> JC49007-2		<b>Date Received:</b> 08/15/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	110%		80-120%

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

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

4.2  
4

# Report of Analysis

<b>Client Sample ID:</b> MW-116-5	<b>Date Sampled:</b> 09/21/17
<b>Lab Sample ID:</b> JC51497-1	<b>Date Received:</b> 09/22/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B75538.D	5	10/03/17 17:05	HT	n/a	n/a	V4B3098
Run #2	4B75539.D	50	10/03/17 17:33	HT	n/a	n/a	V4B3098

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	25	ug/l	
71-43-2	Benzene	ND	2.5	0.87	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	1.1	ug/l	
75-25-2	Bromoform	ND	5.0	2.1	ug/l	
74-83-9	Bromomethane	ND	10	6.9	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
75-15-0	Carbon disulfide	ND	10	1.2	ug/l	
56-23-5	Carbon tetrachloride	1.9	5.0	1.7	ug/l	J
108-90-7	Chlorobenzene	ND	5.0	1.2	ug/l	
75-45-6	Chlorodifluoromethane	ND	25	11	ug/l	
75-00-3	Chloroethane	ND	5.0	3.0	ug/l	
67-66-3	Chloroform	15.5	5.0	1.4	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	5.0	2.7	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	0.82	ug/l	
75-71-8	Dichlorodifluoromethane	ND	10	9.3	ug/l	
75-34-3	1,1-Dichloroethane	4.0	5.0	1.0	ug/l	J
107-06-2	1,2-Dichloroethane	14.5	5.0	1.0	ug/l	
75-35-4	1,1-Dichloroethene	5.9	5.0	2.4	ug/l	
156-59-2	cis-1,2-Dichloroethene	263	5.0	2.5	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	5.0	2.0	ug/l	
78-87-5	1,2-Dichloropropane	3.7	5.0	1.2	ug/l	J
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.3	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.1	ug/l	
100-41-4	Ethylbenzene	ND	5.0	1.1	ug/l	
76-13-1	Freon 113	ND	25	6.2	ug/l	
591-78-6	2-Hexanone	ND	25	16	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	25	15	ug/l	
75-09-2	Methylene chloride	ND	10	5.0	ug/l	
100-42-5	Styrene	ND	5.0	1.2	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	0.84	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	2.5	ug/l	
108-88-3	Toluene	ND	5.0	1.2	ug/l	

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

4.1  
 4



## Report of Analysis

<b>Client Sample ID:</b> MW-116-5		<b>Date Sampled:</b> 09/21/17
<b>Lab Sample ID:</b> JC51497-1		<b>Date Received:</b> 09/22/17
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	1.5	5.0	1.3	ug/l	J
79-00-5	1,1,2-Trichloroethane	2.0	5.0	1.2	ug/l	J
79-01-6	Trichloroethene	1500 <sup>b</sup>	50	13	ug/l	
75-01-4	Vinyl chloride	ND	5.0	3.1	ug/l	
	m,p-Xylene	ND	5.0	2.1	ug/l	
95-47-6	o-Xylene	ND	5.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%	108%	80-120%
17060-07-0	1,2-Dichloroethane-D4	103%	104%	81-124%
2037-26-5	Toluene-D8	100%	101%	80-120%
460-00-4	4-Bromofluorobenzene	103%	102%	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 low.
- (b) Result is from Run# 2

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

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> TB092117AR1	<b>Date Sampled:</b> 09/21/17
<b>Lab Sample ID:</b> JC51497-2	<b>Date Received:</b> 09/22/17
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B75540.D	50	10/03/17 18:03	HT	n/a	n/a	V4B3098
Run #2							

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

## VOA OU3 Phase 2 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	500	250	ug/l	
71-43-2	Benzene	ND	25	8.7	ug/l	
75-27-4	Bromodichloromethane	ND	50	11	ug/l	
75-25-2	Bromoform	ND	50	21	ug/l	
74-83-9	Bromomethane	ND	100	69	ug/l	
78-93-3	2-Butanone (MEK)	ND	500	240	ug/l	
75-15-0	Carbon disulfide	ND	100	12	ug/l	
56-23-5	Carbon tetrachloride	ND	50	17	ug/l	
108-90-7	Chlorobenzene	ND	50	12	ug/l	
75-45-6	Chlorodifluoromethane	ND	250	110	ug/l	
75-00-3	Chloroethane	ND	50	30	ug/l	
67-66-3	Chloroform	ND	50	14	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	50	27	ug/l	
124-48-1	Dibromochloromethane	ND	50	8.2	ug/l	
75-71-8	Dichlorodifluoromethane	ND	100	93	ug/l	
75-34-3	1,1-Dichloroethane	ND	50	10	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	10	ug/l	
75-35-4	1,1-Dichloroethene	ND	50	24	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	50	25	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	50	20	ug/l	
78-87-5	1,2-Dichloropropane	ND	50	12	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	50	13	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	50	11	ug/l	
100-41-4	Ethylbenzene	ND	50	11	ug/l	
76-13-1	Freon 113	ND	250	62	ug/l	
591-78-6	2-Hexanone	ND	250	160	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	150	ug/l	
75-09-2	Methylene chloride	ND	100	50	ug/l	
100-42-5	Styrene	ND	50	12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	8.4	ug/l	
127-18-4	Tetrachloroethene	ND	50	25	ug/l	
108-88-3	Toluene	ND	50	12	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

<b>Client Sample ID:</b> TB092117AR1		<b>Date Sampled:</b> 09/21/17
<b>Lab Sample ID:</b> JC51497-2		<b>Date Received:</b> 09/22/17
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU3 Hydro, Bethpage, NY		

**VOA OU3 Phase 2 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-55-6	1,1,1-Trichloroethane	ND	50	13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	50	12	ug/l	
79-01-6	Trichloroethene	ND	50	13	ug/l	
75-01-4	Vinyl chloride	ND	50	31	ug/l	
	m,p-Xylene	ND	50	21	ug/l	
95-47-6	o-Xylene	ND	50	11	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	99%		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 low.

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

4.2  
4

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC42942X  
 Lab Sample ID: 423193001  
  
 Client ID: MW-109-3  
 Batch ID: 1665630  
 Run Date: 05/19/2017 14:11  
 Prep Date: 05/19/2017 11:45  
 Data File: s051917.B\s6e1907.D

Date Collected: 05/08/2017 16:18  
 Date Received: 05/16/2017 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 RTX-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	6.65	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC42942X  
 Lab Sample ID: 423193002  
  
 Client ID: FB050817AD1  
 Batch ID: 1665630  
 Run Date: 05/19/2017 14:37  
 Prep Date: 05/19/2017 11:45  
 Data File: s051917.B\s6e1908.D

Date Collected: 05/08/2017 15:00  
 Date Received: 05/16/2017 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 RTX-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC43032X  
 Lab Sample ID: 423054001  
  
 Client ID: MW-111-4  
 Batch ID: 1665340  
 Run Date: 05/18/2017 00:13  
 Prep Date: 05/17/2017 12:30  
 Data File: s051717a.B\s6e1734.D

Date Collected: 05/09/2017 09:35  
 Date Received: 05/12/2017 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 RTX-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 5  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		36.9	ug/L	0.500	0.500	1.00

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC43032X  
 Lab Sample ID: 423054002  
  
 Client ID: FB060917AD1  
 Batch ID: 1665340  
 Run Date: 05/17/2017 17:23  
 Prep Date: 05/17/2017 12:30  
 Data File: s051717a.B\s6e1717.D

Date Collected: 05/09/2017 08:10  
 Date Received: 05/12/2017 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 RTX-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC43032X  
 Lab Sample ID: 423054003  
  
 Client ID: MW-116-5  
 Batch ID: 1665340  
 Run Date: 05/18/2017 00:38  
 Prep Date: 05/17/2017 12:30  
 Data File: s051717a.B\s6e1735.D

Date Collected: 05/09/2017 14:52  
 Date Received: 05/12/2017 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 RTX-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 5  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		37.8	ug/L	0.500	0.500	1.00

2



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC44892X  
 Lab Sample ID: 425230001  
  
 Client ID: MW-116-5  
 Batch ID: 1675211  
 Run Date: 06/29/2017 09:45  
 Prep Date: 06/28/2017 11:30  
 Data File: s062917.B\s6f2905.D

Date Collected: 06/07/2017 11:38  
 Date Received: 06/10/2017 08:45  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 RTX-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 5  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		32.5	ug/L	0.500	0.500	1.00

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC46927X  
 Lab Sample ID: 428146001  
  
 Client ID: MW-116-5  
 Batch ID: 1684773  
 Run Date: 07/26/2017 13:49  
 Prep Date: 07/25/2017 09:45  
 Data File: s072617.B\s6g2605.D

Date Collected: 07/12/2017 10:45  
 Date Received: 07/18/2017 09:10  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: LOF  
 Aliquot: 100 mL  
 RTX-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 5  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		34.1	ug/L	0.500	0.500	1.00

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC49007X  
 Lab Sample ID: 430978001  
  
 Client ID: MW-116-5  
 Batch ID: 1693340  
 Run Date: 08/24/2017 11:26  
 Prep Date: 08/23/2017 12:30  
 Data File: s082417.B\s6h2407.D

Date Collected: 08/14/2017 13:37  
 Date Received: 08/18/2017 09:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 10  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		35.4	ug/L	1.00	1.00	2.00

2

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** JC51497X  
**Lab Sample ID:** 433567001  
  
**Client ID:** MW-116-5  
**Batch ID:** 1707680  
**Run Date:** 10/16/2017 20:51  
**Prep Date:** 10/16/2017 07:45  
**Data File:** s101617.B\s6i1624.D

**Date Collected:** 09/21/2017 15:44  
**Date Received:** 09/26/2017 09:05  
**Client:** ACTL003  
**Method:** EPA 522  
**Inst:** MSD6.I  
**Analyst:** JMB3  
**Aliquot:** 100 mL  
**Rtx-624**

**Matrix:** WATER  
  
**Project:** ACTL00316  
**SOP Ref:** GL-OA-E-073  
**Dilution:** 10  
**Inj. Vol:** 1 uL  
**Final Volume:** 2 mL

CAS No.	Parname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		33.1	ug/L	1.00	1.00	2.00

2