



Infrastructure, environment, buildings

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Mr. Steven Scharf, P.E.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

ENVIRONMENT

Subject:
Third Quarter 2004 Groundwater Monitoring Data,
Bethpage Water District and Former Plant 2,
Northrop Grumman Corporation, Bethpage, New York.

Date:
15 March 2005

Dear Mr. Scharf:

On behalf of Northrop Grumman Corporation (NGC), ARCADIS is providing the NYSDEC with groundwater data for the Third Quarter 2004 for the Bethpage Water District monitoring wells. Table 1 summarizes volatile organic compound (VOC) concentrations detected in groundwater samples. Figures 1 through 3 depict the trend in total VOC concentrations in groundwater.

Contact:
David E. Stern

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(631) 391-5284

Also provided are the results of the Third Quarter 2004 monitoring for total cadmium and chromium (Cd/Cr) near former NGC Plant 2. Table 2 summarizes Cd/Cr concentrations detected in groundwater samples during this period.

Email:
dstern@arcadis-us.com

Our ref:
NY001348.0405.00004

Please contact us if you have any questions or comments.

Sincerely,

ARCADIS G&M, Inc.

David E. Stern
Senior Scientist

Carlo San Giovanni
Project Manager

Copies:
J. Cofman - Northrop Grumman
J. Molloy - H2M

Part of a bigger picture

Table 1. Concentrations of Volatile Organic Compounds Detected in Bethpage Water District Monitoring Wells, Third Quarter 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	GM-35D2	GM-35D2	GM-36D	GM-36D	GM-36D2	GM-36D2
	SAMPLE ID:	GM-35D2	GM-35D2	GM-36D	GM-36D	GM-36D2	GM-36D2
	DATE:	11/16/2004	11/16/2004	11/22/2004	11/22/2004	11/22/2004	11/22/2004
	LAB/SAMPLER:	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC
Chloromethane		<5	<0.5	<5	<0.5	<5	<0.5
Bromomethane		<5	<0.5	<5	<0.5	<5	<0.5
Vinyl chloride		<2	<0.5	<2	<0.5	<2	<0.5
Chloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Methylene chloride		<5	<0.5	<5	<0.5	<5	<0.5
Acetone		<10	--	<10	--	<10	--
Carbon disulfide		<5	--	<5	--	<5	--
1,1-Dichloroethene		1 J	1.5	<5	<0.5	<5	<0.5
1,1-Dichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
cis-1,2-Dichloroethene		4 J	3.1	<5	<0.5	<5	<0.5
trans-1,2-Dichloroethene		<5	<0.5	<5	<0.5	<5	<0.5
Chloroform		<5	0.5	<5	<0.5	<5	<0.5
1,2-Dichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
2-Butanone		<10	--	<10	--	<10	--
1,1,1-Trichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Carbon tetrachloride		<5	<0.5	<5	<0.5	<5	<0.5
Bromodichloromethane		<5	<0.5	<5	<0.5	<5	<0.5
1,2-Dichloropropane		<5	<0.5	<5	<0.5	<5	<0.5
cis-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<5	<0.5
Trichloroethene		300D	371	13	13.7	<5	<0.5
Dibromochloromethane		<5	<0.5	<5	<0.5	<5	<0.5
1,1,2-Trichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Benzene		<0.7	<0.5	<0.7	<0.5	<0.7	<0.5
trans-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<5	<0.5
Bromoform		<5	<0.5	<5	<0.5	<5	<0.5
4-Methyl-2-pentanone		<10	--	<10	--	<10	--
2-Hexanone		<10	--	<10	--	<10	--
Tetrachloroethene		7	6.4	0.8 J	<0.5	<5	<0.5
1,1,2,2-Tetrachloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Toluene		<5	<0.5	<5	<0.5	<5	<0.5
Chlorobenzene		<5	<0.5	<5	<0.5	<5	<0.5
Ethylbenzene		<5	<0.5	<5	<0.5	<5	<0.5
Styrene		<5	<0.5	<5	<0.5	<5	<0.5
Xylene (total)		<5	<0.5	<5	<0.5	<5	<0.5
Vinyl Acetate		<5	--	<5	--	<5	--
Freon 113		8	--	<5	--	<5	--
Total VOCs		320	382.5	13.8	13.7	0	0

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.
 ARC ARCADIS G&M, Inc.
 STL Severn Trent Laboratories, Inc., Shelton Connecticut.
 ug/L Micrograms per liter
 J Estimated value
 D Constituent identified at a secondary dilution.
 -- Not analyzed
Bold Constituent detected above Method Detection Limit

Table 1. Concentrations of Volatile Organic Compounds Detected in Bethpage Water District Monitoring Wells, Third Quarter 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	GM-37D	GM-37D	GM-37D2	GM-37D2	GM-38D	GM-38D
	SAMPLE ID:	GM-37D	GM-37D	GM-37D2	GM-37D2	GM-38D	GM-38D
	DATE:	11/17/2004	11/17/2004	11/17/2004	11/17/2004	11/19/2004	11/19/2004
	LAB/SAMPLER:	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC
Chloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
Bromomethane	<5	<0.5	<5	<0.5	<5	<0.5	
Vinyl chloride	<2	<0.5	<2	<0.5	<2	<0.5	
Chloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
Methylene chloride	<5	<0.5	<5	<0.5	<5	<0.5	
Acetone	<10	--	<10	--	<10	--	
Carbon disulfide	<5	--	<5	--	<5	--	
1,1-Dichloroethene	0.9 J	<0.5	3 J	1.2	7	5.9	
1,1-Dichloroethane	1 J	0.6	7	5.8	3 J	2.7	
cis-1,2-Dichloroethene	<5	<0.5	<5	<0.5	2 J	1.4	
trans-1,2-Dichloroethene	<5	<0.5	<5	<0.5	<5	<0.5	
Chloroform	0.6 J	<0.5	<5	<0.5	0.7 J	0.8	
1,2-Dichloroethane	<5	<0.5	<5	<0.5	<5	0.6	
2-Butanone	<10	--	<10	--	<10	--	
1,1,1-Trichloroethane	<5	0.6	3 J	2.7	4 J	4	
Carbon tetrachloride	<5	<0.5	<5	<0.5	0.7 J	0.7	
Bromodichloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
1,2-Dichloropropane	<5	<0.5	<5	<0.5	<5	<0.5	
cis-1,3-Dichloropropene	<5	<0.5	<5	<0.5	<5	<0.5	
Trichloroethene	<5	<0.5	2 J	1	730D	821	
Dibromochloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
1,1,2-Trichloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
Benzene	<0.7	<0.5	<0.7	<0.5	<0.7	<0.5	
trans-1,3-Dichloropropene	<5	<0.5	<5	<0.5	<5	<0.5	
Bromoform	<5	<0.5	<5	<0.5	<5	<0.5	
4-Methyl-2-pentanone	<10	--	<10	--	<10	--	
2-Hexanone	<10	--	<10	--	<10	--	
Tetrachloroethene	0.7 J	<0.5	<5	<0.5	1 J	1	
1,1,2,2-Tetrachloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
Toluene	<5	<0.5	<5	<0.5	<5	<0.5	
Chlorobenzene	<5	<0.5	<5	<0.5	<5	<0.5	
Ethylbenzene	<5	<0.5	<5	<0.5	<5	<0.5	
Styrene	<5	<0.5	<5	<0.5	<5	<0.5	
Xylene (total)	<5	<0.5	<5	<0.5	<5	<0.5	
Vinyl Acetate	<5	--	<5	--	<5	--	
Freon 113	<5	--	<5	--	2 J	--	
Total VOCs	3.2	1.2	15	10.7	750.4	838.1	

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.
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 STL Severn Trent Laboratories, Inc., Shelton Connecticut.
 ug/L Micrograms per liter
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 D Constituent identified at a secondary dilution.
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Bold Constituent detected above Method Detection Limit

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Table 1. Concentrations of Volatile Organic Compounds Detected in Bethpage Water District Monitoring Wells,
Third Quarter 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	GM-38D2	GM-38D2	GM-70D2	GM-70D2	GM-71D2	GM-71D2
	SAMPLE ID:	GM-38D2	GM-38D2	GM-70D2	GM-70D2	GM-71D-2	GM-71D2
	DATE:	11/19/2004	11/19/2004	11/22/2004	11/22/2004	11/24/2004	11/24/2004
	LAB/SAMPLER:	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC
Chloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
Bromomethane	<5	<0.5	<5	<0.5	<5	<0.5	
Vinyl chloride	<2	<0.5	<2	<0.5	<2	<0.5	
Chloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
Methylene chloride	<5	<0.5	<5	<0.5	<5	<0.5	
Acetone	<10	--	<10	--	<10	--	
Carbon disulfide	<5	--	<5	--	<5	--	
1,1-Dichloroethene	2 J	1.7	<5	<0.5	2 J	<0.5	
1,1-Dichloroethane	<5	<0.5	<5	<0.5	6	5.4	
cis-1,2-Dichloroethene	7	6.1	1 J	0.6	<5	<0.5	
trans-1,2-Dichloroethene	<5	<0.5	<5	<0.5	<5	<0.5	
Chloroform	0.9 J	1.3	<5	<0.5	1 J	1.3	
1,2-Dichloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
2-Butanone	<10	--	<10	--	<10	--	
1,1,1-Trichloroethane	<5	1.3	<5	<0.5	1 J	1.4	
Carbon tetrachloride	<5	<0.5	<5	<0.5	0.8 J	0.9	
Bromodichloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
1,2-Dichloropropane	<5	<0.5	<5	<0.5	<5	<0.5	
cis-1,3-Dichloropropene	<5	<0.5	<5	<0.5	<5	<0.5	
Trichloroethene	1200D	1390	110	120	4 J	3.8	
Dibromochloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
1,1,2-Trichloroethane	1 J	1	<5	<0.5	<5	<0.5	
Benzene	<0.7	<0.5	<0.7	<0.5	<0.7	<0.5	
trans-1,3-Dichloropropene	<5	<0.5	<5	<0.5	<5	<0.5	
Bromoform	<5	<0.5	<5	<0.5	<5	<0.5	
4-Methyl-2-pentanone	<10	--	<10	--	<10	--	
2-Hexanone	<10	--	<10	--	<10	--	
Tetrachloroethene	<5	<0.5	9	6.6	<5	<0.5	
1,1,2,2-Tetrachloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
Toluene	<5	<0.5	<5	<0.5	<5	<0.5	
Chlorobenzene	<5	<0.5	<5	<0.5	<5	<0.5	
Ethylbenzene	<5	<0.5	<5	<0.5	<5	<0.5	
Styrene	<5	<0.5	<5	<0.5	<5	<0.5	
Xylene (total)	<5	<0.5	<5	<0.5	<5	<0.5	
Vinyl Acetate	<5	--	<5	--	<5	--	
Freon 113	2 J	--	3 J	--	<5	--	
Total VOCs	1,212.9	1,401.4	123	127.2	14.8	12.8	

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.
 ARC ARCADIS G&M, Inc.
 STL Severn Trent Laboratories, Inc., Shelton Connecticut.
 ug/L Micrograms per liter
 J Estimated value
 D Constituent identified at a secondary dilution.
 -- Not analyzed
Bold Constituent detected above Method Detection Limit

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Table 2. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Groundwater, Third Quarter 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE: SAMPLE ID: DATE:	MW-01GF GM-1GF 10/11/2004	MW-02GF GM-2GF 10/11/2004	MW-03R MW-3R 09/30/2004	10631 N-10631 11/16/2004	GM-15S GM-15S 10/04/2004	GM-16SR GM-16SR 10/01/2004	GM-17SR GM-17SR 09/30/2004	GM-18S GM-18S 11/16/2004	GM-32S GM-32S 10/11/2004	GM-78S 78 S 09/30/2004	GM-78I 78 I 09/30/2004
Cadmium		<10	<10	42.2	5.8B	--	<10	<10	2.4B	<10	<10	<10
Cadmium (Dissolved)		<10	<10	41.7	4.9B	--	<10	<10	1.9B	<10	--	--
Chromium		<10	29.9	74.6	25.9	344	<10	1.4B	<10	54.7	<10	2.7B
Chromium (Dissolved)		<10	27.1	76.9	19	--	<10	<10	2.8B	53.9	--	--

ug/L
 B Detected between the IDL and CRDL
 IDL Instrument detection limit
 CRDL Contract-required detection limit
Bold Constituent detected above IDL.
 -- Not analyzed.

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Table 2. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Groundwater, Third Quarter 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	MW-04	MW-05	MW-06
	SAMPLE ID:	PT1MW-04	PT1MW-05	PT1MW-06
	DATE:	10/01/2004	10/01/2004	10/01/2004
Cadmium		--	--	--
Cadmium (Dissolved)		--	--	--
Chromium		<10	1060	307
Chromium (Dissolved)		--	--	--

ug/L
 B Detected between the IDL and CRDL
 IDL Instrument detection limit
 CRDL Contract-required detection limit
Bold Constituent detected above IDL.
 -- Not analyzed.