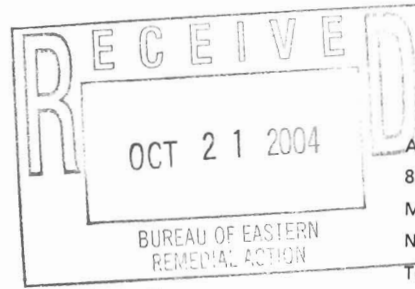


1-30-0037-002



Infrastructure, buildings, environment, communications



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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

ENVIRONMENTAL

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

Date:  
18 October 2004

Dear Mr. Scharf:

On behalf of Northrop Grumman Corporation (NGC), ARCADIS is providing the NYSDEC with groundwater data for the First Quarter of 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 historical concentrations of total VOCs in groundwater.

Contact:  
David Stern

Phone:  
(631) 391-5284

Also provided are the results of the First Quarter of 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:  
NY001348.0404.00004

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

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

CONSTITUENT (ug/L)	SITE: SAMPLE ID: DATE: LAB/SAMPLER:	GM-35D2 GM-35D2 04/02/2004 STL/G&M	GM-35D2 GM-35D2 04/02/2004 H2M/H2M	GM-36D GM 36D 03/30/2004 STL/G&M	GM-36D GM-36D 03/30/2004 H2M/H2M	GM-36D2 GM 36D2 03/30/2004 STL/G&M	GM-36D2 GM-36D2 03/30/2004 H2M/H2M
Chloromethane		<20	<0.5	<5	<0.5	<5	<0.5
Bromomethane		<20	<0.5	<5	<0.5	<5	<0.5
Vinyl chloride		<8	<0.5	<2	<0.5	<2	<0.5
Chloroethane		<20	<0.5	<5	<0.5	<5	<0.5
Methylene chloride		<20	<0.5	<5	<0.5	<5	<0.5
Acetone		<40	--	<10	--	<10	--
Carbon disulfide		5 J	--	0.7 J	--	<5	--
1,1-Dichloroethene		<20	1.8	<5	<0.5	<5	<0.5
1,1-Dichloroethane		<20	<0.5	<5	<0.5	<5	<0.5
Chloroform		<20	<0.5	<5	<0.5	<5	<0.5
1,2-Dichloroethane		<20	<0.5	<5	<0.5	<5	<0.5
2-Butanone		<40	--	<10	--	<10	--
1,1,1-Trichloroethane		<20	<0.5	<5	<0.5	<5	<0.5
Carbon tetrachloride		<20	<0.5	<5	<0.5	<5	<0.5
Bromodichloromethane		<20	<0.5	<5	<0.5	<5	<0.5
1,2-Dichloropropane		<20	<0.5	<5	<0.5	<5	<0.5
cis-1,3-Dichloropropene		<20	<0.5	<5	<0.5	<5	<0.5
Trichloroethene		360	199	14	13	<5	<0.5
Dibromochloromethane		<20	<0.5	<5	<0.5	<5	<0.5
1,1,2-Trichloroethane		<20	<0.5	<5	<0.5	<5	<0.5
Benzene		<3	<0.5	<0.7	<0.5	<0.7	<0.5
trans-1,3-Dichloropropene		<20	<0.5	<5	<0.5	<5	<0.5
Bromoform		<20	<0.5	<5	<0.5	<5	<0.5
4-Methyl-2-pentanone		<40	--	<10	--	<10	--
2-Hexanone		<40	--	<10	--	<10	--
Tetrachloroethene		6 J	5	0.8 J	0.6	<5	<0.5
1,1,2,2-Tetrachloroethane		<20	<0.5	<5	<0.5	<5	<0.5
Toluene		<20	<0.5	<5	<0.5	<5	<0.5
Chlorobenzene		<20	<0.5	<5	<0.5	<5	<0.5
Ethylbenzene		<20	<0.5	<5	<0.5	<5	<0.5
Styrene		<20	<0.5	<5	<0.5	<5	<0.5
Xylene (total)		<20	--	<5	--	<5	--
Vinyl Acetate		<20	--	<5	--	<5	--
Freon 113		10 J	--	0.6 J	--	<5	--
cis-1,2-Dichloroethene		3 J	3.5	<5	<0.5	<5	<0.5
trans-1,2-Dichloroethylene		<20	<0.5	<5	<0.5	<5	<0.5
<b>Total VOCs</b>		<b>384</b>	<b>209.3</b>	<b>16.1</b>	<b>13.6</b>	<b>0</b>	<b>0</b>

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.  
G&M ARCADIS G&M, Inc.  
STL Severn Trent Laboratories, Inc., Shelton Connecticut.  
ug/L Micrograms per liter  
J Estimated value  
-- Not analyzed  
REP Replicate sample  
**Bold** Constituent detected above Method Detection Limit

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

CONSTITUENT (ug/L)	SITE: SAMPLE ID: DATE: LAB/SAMPLER:	GM-37D GM-37D 03/31/2004 STL/G&M	GM-37D GM-37D 03/31/2004 H2M/H2M	GM-37D2 GM-37D2 04/01/2004 STL/G&M	GM-37D2 GM-37D2 04/01/2004 H2M/H2M	GM-38D GM-38D 03/31/2004 STL/G&M	GM-38D GM-38D 03/31/2004 H2M/H2M
Chloromethane		<5	<0.5	<5	<0.5	<25	<0.5
Bromomethane		<5	<0.5	<5	<0.5	<25	<0.5
Vinyl chloride		<2	<0.5	<2	<0.5	<10	<0.5
Chloroethane		<5	<0.5	<5	<0.5	<25	<0.5
Methylene chloride		<5	<0.5	<5	<0.5	<25	<0.5
Acetone		<10	--	<10	--	<50	--
Carbon disulfide		<5	--	<5	--	<25	--
1,1-Dichloroethene		1 J	<0.5	2 J	1	5 J	4
1,1-Dichloroethane		2 J	1.3	7	5	<25	2
Chloroform		0.9 J	<0.5	0.6 J	<0.5	<25	0.9
1,2-Dichloroethane		<5	<0.5	<5	<0.5	<25	0.8
2-Butanone		<10	--	<10	--	<50	--
1,1,1-Trichloroethane		2 J	1.1	3 J	2.1	4 J	3.1
Carbon tetrachloride		<5	<0.5	<5	<0.5	<25	0.6
Bromodichloromethane		<5	<0.5	<5	<0.5	<25	<0.5
1,2-Dichloropropane		<5	<0.5	<5	<0.5	<25	<0.5
cis-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<25	<0.5
Trichloroethene		<5	<0.5	2 J	1	810	269
Dibromochloromethane		<5	<0.5	<5	<0.5	<25	<0.5
1,1,2-Trichloroethane		<5	<0.5	<5	<0.5	<25	<0.5
Benzene		<0.7	<0.5	<0.7	<0.5	<4	<0.5
trans-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<25	<0.5
Bromoform		<5	<0.5	<5	<0.5	<25	<0.5
4-Methyl-2-pentanone		<10	--	<10	--	<50	--
2-Hexanone		<10	--	<10	--	<50	--
Tetrachloroethene		0.8 J	<0.5	<5	<0.5	<25	1
1,1,2,2-Tetrachloroethane		<5	<0.5	<5	<0.5	<25	<0.5
Toluene		<5	<0.5	<5	<0.5	<25	<0.5
Chlorobenzene		<5	<0.5	<5	<0.5	<25	<0.5
Ethylbenzene		<5	<0.5	<5	<0.5	<25	<0.5
Styrene		<5	<0.5	<5	<0.5	<25	<0.5
Xylene (total)		<5	--	<5	--	<25	--
Vinyl Acetate		<5	--	<5	--	<25	--
Freon 113		<5	--	<5	--	<25	--
cis-1,2-Dichloroethene		<5	<0.5	<5	<0.5	<25	1.5
trans-1,2-Dichloroethylene		<5	<0.5	<5	<0.5	<25	<0.5
<b>Total VOCs</b>		<b>6.7</b>	<b>2.4</b>	<b>14.6</b>	<b>9.1</b>	<b>819</b>	<b>282.9</b>

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.  
G&M ARCADIS G&M, Inc.  
STL Severn Trent Laboratories, Inc., Shelton Connecticut.  
ug/L Micrograms per liter  
J Estimated value  
-- Not analyzed  
REP Replicate sample  
**Bold** Constituent detected above Method Detection Limit

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

CONSTITUENT (ug/L)	SITE: SAMPLE ID: DATE: LAB/SAMPLER:	GM-38D2 GM-38D2 04/01/2004 STL/G&M	GM-38D2 GM-38D2 04/01/2004 H2M/H2M	GM-70D2 GM 70D2 03/29/2004 STL/G&M	GM-70D2 GM-70D2 03/29/2004 H2M/H2M	GM-71D2 GM -71D2 5/7/2004 STL/G&M
Chloromethane		<50	<0.5	<5	<0.5	<5
Bromomethane		<50	<0.5	<5	<0.5	<5
Vinyl chloride		<20	<0.5	<2	<0.5	<2
Chloroethane		<50	<0.5	<5	<0.5	<5
Methylene chloride		<50	<0.5	<5	<0.5	<5
Acetone		<100	--	6 J	--	<10
Carbon disulfide		<50	--	0.8 J	--	<5
1,1-Dichloroethene		<50	1	0.7 J	<0.5	2
1,1-Dichloroethane		<50	<0.5	<5	<0.5	5
Chloroform		<50	<0.5	<5	<0.5	1
1,2-Dichloroethane		<50	<0.5	<5	<0.5	<5
2-Butanone		<100	--	<10	--	<10
1,1,1-Trichloroethane		<50	0.6	<5	<0.5	<5
Carbon tetrachloride		<50	<0.5	<5	<0.5	<5
Bromodichloromethane		<50	<0.5	<5	<0.5	<5
1,2-Dichloropropane		<50	<0.5	<5	<0.5	<5
cis-1,3-Dichloropropene		<50	<0.5	<5	<0.5	<5
Trichloroethene		1,100	274	140	129	4
Dibromochloromethane		<50	<0.5	<5	<0.5	<5
1,1,2-Trichloroethane		<50	0.9	<5	<0.5	<5
Benzene		<7	<0.5	<0.7	<0.5	<0.7
trans-1,3-Dichloropropene		<50	<0.5	<5	<0.5	<5
Bromoform		<50	<0.5	<5	<0.5	<5
4-Methyl-2-pentanone		<100	--	<10	--	<10
2-Hexanone		<100	--	<10	--	<10
Tetrachloroethene		<50	<0.5	9	7	<5
1,1,2,2-Tetrachloroethane		<50	<0.5	<5	<0.5	<5
Toluene		<50	<0.5	<5	<0.5	<5
Chlorobenzene		<50	<0.5	<5	<0.5	<5
Ethylbenzene		<50	<0.5	<5	<0.5	<5
Styrene		<50	<0.5	<5	<0.5	<5
Xylene (total)		<50	--	<5	--	<5
Vinyl Acetate		<50	--	<5	--	<5
Freon 113		<50	--	3 J	--	<5
cis-1,2-Dichloroethene		6 J	5.7	2 J	1	<5
trans-1,2-Dichloroethylene		<50	<0.5	<5	<0.5	<5
<b>Total VOCs</b>		<b>1,106</b>	<b>282.2</b>	<b>161.5</b>	<b>137</b>	<b>12</b>

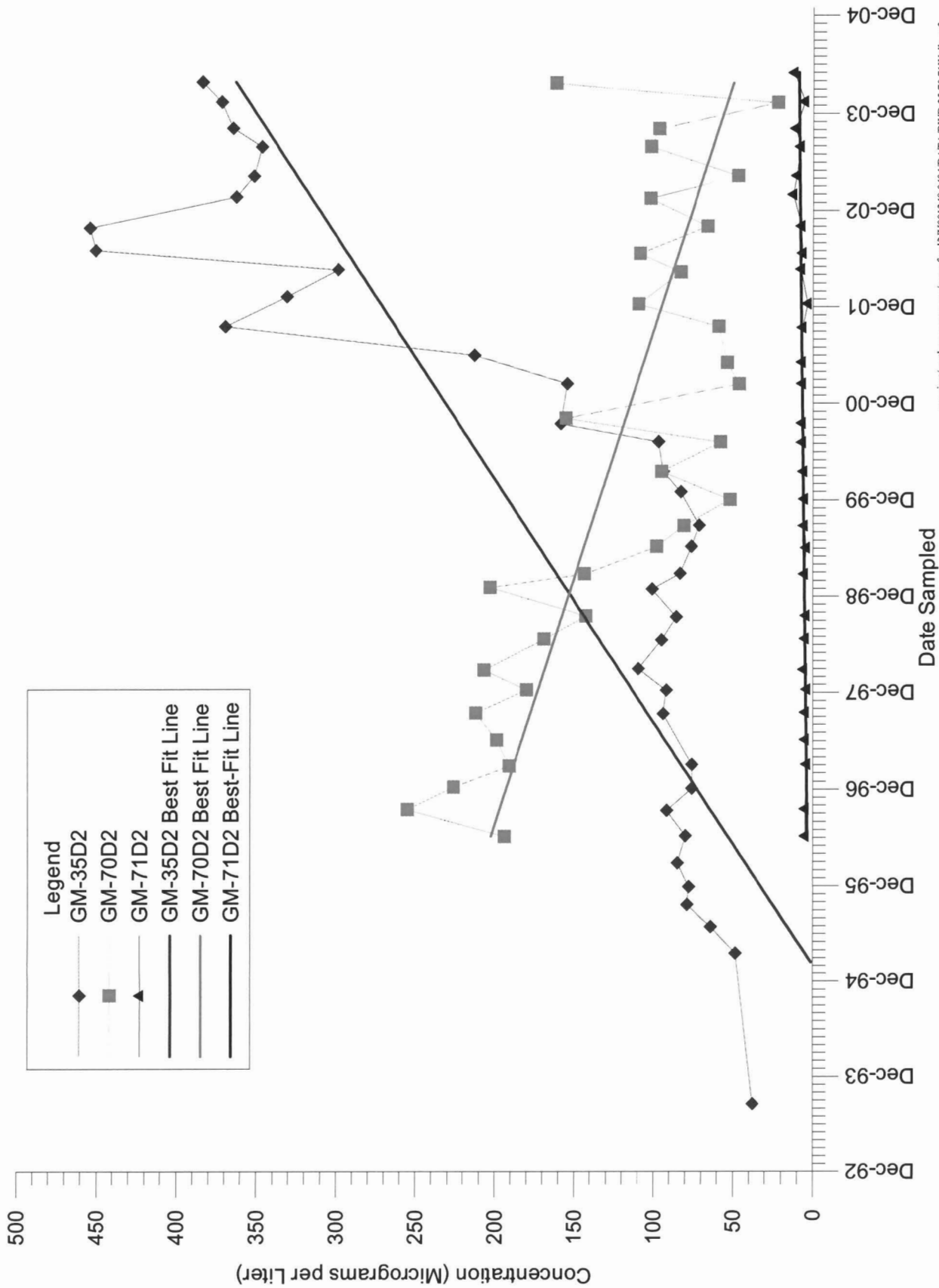
H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.  
G&M ARCADIS G&M, Inc.  
STL Severn Trent Laboratories, Inc., Shelton Connecticut.  
ug/L Micrograms per liter  
J Estimated value  
-- Not analyzed  
REP Replicate sample  
Bold Constituent detected above Method Detection Limit

# ARCADIS

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

CONSTITUENT (ug/L)	SITE: SAMPLE ID: DATE:	GM-16SR GM 16SR 03/29/2004	GM-17SR GM 17SR 03/29/2004	GM-18S GM 18S 03/30/2004	GM-32S GM-32S 04/07/2004	GM-78S GM-78S 03/19/2004	GM-78I GM-78I 03/19/2004	MW-01GF MW-1GF 04/05/2004	MW-02GF MW-2GF 04/05/2004	MW-03R MW-3R 03/19/2004
Cadmium	3.7 B	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	38.5
Cadmium (Dissolved)	2.4 B	<1.1	<1.1	<1.1	<1.1	--	--	<1.1	<1.1	36.7
Chromium	38.9	<1.3	<1.3	4 B	48.8	2.9 B	2.3 B	2.4 B	249	70.1
Chromium (Dissolved)	20.8	<1.3	<1.3	<1.3	47.2	--	--	<1.3	245	68.7

ug/L Micrograms per liter  
 B Detected between the IDL and CRDL  
 IDL Instrument detection limit  
 CRDL Contract-required detection limit  
 NYSDEC New York State Department of Environmental Conservation  
 Bold Constituent detected above IDL.  
 -- Not analyzed.

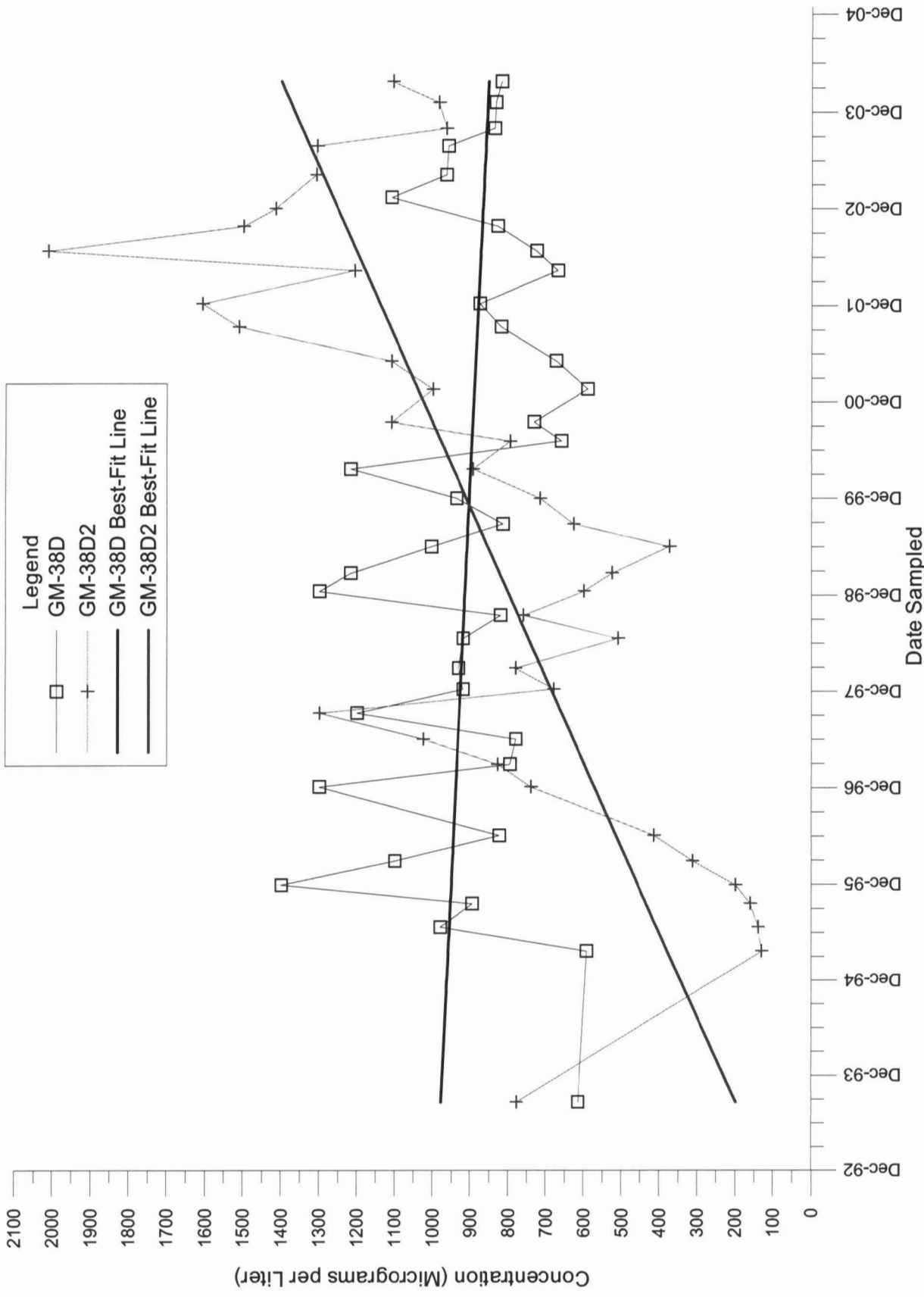


aproject/northrop grumman/superfund/NY001348.0404/DATA/BWD\_35\_70\_71Wells.grf

**FIGURE 1**

**Total Volatile Organic Compound Concentrations in Selected Deep2 Monitoring Wells**  
**Northrop Grumman Corporation, Bethpage, New York**



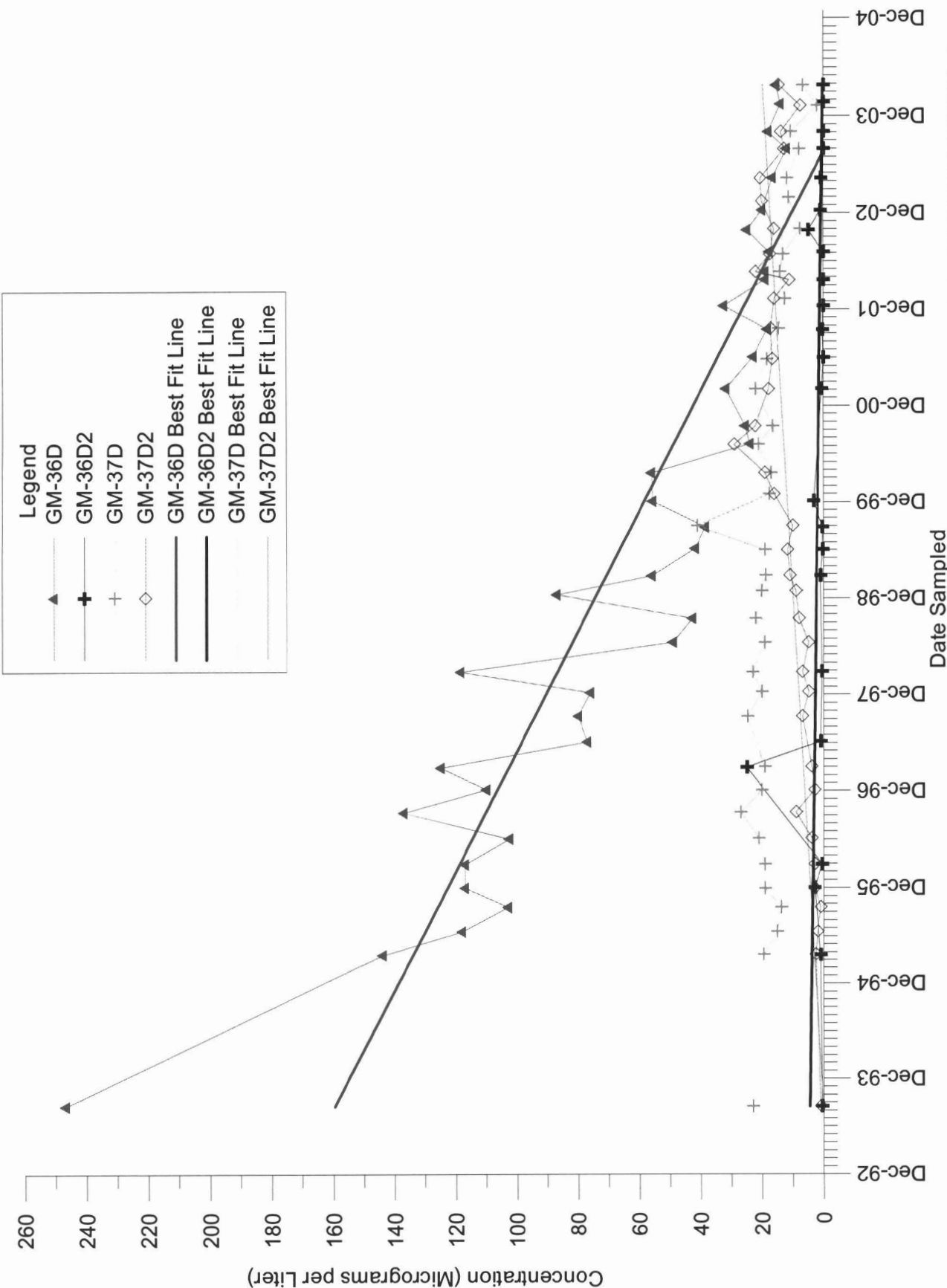


project/northrop\_grumman/superfund/NY001348\_0404/DATA/BWD\_384\_38D2.GRF

**FIGURE 2**

Total Volatile Organic Compound Concentrations in GM-38 Area Deep and Deep2 Monitoring Wells Northrop Grumman Corporation, Bethpage, New York





project\northrop\_grumman\superfund\NY001348\_0404\DATA\BWD 36,37 Wells.grf

**Total Volatile Organic Compound Concentrations in Selected Deep and Deep2 Monitoring Wells Northrop Grumman Corporation, Bethpage, New York**

**FIGURE 3**

