Second Quarter 2004 Groundwater Monitoring Report

Operable Unit 2
Northrop Grumman Corporation,
Bethpage, New York
NYSDEC Site #1-30-0003A

ARCADIS
Infrastructure, buildings, environment, communications

ARCADIS

David E. Stern
Senior Hydrogeologist

Carlo San Giovanni
Project Manager

Michael F. Wolfert
Hydrogeologist/Project Director

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Groundwater Monitoring
Report

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Prepared for:
Northrop Grumman Corporation

Prepared by:
ARCADIS G&M, Inc.
88 Duryea Road
Melville
New York 11747
Tel 631 249 7600
Fax 631 249 7610

Our Ref.:
NY001348.0404.00004

Date:
15 March 2005

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1. Introduction

This groundwater monitoring report was prepared to document the operation, maintenance, and monitoring (OM&M) activities for the Operable Unit 2 (OU2) groundwater remedy at the Northrop Grumman Corporation (NGC) Bethpage, New York facility. These activities are currently being conducted by NGC, in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved OU2 Groundwater Monitoring Plan (ARCADIS Geraghty & Miller, Inc., 2001), to meet the remedial objectives set forth in the March 2001 Record of Decision (ROD) for OU2 (NYSDEC 2001).

Overall, this report describes the operational and effectiveness monitoring of the on-site portion of the OU2 groundwater remedy for the period of March 31, 2004 through July 14, 2004, which is referred to in this report as the Second Quarter 2004 report period. The Annual Report will include evaluation of long-term data trends. The complete description of the monitoring program and rationale/basis for evaluation of data can be found in the 2002 Annual Report (ARCADIS G&M, Inc. 2003b). The contents of the reports as well as the findings and conclusions will continue to be re-evaluated in future reports as additional data becomes available.

2. Monitoring Program

Monitoring activities conducted for this report and the results obtained are provided in Tables 1 through 10 and are described and discussed in the following report sections: Remedial System Operational Monitoring (Section 3), Groundwater Flow (Section 4), and Groundwater Quality (Section 5).

On June 3, 2004, ARCADIS submitted a petition to the NYSDEC to reduce the monitoring frequency for selected wells (from quarterly to semi-annually) that are included in the OU2 Groundwater Monitoring Plan (ARCADIS G&M, Inc., 2004a). The petition was conditionally approved by the NYSDEC on June 23, 2004. Therefore, the groundwater sampling conducted for the Second Quarter 2004 round included sampling of the wells included in the "quarterly monitoring program" only, as specified in the June 2004 petition.

In compliance with the Public Water Supply Protection Section of the OU2 ROD, the Department of the Navy installed nine outpost wells. In compliance with the requirements set forth in the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M, Inc. 2003a), the groundwater quality data obtained from these

outpost wells is summarized, evaluated, and reported herein (and will be for future events).

Except as described on Tables 1 through 10 and in Sections 3, 4, and 5 of this report, the procedures, methodologies, and monitoring network utilized for the subject period are consistent with procedures and methodologies used previously (as described in ARCADIS G&M, Inc. 2003b) and the NYSDEC-approved OU2 Groundwater Monitoring Plan (ARCADIS Geraghty & Miller, Inc. 2001).

The locations of the NGC site, the OU2 groundwater remedy, the neighboring properties (i.e., the Naval Weapons Industrial Reserve Plant [NWIRP] and Occidental Chemical Corporation [OCC]/RUCO Polymer Corporation sites), and existing wells utilized in the monitoring programs are shown on Figure 1. This report also includes the following appendices: Appendix A (summary of Second Quarter 2004 NGC operational data); Appendix B (groundwater sampling logs); and Appendix C (chain-of-custody records).

3. Remedial System Operational Monitoring

This section summarizes the routine operational monitoring conducted during the Second Quarter of 2004 for the on-site portion of the OU2 groundwater remedy, which included the following: (1) treatment system effluent water quality monitoring, remedial well and Well GP-3 water quality monitoring, treatment systems efficiency monitoring and determination of volatile organic compound (VOC) mass removal from the aquifer, and (3) monitoring of remedial well and Well GP-3 pumpage and treatment systems treated effluent discharge to on-site recharge basins.

Also summarized in this report section are troubleshooting activities performed during the Second Quarter of 2004 by ARCADIS and NGC on Remedial Well ONCT-1.

3.1 Water Quality, Treatment Efficiencies, and Mass Removal

Table A-1 (Appendix A) summarizes operational water quality data for the remedial wells, Well GP-3, and treatment systems, and includes results of laboratory analysis for trichloroethene (TCE) and selectively for vinyl chloride for the Second Quarter 2004. Table 1 provides TCE and total VOC concentrations, total VOC mass removed by the remedial wells and Well GP-3, and treatment efficiencies for the GP-1 and ONCT air strippers.

Average total VOC concentrations from the remedial wells and Well GP-3 ranged from 46 micrograms per liter (µg/L) (ONCT-3) to 2,315 µg/L (GP-3); a total of approximately 2,382 pounds of VOCs were removed from the aquifer by the remedial wells and Well GP-3; and the efficiencies of the ONCT and GP-1 treatment systems have remained above 99.8 percent.

3.2 Remedial System Pumpage and Discharge

Table 1 summarizes the pumpage of the remedial wells (with a comparison to design criteria) and Well GP-3 for the Second Quarter of 2004. The remedial wells collectively pumped approximately 500 million gallons (MG) of groundwater, which is equivalent to approximately 99 percent of the design remedial well pumpage volume of 505 MG. Additionally, Well GP-3 pumped approximately 64.5 MG of contaminated groundwater. Based on weekly measurements collected by ARCADIS, the South Recharge Basins collectively received the treated effluent discharge from the ONCT treatment system (2,558 gallons per minute [gpm]), incidental stormwater runoff, along with approximately 600 gpm from the GP-1 remedial system. NGC directed approximately 400 gpm of treated effluent from the GP-1 remedial system to the adjacent Calpine facility for consumptive use (Wolfert, 2004). The West Recharge Basins received an average of approximately 530 gpm from the GP-1 remedial system (i.e., the balance of the treated effluent from the GP-1 remedial system).

3.3 Troubleshooting Activities

Between June 28, 2004 to July 16, 2004 (two days beyond the end of the Second Quarter 2004), Well ONCT-1 was shut down to determine the cause of an apparent decline in the well's pumping rate. The well was video logged to assess the condition of the well. The video log indicated that the well was in excellent condition and that redevelopment (or other well maintenance) was not needed. Upon inspection of the vertical turbine pump, however, it was determined that it needed to be replaced. The pumping rate of Well ONCT-2 was increased as a best effort to compensate for the shut down of Well ONCT-1. Well ONCT-2 is scheduled to pump at an average rate of approximately 1,100 gpm, or 83 percent over the design pumping rate of 600 gpm, until the new vertical turbine pump is installed. Additionally, NG installed a temporary submersible pump in Well ONCT-1 on July 16, 2004 and (at the start of the Third Quarter 2004); Well ONCT-1 currently pumps at an average rate of 570 gpm, while the new vertical turbine pump is on order. As a result of the shutdown/reduced pumping, Well ONCT-1 pumped approximately 16 percent less contaminated groundwater this quarter. In expectation of the overall reduced pumpage due to the

shutdown/temporary pumping, ARCADIS developed a plan for NGC to over-pump Well ONCT-1 (close to 1,400 gpm, or 40 percent over the design pumping rate of 1,000 gpm) after the replacement vertical turbine pump is installed. The goal of this over-pumping plan is to remove a volume of contaminated groundwater equivalent to the shortfall (i.e., difference between the design and actual pumpage) in pumpage that occurred in the Second Quarter 2004 that will be in addition to the design pumping rate in the Third Quarter 2004. At such time, Well ONCT-2 will be reduced in rate to accommodate the hydraulic limit of the ONCT remedial system air stripper. Since the replacement of the pump / over-pumping is scheduled to occur after the close of the Second Quarter 2004, the over-pumping activity will be further documented in a subsequent report(s). We expect that the shutdown / reduced pumping rate this round will have a minimal effect on the hydraulic containment and long-term trends in groundwater quality.

4. Groundwater Flow

Hydraulic monitoring was not performed for the Second Quarter 2004 due to the shutdown / reduced function of Well ONCT-1, as documented in Section 3.3 of this report. Refer to the First Quarter 2004 Groundwater Monitoring Report for the most recent analysis of hydraulic data. The next round of hydraulic monitoring is scheduled for the Third Quarter 2004.

5. Groundwater Quality

This report section describes the analytical results of the various groundwater quality monitoring activities for the Second Quarter 2004 that are specified in and required under the NYSDEC-approved Groundwater Monitoring Plan (ARCADIS G&M, Inc. 2001) and the PWSCP (ARCADIS G&M, Inc., 2003a). Analytical results are summarized in Tables 3 through 10.

Due to the timing of the intermittent shutdown of the remedial wells to accommodate repairs to Well ONCT-1, the remedial treatment systems and remedial well water quality samples were not collected by ARCADIS. NGC performed the routine weekly sampling of all remedial wells, Well GP-3, and the remedial treatment system influent and effluent for analysis by its internal laboratory. These data are provided in Appendix A of this report and are discussed, as appropriate, in this section.

5.1 Volatile Organic Compounds

As described in Section 2 of this report, ARCADIS implemented the reduced monitoring frequency for select wells this quarter. The evaluation of VOC concentrations presented herein is performed in consideration of the following factors: (1) proximity to the hydraulic barrier formed by the on-site portion of the OU2 groundwater remedy (i.e., along the NGC site southern boundary), (2) hydrogeologic zone (i.e., shallow, intermediate, deep, and D2 zones), and (3) NYSDEC Standards, Criteria, and Guidance (SCG) Values.

5.1.1 Shallow and Intermediate Zones

The Second Quarter 2004 groundwater quality analytical results for shallow and intermediate monitoring wells are provided in Tables 3 and 4, respectively. In general, water quality data from the shallow and intermediate wells sampled this quarter continue to support the interpretation of hydraulic data from previous quarters and confirm that the operation of the on-site portion of the OU2 groundwater remedy has formed an effective hydraulic barrier that prevents the off-site migration of VOC-impacted groundwater in the shallow and intermediate zones.

Five of the six shallow wells that are located at or immediately downgradient of the NGC site southern boundary (Tables 2 and 3) exhibited no or trace VOC detections and no exceedences of SCGs. A single well exhibited one SCG exceedence.

Five of the seven similarly located intermediate wells (Tables 2 and 4) exhibited no or trace VOC detections and no exceedences of SCGs. Two wells exhibited SCG exceedences.

5.1.2 Deep Zone

In general, water quality data from the deep wells sampled during the Second Quarter 2004 continue to support the interpretation of hydraulic data from previous quarters and confirm that the operation of the on-site portion of the OU2 groundwater remedy has formed an effective hydraulic barrier that prevents the off-site migration of VOC-impacted groundwater in the deep zone.

The four deep wells located at or immediately downgradient of NGC site southern boundary (Tables 2 and 5) exhibited trace VOC concentrations and no SCG exceedences.

Deep wells located further downgradient (Wells GM-34D and GM-79D) exhibited SCGs exceedences and total VOC concentrations of 515 ug/L and 70.3 ug/L (Table 5), respectively. These data are consistent with the expected concentrations in the off-site portion of the groundwater VOC plume in the deep zone.

5.1.3 Deep2 Zone

Groundwater monitoring data from the D2 zone are summarized in Table 6. In general, water quality data from the D2 wells sampled during the Second Quarter 2004 continue to support the interpretation of hydraulic data from previous quarters and confirm that the operation of the on-site portion of the OU2 groundwater remedy has formed an effective hydraulic barrier that prevents the off-site migration of VOC-impacted groundwater in the D2 zone.

Total VOC concentrations along the NGC site southern boundary and at and approximately 700 ft east of Well ONCT-1 (i.e., as indicated by Well GM-73D2) were higher than elsewhere along the NGC site southern boundary (Table 1). Monitoring Well GM-33D2 (at the NGC site southwestern boundary) and wells located east of Well GM-73D2 (Wells ONCT-2, GM-74D2, ONCT-3 and GM-15D2) exhibited one or more exceedences of SCGs (Tables 1 and 6), but total VOC concentrations in these areas were, by comparison to Wells ONCT-1 and GM-73D2, are substantially lower and ranged from 16 ug/L (Well GM-74D2) to 120 ug/L (Well ONCT-2). Based on previous rounds of hydraulic data, on-site wells along the NGC site southern boundary are within the capture zone of the remedial wells (screened in the D2 zone) and, therefore, groundwater in this area is hydraulically contained and, over time, will be extracted and treated by the on-site portion of the OU2 groundwater remedy.

Off-site D2 wells exhibited SCG exceedences with total VOC concentrations as follows: GM-34D2 (252 ug/L), GM-35D2 (361 ug/L), and GM-75D2 (753 ug/L), respectively. These data are consistent with the expected concentrations in the off-site portion of the groundwater plume in the D2 zone.

5.2 Outpost Monitoring

The complete description of the procedures to collect, evaluate, and document the results of groundwater samples collected from outpost wells is provided in the PWSCP (ARCADIS G&M, Inc. 2003a). The results of the Second Quarter 2004 sampling of the outpost wells are provided in Table 7. VOCs were not detected in Outpost Wells OW1-2, OW1-3, OW2-2, OW3-1, OW3-2, OW4-1, and OW4-2 this round. During the

Second Quarter 2004, site-related and, in some cases, other VOCs were detected in Outpost Wells OW1-1 (VOCs were first identified in this well in April 2004 and documented in a May 2004 letter report) and OW2-1. Based on VOC detections in Well OW2-1, ARCADIS re-sampled this well this quarter, per the PWSCP (Well OW2-2 was sampled three times this round, as a conservative measure, based on a single detection of a site-related VOC in the First Quarter 2004 sampling event). ARCADIS issued separate data reports documenting the results of the sampling of Wells OW1-1 and OW2-1 to the NYSDEC, NYSDOH, NGC, the Department of the Navy, and the potentially affected water district (South Farmingdale Water District) (ARCADIS G&M, Inc. 2004b; 2004c).

5.3 Vinyl Chloride Monomer

Vinyl chloride monomer (VCM) concentrations in groundwater samples collected during the Second Quarter 2004 are provided in Tables 3 through 6. VCM was not detected in the monitoring wells sampled this round. Wells GP-1 and GP-3 were sampled for VCM by NGC on a weekly basis (Appendix A, Table A-1). VCM was not detected in Well GP-1 and VCM concentrations ranged from 22.8 ug/L to 50 ug/L in Well GP-3. Additional groundwater monitoring of the extent of the VCM subplume and evaluation of remedial options for VCM in groundwater is being performed by Oxy.

5.4 Cadmium and Chromium

The results of the quarterly monitoring of wells analyzed for cadmium/chromium (Cd/Cr) are provided in Table 8. The data indicates that Cr exceeded the SCG in four of the ten wells, with no off-site SCG exceedences. Well MW-3R exhibited the only Cd SCG exceedence; it is an on-site well. Comparison of the total/dissolved results indicates that Cd/Cr are present in groundwater predominantly in the dissolved phase.

5.5 Tentatively Identified Compounds

The results of the laboratory qualitative assessment of Tentatively Identified Compound (TIC) concentrations in the samples collected during the Second Quarter 2004 are provided in Table 9. A review of these data reveal that the only named TIC detected in a monitoring well sample was 2,6-dimethylnaphthalene in Well GM-74D. Because TIC data is qualitative in nature, ARCADIS will monitor this TIC and if a trend develops to indicate that it is frequently present we will petition the NYSDEC to add it to the list of constituents monitored for.

5.6 QA/QC Samples and Data Validation

The results of analysis of field blanks and trip blanks are provided in Table 10.

ARCADIS performed validation of all groundwater quality data collected (including TICs) by following the contract laboratory program national functional guidelines for organic and inorganic data review (USEPA 1999). The quality of the data is considered acceptable with the qualifications indicated on Tables 3 through 10.

6. Summary and Conclusions

The findings of the OM&M activities performed during the Second Quarter 2004 are summarized below, along with our conclusions:

1. Pumpage data indicate that the OU2 remedial system pumped and treated approximately 99 percent of the design volume of groundwater. Due to problems with the pump, Well ONCT-1 was shut down and subsequently operated at a reduced rate at the start of the Third Quarter 2004. ARCADIS and NGC have developed a plan to replace the well pump and over-pump the well during the subsequent months to return the well to make up for the shortfall in pumped water.

2. Approximately 2,382 lbs of VOCs were removed from the aquifer and treated by the on-site portion of the OU2 groundwater remedy and Well GP-3.

3. The treatment efficiencies of both groundwater remedial systems remain above 99 percent.

4. The groundwater quality data indicate conditions that are consistent with previous rounds and that remedial goals continue to be met.

5. With the exception of the D2 zone, the majority of wells located along the NGC site perimeter show trace or non-detectable concentrations of VOCs.

6. Site-related VOCs were detected in Outpost Wells OW1-1 and OW2-1.

7. Cadmium/chromium SCG exceedences are limited to on-site areas.

7. Recommendation

ARCADIS makes no recommendation for modification to the groundwater monitoring program at this time.

8. References

ARCADIS G&M, Inc. 2004a. Petition for recommended Modifications to the Operable Unit 2 Groundwater Monitoring Plan, Northrop Grumman Corporation, Bethpage, New York. (NYSDEC Site #1-30-003A). July 3, 2004

ARCADIS G&M, Inc. 2004b. Interim Data Report for Outpost Well OW1-1, Northrop Grumman Corporation and Naval Weapons Industrial Reserve Plant, Bethpage, New York. (NYSDEC Site #1-30-003A & B). May 26, 2004.

ARCADIS G&M, Inc. 2004c. Data Report for Outpost Well OW2-1, Northrop Grumman Corporation and Naval Weapons Industrial Reserve Plant, Bethpage, New York. (NYSDEC Site #1-30-003A & B). September 10, 2004.

ARCADIS G&M, Inc. 2004d. First Quarter 2004 Groundwater Monitoring Report, Northrop Grumman Corporation and Naval Weapons Industrial Reserve Plant, Bethpage, New York. (NYSDEC Site #1-30-003A & B). November 30, 2004.

ARCADIS G&M, Inc. 2003a. Public Water Supply Contingency Plan, Naval Facilities Engineering Command. July 22, 2003.

ARCADIS G&M, Inc. 2003b. 2002 Annual Groundwater Monitoring Report, Northrop Grumman Corporation, Bethpage, New York. August 14, 2003.

ARCADIS Geraghty & Miller, Inc. 2001. Operable Unit 2 Groundwater Monitoring Plan. Northrop Grumman Corporation, Bethpage, New York. May 11, 2001.

ARCADIS Geraghty & Miller, Inc. 2000. Groundwater Feasibility Study, Grumman Aerospace Corporation-Bethpage, NY Site #130003A and the Naval Weapons Industrial Reserve Plant Site #130003B.

Wolfert, Michael. 2004. Notes by Michael F. Wolfert of ARCADIS, during meeting between ARCADIS, Northrop Grumman Corporation, Holzmacher, McLendon, and Merrill, Town of Oyster Bay, Nassau County Legislature E. Mangano, Long Island Power Authority, Hicksville Water District, Cashin Associates, Bethpage Fire District, and Calpine. July 28, 2004.

New York State Department of Environmental Conservation (NYSDEC). 2002. DER-10 Site Characterization Document. December 2002.

New York State Department of Environmental Conservation (NYSDEC). 2001. Record of Decisions Operable Unit 2 Groundwater Northrop Grumman and

Naval Weapons Industrial Reserve Plant Sites, Nassau County Site Numbers 1-30-003A & B

New York State Department of Environmental Conservation (NYSDEC). 1998. Division of Water Technical and Operation Guidance Series (TOGS 1.1.1). Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Promulgated October 22, 1993. Re-issued June 1998.

U.S. Environmental Protection Agency (USEPA). 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review. October 1999.

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Table 1. Summary of Operational Data for the OU2 Remedial Wells and Industrial Well GP-3, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

Well Identification	Design Pumping Rate [a] (gpm)	Current Actual Average Pumping Rate [b] (gpm)	Design Total Pumpage (MG)	Current Actual Total Pumpage [b] (MG)	Current Percent of Design Pumpage	Current Average TCE Concentration [c] (ug/L)	Current Average TVOC Concentration [c] (ug/L)	Current Estimated VOC Mass Removed [d] (lbs)
Remedial Wells								
GP-1	1,075	1,088	161.0	156.8	97%	301	391	511
ONCT-1	1,000	1,059	149.8	125.3	84%	437	455	475
ONCT-2	600	777	89.9	113.5	126%	108	120	113
ONCT-3	700	722	104.8	104.0	99%	30	46	40
Industrial Well								
GP-3	--	448	--	64.5	--	1,991	2,315	1,243
OU2 WELLS ROUNDED TOTALS: (e)	**3,375**	**3,646**	**505**	**500**	**99%**	**--**	**--**	**2,382**
GP-1 system average TCE removal efficiency [f]:				**>99.9%**				
ONCT system average TCE removal efficiency [f]:				**>99.8%**				

See Footnotes on next page.

Table 1. Summary of Operational Data for the OU2 Remedial Wells and Industrial Well GP-3, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

(a) - Based on computer modeling.

(b) - Actual Average Pumping Rates were calculated based on Actual Total Pumpage and hours of operation from March 31, 2004 to July 12, 2004 (104 Days).

- OU2 wells were operational during the Second Quarter 2004, at the following percentages, GP-1 (96%), ONCT-1 (79%), ONCT-2 (98%), and ONCT-3 (96%). Industrial Well GP-3 was 96 percent operational during this time.
Therefore, the Actual Average Pumping Rates estimated above are for when the wells are pumping.

(c) - TVOC concentration in each well was calculated based on Second Quarter 2004 average TCE concentration per well (Appendix A, Table A-1) and First Quarter 2004 remedial well monitoring (ARCADIS G&M, 2004d) which indicated that TCE concentrations were a percentage of the TVOC concentrations, as follows: GP-1 (77%), ONCT-1 (96%), ONCT-2 (90%), ONCT-3 (65%), and GP-3 (86%).

(d) - TVOC mass removed during the Second Quarter 2004 was based on the TVOC data given above and the following formula:

(TVOC concentration in ug/L) X (gallons pumped) X (3.785 L/gal) X (1×10^{-6} g/ug) X (2.2×10^{-3} lb/g)

(e) Current, total, and cumulative TVOC mass removed includes the OU2 wells and Well GP-3.

(f) Air Stripping Efficiency calculated from values above and from Northrop Grumman Second Quarter 2004 average TCE in GP-1 System Air Stripper Effluent water and ONCT System Air Stripper Effluent water using the following formula:

100% - (Effluent Concentration in ug/L/ Influent Concentration in ug/L)

Treatment system influent TVOC concentration calculated from the following formula:

$$1 - \left[\frac{\text{System Effluent TVOC}}{\frac{[\text{TVOC}_{\text{Well 1}} \times Q_{\text{Well 1}} + (\text{TVOC}_{\text{Well 2}} \times Q_{\text{Well 2}})]}{(Q_{\text{Well 1}} + Q_{\text{Well 2}})}} \right]$$

When non-detectable levels of VOCs are found in the influent, a value of zero is used to conservatively estimate the efficiency of the air stripper.

--	Not Available or Not Applicable	lb/g	pounds per gram
TVOC	Total Volatile Organic Compounds	lbs	pounds
g/ug	grams per microgram	MG	Million Gallons
gpm	gallons per minute	ug/L	micrograms per liter
L/gal	Liters per gallon	OU2	Operable Unit 2
		Q	Pumping Rate

Table 2. Summary of Total Volatile Organic Compound and Cadmium/Chromium Concentrations and Comparison to SCGs for Select Site Boundary Monitoring Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York. [1] [2]

Shallow Zone

Well Identification:	N-10631	GM-17SR	GM-18S	GM-21S	GM-78S	MW-3R
Second Quarter TVOC Concentration (ug/L):	ND	ND	19	ND	ND	4
No. of Second Quarter VOC SCG Exceedences:	0	0	1	0	0	0
Second Quarter Total Cd Concentration (ug/L):	3.6	<10	<10	NS	<10	37.1
No. of Second Quarter Total Cd SCG Exceedences:	0	0	0	--	0	1
Second Quarter Total Cr Concentration (ug/L):	25.8	3.3	4.8	NS	<10	59.3
No. of Second Quarter Total Cr SCG Exceedences:	0	0	0	--	0	1

Intermediate Zone

Well Identification:	GM-17I	GM-18I	GM-20I	GM-2II	GM-74I	GM-78I	GM-79I
Second Quarter TVOC Concentration (ug/L):	ND	6	ND	ND	ND	ND	2.0
No. Second Quarter VOC SCG Exceedences:	0	1	0	0	0	0	0
Second Quarter Total Cd Concentration (ug/L):	NS	NS	NS	NS	NS	ND	NS
No. of Second Quarter Total Cd SCG Exceedences:	--	--	--	--	--	0	--
Second Quarter Total Cr Concentration (ug/L):	NS	NS	NS	NS	NS	2.3	NS
No. of Second Quarter Total Cr SCG Exceedences:	--	--	--	--	--	0	--

Deep Zone

Well Identification:	GM-17D	GM-18D	GM-20D	GM-21D
Second Quarter TVOC Concentration (ug/L):	ND	0.8	ND	1
No. Second Quarter VOC SCG Exceedences:	0	0	0	0

(1) Wells are shown on Figure 1. VOC analytical results from shallow, intermediate, deep, and deep2 wells are provided in Tables 3 through 6, respectively. Cr and Cd results for shallow and intermediate wells are provided in Table 8.

(2) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

VOC Volatile Organic Compound
NS Not Sampled
ND Not Detected
-- Not Applicable
Cd Cadmium
Cr Chromium
TVOC Total Volatile Organic Compound

Table 3. Concentrations of Volatile Organic Compounds Detected in Shallow Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL:	10631	GM-15S	GM-17SR	GM-18S	GM-21S
		SAMPLE ID:	N-10631	GM-15S	GM-17SR	GM 18S	GM21S
		DATE:	07/16/2004	07/01/2004	07/02/2004	07/16/2004	07/13/2004
Chloromethane	5		<5	<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5	<5
Vinyl Chloride	2		<2	<2	<2	<2	<2
Chloroethane	5		<5	<5	<5	<5	<5
Methylene chloride	5		<5	<5	<5	<5	<5
Acetone	50		<10	<10	<10	<10	<10
Carbon disulfide	50		<5	<5	<5	<5	<5
1,1-Dichloroethene	5		<5	<5	<5	<5	<5
1,1-Dichloroethane	5		<5	<5	<5	**2 J**	<5
cis-1,2-Dichloroethene	5		<5	<5	<5	**5 J**	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	<5	<5	**1 J**	<5
1,2-Dichloroethane	5		<5	<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5		<5	<5	<5	**1 J**	<5
Carbon tetrachloride	5		<5	<5	<5	<5	<5
Bromodichloromethane	50		<5	<5	<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Trichloroethene	5		<5	**2 J**	<5	10	<5
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Bromoform	50		<5	<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10	<10
Tetrachloroethene	5		<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5	<5
Toluene	5		<5	<5	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	<5	<5
Ethylbenzene	5		<5	<5	<5	<5	<5
Styrene	5		<5	<5	<5	<5	<5
Xylene (total)	5		<5	<5	<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5	<5	<5
Freon-113 *	5		<5	<5	<5	<5	<5
Total VOCs			0	**2**	0	**19**	0

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

VOCs Volatile organic compounds

ug/L Micrograms per liter

J Estimated value

NYSDEC New York State Department of Environmental Conservation

* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.

[ ] Value exceeds associated SCG value.

NE No SCG established

Bold value indicates a detection.

Table 3. Concentrations of Volatile Organic Compounds Detected in Shallow Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: GM-78S SAMPLE ID: GM-78S DATE: 07/02/2004	MW-03R MW 3R 07/16/2004
Chloromethane	5	<5	<5
Bromomethane	5	<5	<5
Vinyl Chloride	2	<2	<2
Chloroethane	5	<5	<5
Methylene chloride	5	<5	<5
Acetone	50	<10	<10
Carbon disulfide	50	<5	<5
1,1-Dichloroethene	5	<5	<5
1,1-Dichloroethane	5	<5	<5
cis-1,2-Dichloroethene	5	<5	<5
trans-1,2-Dichloroethene	5	<5	<5
Chloroform	7	<5	<5
1,2-Dichloroethane	5	<5	<5
2-Butanone	50	<10	<10
1,1,1-Trichloroethane	5	<5	<5
Carbon tetrachloride	5	<5	<5
Bromodichloromethane	50	<5	<5
1,2-Dichloropropane	5	<5	<5
cis-1,3-Dichloropropene	5	<5	<5
Trichloroethene	5	<5	**4 J**
Dibromochloromethane	5	<5	<5
1,1,2-Trichloroethane	5	<5	<5
Benzene	0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5	<5	<5
Bromoform	50	<5	<5
4-Methyl-2-pentanone	50	<10	<10
2-Hexanone	50	<10	<10
Tetrachloroethene	5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5
Toluene	5	<5	<5
Chlorobenzene	5	<5	<5
Ethylbenzene	5	<5	<5
Styrene	5	<5	<5
Xylene (total)	5	<5	<5
Vinyl Acetate	NE	<5	<5
Freon-113 *	5	<5	<5
Total VOCs		0	**4**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.
VOCs Volatile organic compounds
ug/L Micrograms per liter
J Estimated value
NYSDEC New York State Department of Environmental Conservation
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
[ ] Value exceeds associated SCG value.
NE No SCG established
Bold value indicates a detection.

Table 4. Concentrations of Volatile Organic Compounds Detected in Intermediate Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL:	GM-15I	GM-17I	GM-18I	GM-20I	GM-21I
		SAMPLE ID:	GM15I	GM17I	GM 18I	GM20I	GM21I
		DATE:	07/13/2004	07/09/2004	07/27/2004	07/14/2004	07/13/2004
Chloromethane	5		<5	<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5	<5
Vinyl Chloride	2		<2	<2	<2	<2	<2
Chloroethane	5		<5	<5	<5	<5	<5
Methylene chloride	5		<5	<5	<5	<5	<5
Acetone	50		<10	<10	<10	<10	<10
Carbon disulfide	50		<5	<5	<5	<5	<5
1,1-Dichloroethene	5		<5	<5	<5	<5	<5
1,1-Dichloroethane	5		<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	<5	<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5		<5	<5	<5	<5	<5
Carbon tetrachloride	5		<5	<5	<5	<5	<5
Bromodichloromethane	50		<5	<5	<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Trichloroethene	5		**7**	<5	**6 J**	<5	<5
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Bromoform	50		<5	<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10	<10
Tetrachloroethene	5		<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5	<5
Toluene	5		<5	<5	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	<5	<5
Ethylbenzene	5		<5	<5	<5	<5	<5
Styrene	5		<5	<5	<5	<5	<5
Xylene (total)	5		<5	<5	<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5	<5	<5
Freon-113 *	5		<5	<5	<5	<5	<5
Total VOCs			**7**	0	**6**	0	0

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

NYSDEC New York State Department of Environmental Conservation

VOCs Volatile organic compounds

ug/L Micrograms per liter

J Estimated value

* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.

[ ] Value exceeds associated SCG value.

NE No SCG established

Bold value indicates a detection.

Table 4. Concentrations of Volatile Organic Compounds Detected in Intermediate Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL:	GM-74I	GM-78I	GM-79I
		SAMPLE ID:	GM-74I	GM-78I	GM79I
		DATE:	07/06/2004	07/02/2004	07/08/2004
Chloromethane	5		<5	<5	<5
Bromomethane	5		<5	<5	<5
Vinyl Chloride	2		<2	<2	<2
Chloroethane	5		<5	<5	<5
Methylene chloride	5		<5	<5	<5
Acetone	50		<10	<10	<10
Carbon disulfide	50		<5	<5	<5
1,1-Dichloroethene	5		<5	<5	<5
1,1-Dichloroethane	5		<5	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5
Chloroform	7		<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5
2-Butanone	50		<10	<10	<10
1,1,1-Trichloroethane	5		<5	<5	<5
Carbon tetrachloride	5		<5	<5	<5
Bromodichloromethane	50		<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5
Trichloroethene	5		<5	<5	**2 J**
Dibromochloromethane	5		<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5
Bromoform	50		<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10
2-Hexanone	50		<10	<10	<10
Tetrachloroethene	5		<5	<5	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5
Toluene	5		<5	<5	<5
Chlorobenzene	5		<5	<5	<5
Ethylbenzene	5		<5	<5	<5
Styrene	5		<5	<5	<5
Xylene (total)	5		<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5
Freon-113 *	5		<5	<5	<5
Total VOCs			0	0	**2**

(1) Standards, Criteria, and Guidance values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

NYSDEC New York State Department of Environmental Conservation

VOCs Volatile organic compounds

ug/L Micrograms per liter

J Estimated value

* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.

[ ] Value exceeds associated SCG value.

NE No SCG established

Bold value indicates a detection.

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Table 5. Concentrations of Volatile Organic Compounds Detected in Deep Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: SAMPLE ID: DATE:	GM-15D GM15D 07/13/2004	GM-17D GM17D 07/09/2004	GM-18D GM18D 07/09/2004	GM-20D GM20D 07/14/2004	GM-21D GM21D 07/08/2004
Chloromethane	5		<5	<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5	<5
Vinyl Chloride	2		<2	<2	<2	<2	<2
Chloroethane	5		<5	<5	<5	<5	<5
Methylene chloride	5		<5	<5	<5	<5	<5
Acetone	50		<10	<10	<10	<10	<10
Carbon disulfide	50		<5	<5	<5	<5	<5
1,1-Dichloroethene	5		**3 J**	<5	<5	<5	<5
1,1-Dichloroethane	5		**6**	<5	<5	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	<5	<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5		**1 J**	<5	<5	<5	<5
Carbon tetrachloride	5		<5	<5	<5	<5	<5
Bromodichloromethane	50		<5	<5	<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Trichloroethene	5		**6**	<5	**0.8 J**	<5	**1 J**
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Bromoform	50		<5	<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10	<10
Tetrachloroethene	5		**7**	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5	<5
Toluene	5		<5	<5	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	<5	<5
Ethylbenzene	5		<5	<5	<5	<5	<5
Styrene	5		<5	<5	<5	<5	<5
Xylene (total)	5		<5	<5	<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5	<5	<5
Freon-113 *	5		<5	<5	<5	<5	<5
Total VOCs			**23**	0	**0.8**	0	1

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

NYSDEC New York State Department of Environmental Conservation

VOCs Volatile organic compounds

ug/L Micrograms per liter

J Estimated value

D Constituent identified at a secondary dilution.

* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.

[ ] Value exceeds associated SCG value.

NE No SCG established

Bold value indicates a detection.

Table 5. Concentrations of Volatile Organic Compounds Detected in Deep Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL:	GM-34D	GM-39D$_A$	GM-39D$_B$	GM-73D	GM-74D
		SAMPLE ID:	GM34D	GM-39D$_A$	GM-39D$_B$	GM-73D	GM-74D
		DATE:	07/14/2004	07/07/2004	07/07/2004	07/07/2004	07/06/2004
Chloromethane	5		<5	<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5	<5
Vinyl Chloride	2		<2	<2	<2	<2	<2
Chloroethane	5		<5	<5	<5	<5	<5
Methylene chloride	5		<5	<5	<5	<5	<5
Acetone	50		<10	<10	<10	<10	<10
Carbon disulfide	50		<5	<5	<5	<5	<5
1,1-Dichloroethene	5		**5**	<5	<5	<5	<5
1,1-Dichloroethane	5		**2 J**	<5	<5	<5	<5
cis-1,2-Dichloroethene	5		**8**	<5	<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	<5	<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5		<5	<5	<5	<5	<5
Carbon tetrachloride	5		<5	<5	<5	<5	<5
Bromodichloromethane	50		<5	<5	<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Trichloroethene	5		**450 D**	**25**	**49**	**110**	**4 J**
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Bromoform	50		<5	<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10	<10
Tetrachloroethene	5		**8**	<5	<5	**1 J**	**1 J**
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5	<5
Toluene	5		<5	<5	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	<5	<5
Ethylbenzene	5		<5	<5	<5	<5	<5
Styrene	5		<5	<5	<5	<5	<5
Xylene (total)	5		<5	<5	<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5	<5	<5
Freon-113 *	5		**42**	<5	<5	<5	<5
Total VOCs			**515**	**25**	**49**	**111**	**5**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.
NYSDEC New York State Department of Environmental Conservation.
VOCs Volatile organic compounds.
ug/L Micrograms per liter.
J Estimated value.
D Constituent identified at a secondary dilution.
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
[ ] Value exceeds associated SCG value.
NE No SCG established
Bold value indicates a detection.

Table 5. Concentrations of Volatile Organic Compounds Detected in Deep Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: SAMPLE ID: DATE:	GM-79D GM79D 07/08/2004
Chloromethane	5		<5
Bromomethane	5		<5
Vinyl Chloride	2		<2
Chloroethane	5		<5
Methylene chloride	5		<5
Acetone	50		<10
Carbon disulfide	50		<5
1,1-Dichloroethene	5		**0.6 J**
1,1-Dichloroethane	5		<5
cis-1,2-Dichloroethene	5		**0.7 J**
trans-1,2-Dichloroethene	5		<5
Chloroform	7		<5
1,2-Dichloroethane	5		<5
2-Butanone	50		<10
1,1,1-Trichloroethane	5		<5
Carbon tetrachloride	5		<5
Bromodichloromethane	50		<5
1,2-Dichloropropane	5		<5
cis-1,3-Dichloropropene	5		<5
Trichloroethene	5		**65**
Dibromochloromethane	5		<5
1,1,2-Trichloroethane	5		<5
Benzene	0.7		<0.7
trans-1,3-Dichloropropene	5		<5
Bromoform	50		<5
4-Methyl-2-pentanone	50		<10
2-Hexanone	50		<10
Tetrachloroethene	5		**2 J**
1,1,2,2-Tetrachloroethane	5		<5
Toluene	5		<5
Chlorobenzene	5		<5
Ethylbenzene	5		<5
Styrene	5		<5
Xylene (total)	5		<5
Vinyl Acetate	NE		<5
Freon-113 *	5		**2 J**
Total VOCs			**70.3**

(1)	Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.
NYSDEC	New York State Department of Environmental Conservation.
VOCs	Volatile organic compounds.
ug/L	Micrograms per liter.
J	Estimated value.
D	Constituent identified at a secondary dilution.
*	Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
[ ]	Value exceeds associated SCG value.
NE	No SCG established

Bold value indicates a detection.

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Table 6. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT: (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-15D2 GM15D-2 07/13/2004	GM-33D2 GM 33D-2 07/16/2004	GM-34D2 GM34D-2 07/14/2004	GM-35D2 GM 35D2 07/23/2004
Chloromethane	5		<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5
Vinyl Chloride	2		<2	<2	<2	<2
Chloroethane	5		<5	<5	<5	<5
Methylene chloride	5		<5	<5	<5	<5
Acetone	50		<10	<10	<10	<10
Carbon disulfide	50		<5	<5	<5	<5
1,1-Dichloroethene	5		**1 J**	<5	**6**	**1 J**
1,1-Dichloroethane	5		<5	<5	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	**6**	**3 J**
trans-1,2-Dichloroethene	5		<5	<5	<5	<5
Chloroform	7		<5	<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10
1,1,1-Trichloroethane	5		<5	<5	<5	<5
Carbon tetrachloride	5		<5	<5	<5	<5
Bromodichloromethane	50		<5	<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5	<5
Trichloroethene	5		**12**	**50**	**210 D**	**340 D**
Dibromochloromethane	5		<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5	<5
Bromoform	50		<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10
Tetrachloroethene	5		**20**	**7**	**13**	**7**
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5
Toluene	5		<5	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	<5
Ethylbenzene	5		<5	<5	<5	<5
Styrene	5		<5	<5	<5	<5
Xylene (total)	5		<5	<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5	<5
Freon-113 *	5		**2 J**	**2 J**	**17**	**10**
Total VOCs			**35**	**59**	**252**	**361**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

NYSDEC New York State Department of Environmental Conservation
VOCs Volatile organic compounds
ug/L Micrograms per liter
J Estimated value
D Constituent identified at a secondary dilution.
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
REP Replicate sample
[ ] Value exceeds associated SCG value.
NE No SCG established
Bold value indicates a detection.

Table 6. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT: (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: SAMPLE ID: DATE:	GM-73D2 GM-73D2 07/07/2004	GM-73D2 REP070704 07/07/2004	GM-74D2 GM-74D2 07/06/2004	GM-75D2 GM 75D-2 07/16/2004
Chloromethane	5		<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5
Vinyl Chloride	2		<2	<2	<2	<2
Chloroethane	5		<5	<5	<5	<5
Methylene chloride	5		<5	<5	<5	<5
Acetone	50		<10	<10	<10	<10
Carbon disulfide	50		<5	<5	<5	<5
1,1-Dichloroethene	5		**1 J**	**0.9 J**	<5	<5
1,1-Dichloroethane	5		**2 J**	**1 J**	<5	**2 J**
cis-1,2-Dichloroethene	5		**1 J**	**1 J**	<5	**2 J**
trans-1,2-Dichloroethene	5		<5	<5	<5	<5
Chloroform	7		<5	<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10
1,1,1-Trichloroethane	5		**0.8 J**	<5	<5	**5 J**
Carbon tetrachloride	5		<5	<5	<5	<5
Bromodichloromethane	50		<5	<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5	<5
Trichloroethene	5		**610 D J**	**380 D J**	**9**	**730 D**
Dibromochloromethane	5		<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5	<5
Benzene	0.7		**2 J**	<0.7 J	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5	<5
Bromoform	50		<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10
Tetrachloroethene	5		**2 J**	**2 J**	**7**	**8**
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5
Toluene	5		**0.9 J B**	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	<5
Ethylbenzene	5		<5	<5	<5	<5
Styrene	5		<5	<5	<5	<5
Xylene (total)	5		<5	<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5	<5
Freon-113 *	5		**0.8 J**	**0.5 J**	<5	**6**
Total VOCs			**620.5**	**385.4**	**16**	**753**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

NYSDEC New York State Department of Environmental Conservation

VOCs Volatile organic compounds

ug/L Micrograms per liter

J Estimated value

D Constituent identified at a secondary dilution.

* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.

REP Replicate sample

Value exceeds associated SCG value.

NE No SCG established

Bold value indicates a detection.

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Table 7. Concentrations of Site-Related Volatile Organic Compounds Detected in Outpost Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York. (1)

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[2]	WELL: / SAMPLE ID: / DATE:	OW 1-1 OW-1-1 6/29/2004	REP OW 1-1 REP062904 6/29/2004	OW 1-2 OW-1-2 6/29/2004	OW 1-3 OW-1-3 6/29/2004	OW 2-1[3] OW-2-1 6/29/2004	OW 2-1[3][4] OW-2-1 8/4/2004	OW 2-1[3][4] OW-2-1 8/12/2004	OW 2-2 OW-2-2 5/27/2004	OW 2-2 OW-2-2 6/4/2004
Chlorobenzene	5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	5		**7.1**	**7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	5		**3.4**	**3.3**	<0.5	<0.5	**1**	**1.5**	**1.1**	<0.5	<0.5
trans-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	<0.5
Chloroform	7		**0.6**	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5		<0.5	<0.5	<0.5	<0.5	**1.1**	**1.7**	**1.1**	<0.5	<0.5
1,1,1-Trichloroethane	5		**12**	**12**	<0.5	<0.5	**0.6**	**0.7**	<0.5	<0.5	<0.5
Carbon tetrachloride	5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5		**3.4**	**3.4**	<0.5	<0.5	**1.1**	**1.8**	**1.4**	<0.5	<0.5
1,1,2-Trichloroethane	5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5	**0.5**	<0.5	<0.5	<0.5
Freon-113 *	5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Site-Related VOCs:			**26.5**	**26.3**	0	0	**3.8**	**6.8**	**3.6**	0	0

Footnotes:

(1) Site-related VOCs were established in the Public Water Supply Contingency Plan (ARCADIS G&M, Inc. 2003).

(2) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the OU2 Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000); most stringent value listed.

(3) Benzene was detected in Outpost Well OW 2-1 on the following dates: 6/29/04, 8/4/04 and 8/12/04 at concentrations of 26ug/l, 42 ug/L, and 36ug/L, respectively.

(4) Results from OW-2-1, provided for completeness, were actually collected during the 3rd Quarter 2004.

General Notes:

- Samples analyzed and reported as a NYSDEC Category A deliverable per the NYS DER-10 Guidance Document (NYSDEC 2002).
- Samples analyzed by EPA Method 502.2, as specified in the OU2 Record of Decision.
- Results were validated by ARCADIS by following the contract laboratory program national functional guidelines for organic data review (USEPA 1999).

Definitions:

OU2	Operable Unit 2
VOCs	Volatile organic compounds
ug/L	Micrograms per liter
NYSDEC	New York State Department of Environmental Conservation
*	Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
	Value exceeds associated SCG value.
REP	Field Replicate

Bold value indicates a detection.

Table 7. Concentrations of Site-Related Volatile Organic Compounds Detected in Outpost Wells, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York. (1)

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[2]	WELL: SAMPLE ID: DATE:	OW 2-2 OW-2-2 6/30/2004	OW 3-1 OW-3-1 6/28/2004	OW 3-2 OW-3-2 6/28/2004	OW 4-1 OW-4-1 6/30/2004	OW 4-2 OW-4-2 6/30/2004
Chlorobenzene	5		<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	5		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	7		<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5		<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	5		<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	5		<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	5		<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5		<0.5	<0.5	<0.5	<0.5	<0.5
Freon-113 *	5		<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	5		<0.5	<0.5	<0.5	<0.5	<0.5
Total Site-Related VOCs:			0	0	0	0	0

Footnotes:

(1) Site-related VOCs and trigger values were established in the Public Water Supply Contingency Plan (ARCADIS G&M, Inc. 2003).

(2) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the OU2 Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000); most stringent value listed.

(3) Benzene was detected in Outpost Well OW 2-1 on the following dates: 6/29/04, 8/4/04 and 8/12/04 at concentrations of 26ug/l, 42 ug/L, and 36ug/L, respectively.

(4) Results from OW-2-1, provided for completeness, were actually collected during the 3rd Quarter 2004.

General Notes:

- Samples analyzed and reported as a NYSDEC Category A deliverable per the NYS DER-10 Guidance Document (NYSDEC 2002).
- Samples analyzed by EPA Method 502.2, as specified in the OU2 Record of Decision.
- Results were validated by ARCADIS by following the contract laboratory program national functional guidelines for organic data review (USEPA 1999).

Definitions:

OU2	Operable Unit 2
VOCs	Volatile organic compounds
ug/L	Micrograms per liter
NYSDEC	New York State Department of Environmental Conservation
*	Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
	Value exceeds associated SCG value.
REP	Field Replicate

Bold value indicates a detection.

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Table 8. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Groundwater and Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (ug/L)	NYSDEC SCGs[1]	WELL: / SAMPLE ID: / DATE:	10631 N-10631 07/16/2004	GM-15S GM-15S 07/01/2004	GM-17SR GM-17SR 07/02/2004	GM-18S GM 18S 07/16/2004	GM-78S GM-78S 07/02/2004	GM-78I GM-78I 07/02/2004	MW-03R MW 3R 07/16/2004	MW-04 PT1MW-04 07/01/2004	MW-05 PT/MW-05 07/14/2004
Cadmium	5		**3.6 B**	–	<10	<10	<10	<10	**37.1**	–	–
Cadmium (Dissolved)	5		**3.1 B**	–	<10	<10	–	–	**39**	–	–
Chromium	50		**25.8**	**273**	**3.3 B**	**4.8 B**	<10	**2.3 B**	**59.3**	**2.5 B**	**758**
Chromium (Dissolved)	50		**20.5**	–	**1.4 B**	**4.1 B**	–	–	**65.2**	–	–

(1) Standards, Criteria, and Guidance (SCGs) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.

NYSDEC New York State Department of Environmental Conservation

ug/L Micrograms per liter

B Detected between the IDL and CRDL

IDL Instrument detection limit

CRDL Contract-required detection limit

EQ Equipment

Value exceeds associated SCG value.

Bold Constituent detected above IDL.

– Not analyzed

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Table 8. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Groundwater and Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (ug/l)	NYSDEC SCGs[1]	WELL: / SAMPLE ID: / DATE:	MW-06 PT1MW-06 07/01/2004	WATER EQ. BLANK FB070104 07/01/2004	WATER EQ. BLANK FB070204 07/02/2004	WATER EQ. BLANK FB071604 07/16/2004
Cadmium	5		--	--	<10	<10
Cadmium (Dissolved)	5		--	--	--	--
Chromium	50		**270**	<10	<10	<10
Chromium (Dissolved)	50		--	--	--	--

(1)	Standards, Criteria, and Guidance (SCGs) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000); most stringent value listed.
NYSDEC	New York State Department of Environmental Conservation
ug/L	Micrograms per liter
B	Detected between the IDL and CRDL
IDL	Instrument detection limit
CRDL	Contract-required detection limit
EQ	Equipment
	Value exceeds associated SCG value.
Bold	Constituent detected above IDL.
--	Not analyzed

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Table 9. Concentrations of Tentatively Identified Compounds (TICs) Detected in Groundwater Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

WELL/BLANK SAMPLE IDENTIFICATION	SAMPLE ID	DATE	Tentatively Identified Compounds (Units in ug/L)					
			Unknown Alkane	Freon 113	Dibenzofuran	Unknown	Napthalene	2-Ethylnapthalene
GM-35D2	GM-35D2	07/23/04	--	6 NJ	--	--	--	--
GM-35D2	GM-35D2DL	07/23/04	--	16 NJD	--	--	--	--
GM-74I	GM-74I	07/06/04	--	--	--	8 J	--	--
GM-74D	GM-74D	07/06/04	8 J	--	--	--	--	--
GM-74D2	GM-74D2	07/06/04	--	--	--	5 J	--	--
Trip Blank	TB070604	07/06/04	7 J, 10 J	--	11 NJ	26 J, 7 J	12 NJ	--
Trip Blank	TB070704	07/07/04	--	--	19 NJ	12 J, 5 J, 10 J, 82 J, 23 J, 27 J	14 NJ	8 NJ

TICs are identified based on review of mass spectrometry results via a comprehensive library search of all organic compounds.

ug/L Micrograms per liter

-- Not Detected

N Presumtive evidence of this constituent. Calibrations were not run for this constituent; therefore, the results should be used for qualitative purposes only.

J Estimated value

D Constituent identified at a secondary dilution.

Table 9. **Concentrations of Tentatively Identified** Compounds (TICs) **Detected** in Groundwater Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

WELL/BLANK SAMPLE IDENTIFICATION	SAMPLE ID	DATE	Tentatively Identified Compounds (Units in ug/L) 2,3-Dimethylnapthalene	Fluorene	2-Methylnapthalene	1-Methylnapthalene
GM-35D2	GM-35D2	07/23/04	--	--	--	--
GM-35D2	GM-35D2DL	07/23/04	--	--	--	--
GM-74I	GM-74I	07/06/04	--	--	--	--
GM-74D	GM-74D	07/06/04	--	--	--	--
GM-74D2	GM-74D2	07/06/04	--	--	--	--
Trip Blank	TB070604	07/06/04	--	9 NJ	9 NJ	8 NJ
Trip Blank	TB070704	07/07/04	7 NJ	--	--	

TICs are identified based on review of mass spectrometry results via a comprehensive library search of all organic compounds.

ug/L Micrograms per liter

-- Not Detected

N Presumtive evidence of this constituent. Calibrations were not run for this constituent; therefore, the results should be used for qualitative purposes only.

J Estimated value

D Constituent identified at a secondary dilution.

Table 9. Concentrations of Tentatively Identified Compounds (TICs) Detected in Groundwater Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

WELL/BLANK SAMPLE IDENTIFICATION	SAMPLE ID	DATE	Tentatively Identified Compounds (Units in ug/L) 1-Ethylnapthalene	1,6-Dimethylnapthalene	2,6-Dimethylnapthalene
GM-35D2	GM-35D2	07/23/04	--	--	--
GM-35D2	GM-35D2DL	07/23/04	--	--	--
GM-74I	GM-74I	07/06/04	--	--	--
GM-74D	GM-74D	07/06/04	--	--	5 NJ
GM-74D2	GM-74D2	07/06/04	--	--	--
Trip Blank	TB070604	07/06/04	17 NJ	13 NJ	--
Trip Blank	TB070704	07/07/04	--	--	--

TICs are identified based on review of mass spectrometry results via a comprehensive library search of all organic compounds.

ug/L Micrograms per liter
-- Not Detected
N Presumtive evidence of this constituent. Calibrations were not run for this constituent; therefore, the results should be used for qualitative purposes only.
J Estimated value
D Constituent identified at a secondary dilution.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB051404 5/14/2004	TRIP BLANK TB052704 5/27/2004	TRIP BLANK TB060404 6/4/2004	TRIP BLANK TB062804 6/28/2004	TRIP BLANK TB062804 06/28/2004
Chloromethane		<5	<0.5	<0.5	<0.5	<0.5
Bromomethane		<5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride		<2	<0.5	<0.5	<0.5	<0.5
Chloroethane		<5	<0.5	<0.5	<0.5	<0.5
Methylene chloride		**2 B**	<0.5	**1.5**	<0.5	<0.5
Acetone		<10	--	--	--	--
Carbon disulfide		<5	--	--	--	--
1,1-Dichloroethene		<5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		<5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene		<5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene		<5	<0.5	<0.5	<0.5	<0.5
Chloroform		<5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane		<5	<0.5	<0.5	<0.5	<0.5
2-Butanone		<10	--	--	--	--
1,1,1-Trichloroethane		<5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride		<5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane		<5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane		<5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene		<5	<0.5	<0.5	<0.5	<0.5
Trichloroethene		<5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane		<5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane		<5	<0.5	<0.5	<0.5	<0.5
Benzene		<0.7	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene		<5	<0.5	<0.5	<0.5	<0.5
Bromoform		<5	<0.5	<0.5	<0.5	<0.5
4-Methyl-2-pentanone		<10	--	--	--	--
2-Hexanone		<10	--	--	--	--
Tetrachloroethene		**0.8 J**	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane		<5	<0.5	<0.5	<0.5	<0.5
Toluene		<5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene		<5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene		<5	--	--	--	--
Styrene		<5	--	--	--	--
Xylene (total)		<5	<0.5	<0.5	<0.5	<0.5
Vinyl Acetate		<5	<0.5	<0.5	<0.5	<0.5
Freon-113 *		<5	<0.5	<0.5	<0.5	<0.5
Total VOCs		**2.8**	0	**1.5**	0	0

VOCs Volatile organic compounds
ug/L Micrograms per liter
J Estimated value
B Detected in an associated method blank.
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
Bold value indicates a detection.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB062904 6/29/2004	TRIP BLANK TB062904 06/29/2004	TRIP BLANK TB063004 6/30/2004	TRIP BLANK TB063004 06/30/2004	TRIP BLANK TB070104 07/01/2004
Chloromethane		<0.5	<0.5	<0.5	<0.5	<5
Bromomethane		<0.5	<0.5	<0.5	<0.5	<5
Vinyl Chloride		<0.5	<0.5	<0.5	<0.5	<2
Chloroethane		<0.5	<0.5	<0.5	<0.5	<5
Methylene chloride		<0.5	<0.5	<0.5	<0.5	**0.6 J B**
Acetone		--	--	--	--	<10
Carbon disulfide		--	--	--	--	<5
1,1-Dichloroethene		<0.5	<0.5	<0.5	<0.5	<5
1,1-Dichloroethane		<0.5	<0.5	<0.5	<0.5	<5
cis-1,2-Dichloroethene		<0.5	<0.5	<0.5	<0.5	<5
trans-1,2-Dichloroethene		<0.5	<0.5	<0.5	<0.5	<5
Chloroform		<0.5	<0.5	<0.5	<0.5	<5
1,2-Dichloroethane		<0.5	<0.5	<0.5	<0.5	<5
2-Butanone		--	--	--	--	<10
1,1,1-Trichloroethane		<0.5	<0.5	<0.5	<0.5	<5
Carbon tetrachloride		<0.5	<0.5	<0.5	<0.5	<5
Bromodichloromethane		<0.5	<0.5	<0.5	<0.5	<5
1,2-Dichloropropane		<0.5	<0.5	<0.5	<0.5	<5
cis-1,3-Dichloropropene		<0.5	<0.5	<0.5	<0.5	<5
Trichloroethene		<0.5	<0.5	<0.5	<0.5	<5
Dibromochloromethane		<0.5	<0.5	<0.5	<0.5	<5
1,1,2-Trichloroethane		<0.5	<0.5	<0.5	<0.5	<5
Benzene		<0.5	<0.5	<0.5	<0.5	<0.7
trans-1,3-Dichloropropene		<0.5	<0.5	<0.5	<0.5	<5
Bromoform		<0.5	<0.5	<0.5	<0.5	<5
4-Methyl-2-pentanone		--	--	--	--	<10
2-Hexanone		--	--	--	--	<10
Tetrachloroethene		<0.5	<0.5	<0.5	<0.5	<5
1,1,2,2-Tetrachloroethane		<0.5	<0.5	<0.5	<0.5	<5
Toluene		<0.5	<0.5	<0.5	<0.5	<5
Chlorobenzene		<0.5	<0.5	<0.5	<0.5	<5
Ethylbenzene		--	--	--	--	<5
Styrene		--	--	--	--	<5
Xylene (total)		<0.5	<0.5	<0.5	<0.5	<5
Vinyl Acetate		<0.5	<0.5	<0.5	<0.5	<5
Freon-113 *		<0.5	<0.5	<0.5	<0.5	<5
Total VOCs		0	0	0	0	**0.6**

VOCs Volatile organic compounds
ug/L Micrograms per liter
J Estimated value
B Detected in an associated method blank.
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
Bold value indicates a detection.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB070204 07/02/2004	TRIP BLANK TB070604 07/06/2004	TRIP BLANK TB070704 07/07/2004	TRIP BLANK TB070804 07/08/2004	TRIP BLANK TB070904 07/09/2004
Chloromethane		<5	<5	<5	<5	<5
Bromomethane		<5	<5	<5	<5	<5
Vinyl Chloride		<2	<2	<2	<2	<2
Chloroethane		<5	<5	<5	<5	<5
Methylene chloride		**0.8 J B**	**0.7 J B**	**1 J B**	**0.6 J B**	**1 J B**
Acetone		<10	<10	<10	<10	<10
Carbon disulfide		<5	<5	<5	<5	<5
1,1-Dichloroethene		<5	<5	<5	<5	<5
1,1-Dichloroethane		<5	<5	<5	<5	<5
cis-1,2-Dichloroethene		<5	<5	<5	<5	<5
trans-1,2-Dichloroethene		<5	<5	<5	<5	<5
Chloroform		<5	<5	<5	<5	<5
1,2-Dichloroethane		<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10
1,1,1-Trichloroethane		<5	<5	<5	<5	<5
Carbon tetrachloride		<5	<5	<5	<5	<5
Bromodichloromethane		<5	<5	<5	<5	<5
1,2-Dichloropropane		<5	<5	<5	<5	<5
cis-1,3-Dichloropropene		<5	<5	<5	<5	<5
Trichloroethene		<5	<5	<5	<5	<5
Dibromochloromethane		<5	<5	<5	<5	<5
1,1,2-Trichloroethane		<5	<5	<5	<5	<5
Benzene		<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene		<5	<5	<5	<5	<5
Bromoform		<5	<5	<5	<5	<5
4-Methyl-2-pentanone		<10	<10	<10	<10	<10
2-Hexanone		<10	<10	<10	<10	<10
Tetrachloroethene		<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane		<5	<5	<5	<5	<5
Toluene		<5	<5	<5	<5	<5
Chlorobenzene		<5	<5	<5	<5	<5
Ethylbenzene		<5	<5	<5	<5	<5
Styrene		<5	<5	<5	<5	<5
Xylene (total)		<5	<5	<5	<5	<5
Vinyl Acetate		<5	<5	<5	<5	<5
Freon-113 *		<5	<5	<5	<5	<5
Total VOCs		**0.8**	**0.7**	**1**	**0.6**	**1**

VOCs Volatile organic compounds
ug/L Micrograms per liter
J Estimated value
B Detected in an associated method blank.
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
Bold value indicates a detection.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB071304 07/13/2004	TRIP BLANK TB071404 07/14/2004	TRIP BLANK TB071604 07/16/2004	TRIP BLANK TB072304 07/23/2004	TRIP BLANK TB072704 07/27/2004
Chloromethane		<5	<5	<5	<5	<5
Bromomethane		<5	<5	<5	<5	<5
Vinyl Chloride		<2	<2	<2	<2	<2
Chloroethane		<5	<5	<5	<5	<5
Methylene chloride		**0.5 J B**	**3 J B**	**3 J B**	<5	<5
Acetone		<10	<10	<10	<10	<10
Carbon disulfide		<5	<5	<5	<5	<5
1,1-Dichloroethene		<5	<5	<5	<5	<5
1,1-Dichloroethane		<5	<5	<5	<5	<5
cis-1,2-Dichloroethene		<5	<5	<5	<5	<5
trans-1,2-Dichloroethene		<5	<5	<5	<5	<5
Chloroform		<5	<5	<5	<5	<5
1,2-Dichloroethane		<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10
1,1,1-Trichloroethane		<5	<5	<5	<5	<5
Carbon tetrachloride		<5	<5	<5	<5	<5
Bromodichloromethane		<5	<5	<5	<5	<5
1,2-Dichloropropane		<5	<5	<5	<5	<5
cis-1,3-Dichloropropene		<5	<5	<5	<5	<5
Trichloroethene		<5	<5	<5	<5	<5
Dibromochloromethane		<5	<5	<5	<5	<5
1,1,2-Trichloroethane		<5	<5	<5	<5	<5
Benzene		<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene		<5	<5	<5	<5	<5
Bromoform		<5	<5	<5	<5	<5
4-Methyl-2-pentanone		<10	<10	<10	<10	<10
2-Hexanone		<10	<10	<10	<10	<10
Tetrachloroethene		<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane		<5	<5	<5	<5	<5
Toluene		<5	<5	<5	<5	<5
Chlorobenzene		<5	<5	<5	<5	<5
Ethylbenzene		<5	<5	<5	<5	<5
Styrene		<5	<5	<5	<5	<5
Xylene (total)		<5	<5	<5	<5	<5
Vinyl Acetate		<5	<5	<5	<5	<5
Freon-113 *		<5	<5	<5	<5	<5
Total VOCs		**0.5**	**3**	**3**	0	0

VOCs Volatile organic compounds
ug/L Micrograms per liter
J Estimated value
B Detected in an associated method blank.
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
Bold value indicates a detection.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB080404 8/4/2004	TRIP BLANK TB081204 8/12/2004	WATER EQ. BLANK FB070104 07/01/2004	WATER EQ. BLANK FB070204 07/02/2004	WATER EQ. BLANK FB071304 07/13/2004
Chloromethane		<0.5	<0.5	<5	<5	<5
Bromomethane		<0.5	<0.5	<5	<5	<5
Vinyl Chloride		<0.5	<0.5	<2	<2	<2
Chloroethane		<0.5	<0.5	<5	<5	<5
Methylene chloride		<0.5	<0.5	**0.7 J B**	**0.5 J B**	**0.5 J B**
Acetone		--	--	<10	<10	<10
Carbon disulfide		--	--	<5	<5	<5
1,1-Dichloroethene		<0.5	<0.5	<5	<5	<5
1,1-Dichloroethane		<0.5	<0.5	<5	<5	<5
cis-1,2-Dichloroethene		<0.5	<0.5	<5	<5	<5
trans-1,2-Dichloroethene		<0.5	<0.5	<5	<5	<5
Chloroform		<0.5	<0.5	<5	<5	<5
1,2-Dichloroethane		<0.5	<0.5	<5	<5	<5
2-Butanone		--	--	<10	<10	<10
1,1,1-Trichloroethane		<0.5	<0.5	<5	<5	<5
Carbon tetrachloride		<0.5	<0.5	<5	<5	<5
Bromodichloromethane		<0.5	<0.5	<5	<5	<5
1,2-Dichloropropane		<0.5	<0.5	<5	<5	<5
cis-1,3-Dichloropropene		<0.5	<0.5	<5	<5	<5
Trichloroethene		<0.5	<0.5	<5	<5	<5
Dibromochloromethane		<0.5	<0.5	<5	<5	<5
1,1,2-Trichloroethane		<0.5	<0.5	<5	<5	<5
Benzene		<0.5	<0.5	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene		<0.5	<0.5	<5	<5	<5
Bromoform		<0.5	<0.5	<5	<5	<5
4-Methyl-2-pentanone		--	--	<10	<10	<10
2-Hexanone		--	--	<10	<10	<10
Tetrachloroethene		<0.5	<0.5	<5	<5	<5
1,1,2,2-Tetrachloroethane		<0.5	<0.5	<5	<5	<5
Toluene		<0.5	<0.5	<5	<5	<5
Chlorobenzene		<0.5	<0.5	<5	<5	<5
Ethylbenzene		--	--	<5	<5	<5
Styrene		--	--	<5	<5	<5
Xylene (total)		<0.5	<0.5	<5	<5	<5
Vinyl Acetate		<0.5	<0.5	<5	<5	<5
Freon-113 *		<0.5	<0.5	<5	<5	<5
Total VOCs		0	0	**0.7**	**0.5**	**0.5**

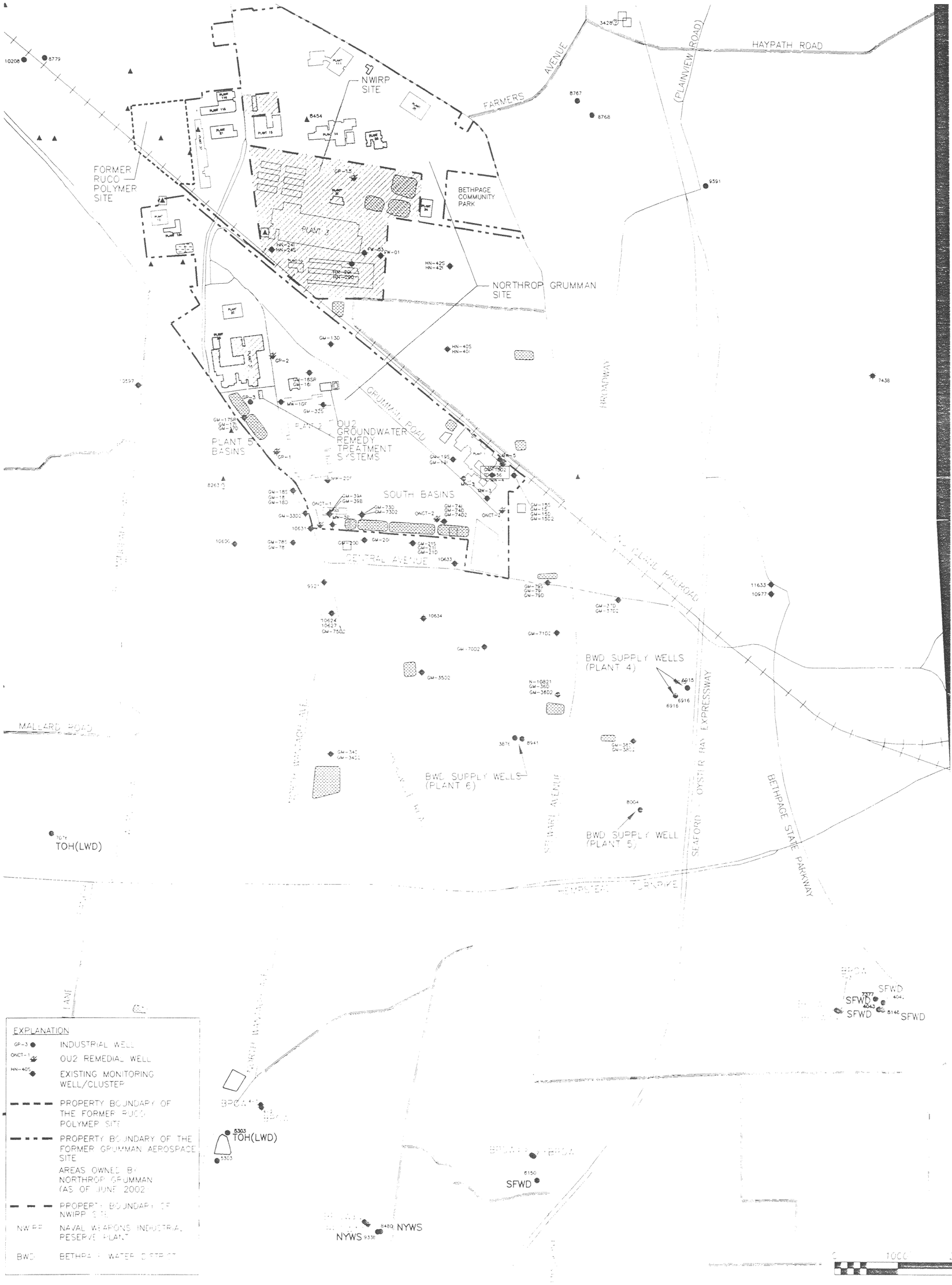
VOCs Volatile organic compounds
ug/L Micrograms per liter
J Estimated value
B Detected in an associated method blank.
* Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.
Bold value indicates a detection.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Second Quarter of 2004, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: WATER EQ. BLANK SAMPLE ID: DATE:	WATER EQ. BLANK FB071404 07/14/2004	 FB071604 07/16/2004
Chloromethane		<5	<5
Bromomethane		<5	<5
Vinyl Chloride		<2	<2
Chloroethane		<5	<5
Methylene chloride		**3 J B**	**0.6 J B**
Acetone		<10	<10
Carbon disulfide		<5	<5
1,1-Dichloroethene		<5	<5
1,1-Dichloroethane		<5	<5
cis-1,2-Dichloroethene		<5	<5
trans-1,2-Dichloroethene		<5	<5
Chloroform		<5	<5
1,2-Dichloroethane		<5	<5
2-Butanone		<10	<10
1,1,1-Trichloroethane		<5	<5
Carbon tetrachloride		<5	<5
Bromodichloromethane		<5	<5
1,2-Dichloropropane		<5	<5
cis-1,3-Dichloropropene		<5	<5
Trichloroethene		<5	**1 J**
Dibromochloromethane		<5	<5
1,1,2-Trichloroethane		<5	<5
Benzene		<0.7	<0.7
trans-1,3-Dichloropropene		<5	<5
Bromoform		<5	<5
4-Methyl-2-pentanone		<10	<10
2-Hexanone		<10	<10
Tetrachloroethene		<5	<5
1,1,2,2-Tetrachloroethane		<5	<5
Toluene		<5	<5
Chlorobenzene		<5	<5
Ethylbenzene		<5	<5
Styrene		<5	<5
Xylene (total)		<5	<5
Vinyl Acetate		<5	<5
Freon-113 *		<5	<5
Total VOCs		**3**	**1.6**

VOCs	Volatile organic compounds
ug/L	Micrograms per liter
J	Estimated value
B	Detected in an associated method blank.
*	Freon 113 also known as 1,1,1-Trichloro-2,2,2-trifluoroethane.

Bold value indicates a detection.



ARCADIS
88 Duryea Road
Melville, NY 11747
Tel: 631-249-7600 Fax: 631-249-7610
www.arcadis-us.com

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGNER	CHECKED BY
C. SAN GIOVANNI	N. VALKENBURG		D. STERN
SHEET TITLE		TASK/PHASE NUMBER	DRAWN BY
LOCATION OF OU2 GROUNDWATER REMEDY AND WELLS		00004	E. HUGHES
		PROJECT NUMBER	DRAWING NUMBER
		NY001348.0405	1

Path\Name : G:\PROJECT\Northrop Grumman\Cadd\OU2SYS_LOCATION_OLD\OU2SYS_LOCATION_REV6.dwg
User Name : enugnes

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Appendix A

Second Quarter 2004 Northrop Grumman Operational Data

Table A-1. Select VOC Concentrations in Water Samples Collected from the OU2 Remedial Wells, Well GP-3, and Treatment Systems, Second Quarter 2004, Northrop Grumman Corporation, Bethpage, New York. [1]

Sample Collection Date	Sample ID:	ONCT-1	ONCT-2	ONCT-3	ONCT System Effluent	GP-1		GP-3		GP-1 System Effluent	
	Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)		(ug/L)	
	Constituent:	TCE	TCE	TCE	TCE	VCM	TCE	VCM	TCE	VCM	TCE
4/5/2004		419	97	33	2.1	<0.5	270	50.0	2,064	--	0.5
4/19/2004		443	110	28	0.5	<0.5	248	42.9	1,965	--	<0.5
4/28/2004		417	113	24	<0.5	<0.5	258	39.5	1,922	--	<0.5
5/3/2004		381	95	27	<0.5	<0.5	264	45.8	1,970	--	<0.5
5/10/2004		388	94	23	<0.5	<0.5	376	--	--	--	1.8
5/17/2004		409	93	25	0.8	<0.5	382	38.2	1,970	--	1.0
5/24/2004		444	129	35	<0.5	<0.5	--	22.8	2,037	--	0.8
6/7/2004		382	108	31	<0.5	<0.5	269	47.6	1,840	--	<0.5
6/14/2004		566	97	34	<0.5	<0.5	300	48.9	1,850	--	<0.5
6/21/2004		521	100	35	<0.5	<0.5	315	46.9	1,884	--	<0.5
6/28/2004		-- [3]	127	33	<0.5	<0.5	283	40.0	2,238	--	0.5
7/6/2004		-- [3]	133	31	<0.5	<0.5	364	45.2	1,904	--	<0.5
7/12/2004		-- [3]	112	30	<0.5	<0.5	281	35.0	2,251	--	<0.5
Average Concentration:[2]		**437**	**108**	**30**	**0.3**	**<0.5**	**301**	**41.9**	**1,991**	**--**	**0.4**

Notes:

(1) Water samples were collected and analyzed by Northrop Grumman; results were not validated.

(2) For calculations which include non-detected results, a value of zero was used in computing the average VOC concentration for the period of record.

(3) Well ONCT-1 was not operating, therefore water sample was not collected.

Definitions

VOC	Volatile Organic Compound
OU2	Operable Unit 2
TCE	Trichloroethene
VCM	Vinyl Chloride Monomer
ug/L	Micrograms per liter
--	Not Analyzed

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Appendix B

Groundwater Sampling Logs

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Water Sampling Log

Project: NORTHROP GRUMMAN — Project No.: MY001348.9/04.0000 — Page 1 of 1

Site Location: BETHPAGE NY — Date: 7-1-04

Site/Well No.: PTMW04 — Replicate No.: N/A — Code No.:

Weather: Sunny 81° — Sampling Time: Begin 3:00 pm — End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	56.5
Depth to Water (ft bmp)	47.10
Water-Level Elevation (ft)	/
Water Column in Well (ft)	9.4
Casing Diameter/Type	2" (0.16)
Gallons in Well	1.5
Gallons Pumped/Bailed Prior to Sampling	~~3~~ x 3 = 4.5
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 2:55 pm end 3:00 pm
Pumping Rate (gpm)	Q= 1 T= ~~5~~ 4.5 1.5
Evacuation Method	Non-dedicated submersible Pump

Field Parameters

	1	2	3	4	5
Color	—	—	—	COLORLESS	
Odor	—	—	—	NONE	
Appearance	—	—	—	CLEAR	
pH (s.u.)	6.11	6.00	6.01	6.01	
Conductivity ~~(mS/cm)~~ (µmhos/cm)	360	421	413	420	
Turbidity (NTU)	—	60	18	10	
Temperature (°C)	17.2	16.5	16.9	17.1	
Dissolved Oxygen (mg/L)					
Time / Salinity (%)	2:55	2:58	2:58	3:00	

Sampling Method:

Remarks: BZ 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/BP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 7-1-04

Site/Well No.: Plant 1 MW05 | Replicate No.: N/A | Code No.:

Weather: Sunny 81° slight Breeze | Sampling Time: Begin ____ End ____

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	58.90
Depth to Water (ft bmp)	45.54
Water-Level Elevation (ft)	/
Water Column in Well (ft)	13.36
Casing Diameter/Type	2" (.16)
Gallons in Well	2.1376
Gallons Pumped/Bailed Prior to Sampling	6.41 x3
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin ____ end ____
Pumping Rate (gpm)	Q=2 T=1
Evacuation Method	Non-dedicated submersible Pump

Field Parameters

	I	1w	2w	3w	4w	5w
Color	-	-	-	-	-	-
Odor	-	-	-	-	-	-
Appearance	-	-	-	-	-	-
pH (s.u.)	-	5.48	5.52	5.57	5.48	5.57
Conductivity (mS/cm)	-		192			
(µmhos/cm)	-	180	[illegible]	1847	1929	1910
Turbidity (NTU)		>200	100	40	28	16
Temperature (°C)		18.3	17.7	18.5	18.8	17.9
Dissolved Oxygen (mg/L)						
Salinity (%)						
Sampling Method						

Remarks: DTW 45.54

PID reading at wellhead 3

Breathing Zone 0

Constituents Sampled	Container Description	Number	Preservative
See COC			
Note: 2 Breathing zone 0			
Well Head 3			

Sampling Personnel: GW/BP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.0002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 7-1-04

Site/Well No.: Plant 1 MW06 | Replicate No.: N/A | Code No.:

Weather: Sunny 81° slight breeze | Sampling Time: Begin 1:58 pm | End:

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	62
Depth to Water (ft bmp)	47.98
Water-Level Elevation (ft)	/
Water Column in Well (ft)	14.02
Casing Diameter/Type	2" (0.16)
Gallons in Well	2.24 x 3
Gallons Pumped/Bailed Prior to Sampling	7
Sample Pump Intake Setting (ft bmp)	Q=1 T=7 1v = 2.2
Purge Time	begin 1:50 pm end 1:58 pm
Pumping Rate (gpm)	
Evacuation Method	Non-dedicated submersible pump

Field Parameters

Field Parameters	I	W	2J	3J	4J
Color	-	-	-	-	Colorless
Odor	-	-	-	-	none
Appearance	-	-	-	-	clear
pH (s.u.)	5.62	5.64	5.69	5.68	5.69
Conductivity ~~(mS/cm)~~ (µmhos/cm)	335	360	370	362	367
Turbidity (NTU)		400	85	25	7.8
Temperature (°C)	17.8	17.9	18.0	17.3	18.0
Dissolved Oxygen (mg/L)					
Salinity (%)	1.50	1.52	1.54	1.56	1.58
Sampling Method					
Remarks					

Note: PID reading at well head 0
Breathing zone 0

Constituents Sampled	Container Description	Number	Preservative
See COC			
Note: Breathing zone 0			
Well head 0			

Sampling Personnel: GW/BP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date 7-16-04

Site/Well No. MW 3R | Replicate No. N/A | Code No.

Weather Partly Cloudy 86° Light Breeze | Sampling Time: Begin 3:01 pm | End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	55
Depth to Water (ft bmp)	38.70
Water-Level Elevation (ft)	—
Water Column in Well (ft)	16.3
Casing Diameter/Type	2" (0.16) / PVC
Gallons in Well	2.61
Gallons Pumped/Bailed Prior to Sampling	x3 7.8
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 2:46 pm end
Pumping Rate (gpm)	Q=1 T=8 1v=3
Evacuation Method	(3SW) Non-dedicated Submersible pump

Field Parameters

Field Parameters	I	1v	2v	3v
Color	—	—	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	6.33	6.17	6.04	5.78
Conductivity ~~(mS/cm)~~ (µmhos/cm)	164	152.2	149.9	141.9
Turbidity (NTU)	greater than 200	greater than 200	greater than 200	108
Temperature (°C)	18.9	17.0	16.8	16.3
Dissolved Oxygen (mg/L)				
~~Salinity~~ Time (%)	2:46	2:49	2:52	2:55
Sampling Method				
Remarks	PID reading at wellhead 0			

Constituents Sampled – See COC

Field parameter	4v	5v	6v
pH	5.75	5.78	—
Conductivity	143.5	142.5	—
Turbidity	45.3	30	—
Temperature	16.2	16.2	—
Time	2:58	3:01	

16.2

Container Description	Number	Preservative

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.

1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP-Columbus | Project No. NY001348.0484.0002 | Page 1 of 1

Site Location: BETHPAGE NY | Date: 7-1-04

Site/Well No.: GM-15S | Replicate No.: N/A | Code No.:

Weather: Sunny 81° | Sampling Time: Begin 4:09 pm | End:

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	80.00
Depth to Water (ft bmp)	48.00
Water-Level Elevation (ft)	/
Water Column in Well (ft)	32.00
Casing Diameter/Type	4" (0.65)
Gallons in Well	20.08 x3
Gallons Pumped/Bailed Prior to Sampling	60.00
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 3:20 pm end 4:09 pm
Pumping Rate (gpm)	Q=2 T=40 V=13
Evacuation Method	Non-dedicated submersible pump

Field Parameters	I	W	2J	3J
Color	-	-	-	-
Odor	-	-	-	-
Appearance	-	-	-	-
pH (s.u.)	6.35	5.91	5.89	5.89
Conductivity ~~(mS/cm)~~		330		
(µmhos/cm)	83.2	80	337	373
Turbidity (NTU)	>200	-	24	13
Temperature (°C)	19.5	19.4	19.6	19.6
Dissolved Oxygen (mg/L)				
~~Turbidity~~ Salinity (%)	3:20	3:38	3:46	4:09
Sampling Method				

Remarks: STRONG SEWER ODOR

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GWPP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: ~~NORTHROP GRUMMAN~~ | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: BETHPAGE NY | Date: 7-13-04

Site/Well No.: GM-15I | Replicate No.: N/A | Code No.:

Weather: Drizzle 70° | Sampling Time: Begin 3:16 pm | End 3:17 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	105
Depth to ~~Water~~ gage (ft bmp)	94
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11
Casing Diameter/Type	4" (0.65)
Gallons in Well	7.15 x 3
Gallons Pumped/Bailed Prior to Sampling	~~20.45~~ 21.45
Sample ~~Pump~~ PACKER Intake Setting (ft bmp)	PSI 90
Purge Time	begin ____ end 3:16 pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated Bladder

Field Parameters

Field Parameters	I	10	20	30
Color	—	—	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	5.53	5.48	5.45	5.27
Conductivity ~~(mS/cm)~~ (µmhos/cm)	276	261	260	244
Turbidity (NTU)				2.3
Temperature (°C)	17.6	17.4	17.4	19.6
Dissolved Oxygen (mg/L)				
Salinity (%)				
Sampling Method				
Remarks	5 gal pails	ϕ	1 ϕ	ϕ

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 15 D
Date: 7-13-04 Sampled By: GW PP
Sampling Time: 2:03 pm Recorded By: PP
Weather: Drizzle 71° Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 332 Bottom 342
Sounded Depth (ft bmp): 342 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 50.76 Purge time Start: 1:03 pm Finish: 2:03 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. µS (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
1:03		500/100		19.4	5.38	154.2	365	8.84	3.0	50.76	
1:08		500/DD		18.1	5.05	157.7	374	3.03	1.1		
1:13				17.8	4.87	161.6	379	2.98	1.4	50.75	
1:18				17.7	4.83	164.5	376	3.23	2.8		
1:23				17.7	4.81	164.3	374	3.26	1.5	50.76	
1:28				17.6	4.81	163.9	374	3.36	1.6		
1:33				17.7	4.82	163.2	371	3.76	2.1	50.76	
1:38				17.6	4.82	162.4	370	3.63	2.3		
1:43				17.6	4.83	161.5	370	3.43	3.3	50.75	
1:48				17.6	4.83	160.0	367	3.15	2.3		
1:53				17.6	4.83	159.1	365	3.28	2.2	50.75	
1:58				17.6	4.83	158.3	364	3.19	2.0		
2:03				17.6	4.83	158.1	363	3.06	1.2	50.75	

Sample Condition Color: Clear Odor: — Appearance: clear
Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: Rain

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 15D2
Date: 7-13-04 Sampled By: GW PP
Sampling Time: 12:21 pm Recorded By: PP
Weather: 71° Light Rain Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): _____ Serial #: _____

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 536 Bottom 556
Sounded Depth (ft bmp): 556 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 53.50 Purge time Start: 11:20 AM Finish: 12:20 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. µS (~~mS/cm~~)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
11:20		500/100		19.2	5.39	76.7	414	9.97	2.3	53.50	
11:25				17.8	4.96	76.2	419	3.05	1.8		
11:30				17.6	4.97	76.1	418	4.63	1.7	53.51	
11:35				17.7	5.06	76.1	414	6.73	1.5		
11:40				17.7	5.06	76.1	412	6.68	1.5	53.50	
11:45				17.8	5.06	75.9	408	7.18	1.7		
11:50				17.8	5.08	75.9	408	7.43	1.3	53.50	
11:55				17.7	5.08	75.7	402	6.90	1.8		
12:00				17.6	5.08	75.9	400	7.01	1.1	53.51	
12:05				17.6	5.08	75.7	398	7.44	1.2		
12:10				17.6	5.08	75.7	397	7.48	1.2	53.50	
12:15				17.6	5.09	75.7	394	7.16	1.8		
12:20				17.6	5.09	76.0	395	7.17	1.2		

Sample Condition Color: clear Odor: — Appearance: clear
Sample Collection

Parameter:	Container:	No.	Preservative:
See CoC			

PID Reading Rain

Comments _____

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP GRUMMAN   Project No. NY001348.0404.0000   Page 1 of 1

Site Location: BETHPAGE NY   Date: 7-2-04

Site/Well No.: GM-17SR   Replicate No.: N/A   Code No.:

Weather: CLEAR 90°   Sampling Time: Begin 12:16 pm   End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	70
Depth to Water (ft bmp)	51.99
Water-Level Elevation (ft)	/ ~~18.0~~
Water Column in Well (ft)	~~54.00~~ 18.02
Casing Diameter/Type	4 (0.65)
Gallons in Well	11.7 x 3
Gallons Pumped/Bailed Prior to Sampling	35.13
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 11:45 AM end
Pumping Rate (gpm)	Q=1 T=35 V=12
Evacuation Method	

Field Parameters	I	1V	2V	3V
Color	–	–	–	–
Odor		–	–	–
Appearance	–	–	–	–
pH (s.u.)	5.54	5.99	5.96	6.06
Conductivity ~~(mS/cm)~~				
(µmhos/cm)	106.9	104.3	102.5	104.0
Turbidity (NTU)	7.9	3.8	5.3	2.6
Temperature (°C)	22.8	22.8	23.1	23.0
Dissolved Oxygen (mg/L)				
TIME ~~Salinity (%)~~	11:45	11:57	12:09	12:21

Sampling Method:

Remarks: PID reading at wellhead 0
BZ 0

Constituents Sampled	Container Description	Number	Preservative
~~[illegible]~~ See COC			
~~[illegible]~~			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	mililiter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: 60013548.0404 Task: 00002 Well ID: GM 17I
Date: 7-9-04 Sampled By: PP
Sampling Time: 11:55 AM Recorded By: PP
Weather: Partly Sunny 82° Coded Replicate No.: N/A
Light Breeze cloudy

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 100 Bottom 120
Sounded Depth (ft bmp): 120 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 52.20 Purge time Start: 10:55 AM Finish: 11:55 AM

Field Parameter Measurements Taken During Purging

Time AM	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~(mS/cm)~~ µS	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
10:55		500/DD		22.8	5.70	114.8	295	11.20	2.1	52.20	
11:00				21.0	6.04	111.8	315	10.22	2.3		
11:05				20.6	6.08	107.5	314	10.29	2.3	52.21	
11:10				20.4	6.14	104.4	324	9.64	2.1		
11:15				20.3	6.16	101.4	322	9.52	1.4	52.21	
11:20				20.3	6.18	100.8	327	10.27	1.5		
11:25				20.3	6.18	99.5	329	10.08	2.1	52.21	
11:30				20.3	6.18	98.3	331	9.95	2.2		
11:35				20.1	6.19	97.4	333	9.92	1.6	52.22	
11:40				20.1	6.19	97.1	336	9.94	1.4		
11:45				20.0	6.21	96.9	334	9.76	1.4	52.22	
11:50				19.8	6.21	96.5	336	10.09	1.4		
11:55				19.7	6.21	96.2	337	9.64	Avg 1.49	52.22	

Sample Condition Color: clear Odor: / Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: BZ 0

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: MY001348.0404 Task: 00002 Well ID: GM 17D
Date: 7-9-04 Sampled By: GP
Sampling Time: 1:27 pm Recorded By: PP
Weather: Partly cloudy 81° Coded Replicate No.: N/A
Light Breeze

Instrument Identification
Water Quality Meter(s): — Serial #: —

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 278 Bottom 298
Sounded Depth (ft bmp): 298 Pump Intake Depth (ft bmp): —
Depth to Water (ft bmp): 53.48 Purge time Start: 12:27 pm Finish: 1:27 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:27		500 DD		23.8	5.12	97.4	343	7.38	2.5	53.48	
12:32				21.6	5.18	96.9	353	6.80	2.1		
12:37				21.2	5.34	95.6	350	7.70	1.4	53.48	
12:42				21.1	5.34	94.8	353	7.66	2.0		
12:47				21.3	5.35	94.7	354	8.09	2.0	53.48	
12:52				21.0	5.35	94.0	356	8.32	2.0		
12:57				20.7	5.35	94.0	358	7.83	2.0	53.47	
1:02				20.6	5.35	94.2	359	7.59	2.0		
1:07				21.0	5.36	94.0	356	8.30	1.4	53.47	
1:12				21.1	5.34	94.1	357	8.37	1.3		
1:17				21.1	5.35	93.9	356	8.27	1.5	53.47	
1:22				20.9	5.35	93.9	358	8.47	1.9		
1:27				20.6	5.35	94.1	360	8.38	1.9	53.46	

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading At wellhead 0, BZ 0

Comments —

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman Project No. NY001348.0404.00002 Page 1 of 1

Site Location: Bethpage, NY Date 7-16-04

Site/Well No. GM 18S Replicate No. N/A Code No.

Weather cloudy 88° Sampling Time: Begin 2:00 pm End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67
Depth to Water (ft bmp)	43.92
Water-Level Elevation (ft)	—
Water Column in Well (ft)	23.08
Casing Diameter/Type	2" (0.16) / Steel
Gallons in Well	3.69 x 3
Gallons Pumped/Bailed Prior to Sampling	11.08
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1:48 end 2:00 pm
Pumping Rate (gpm)	Q=1 T=11 1V=4
Evacuation Method	3 SWV

Field Parameters

Field Parameters	I	1V	2V	3V
Color	—	—	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	6.27	6.26	6.38	6.34
Conductivity ~~(mS/cm)~~ (µmhos/cm)	222	348	344	342
Turbidity (NTU)	Greater than 200	54.0	16.4	8.53
Temperature (°C)	—	17.6	17.9	18.3
Dissolved Oxygen (mg/L)				
~~Salinity~~ time (%)	1:48	1:52	1:56	2:00
Sampling Method				

Remarks: PID reading at wellhead 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 7-23-04

Site/Well No.: GM 18I | Replicate No.: N/A | Code No.:

Weather: Drizzle 79° | Sampling Time: Begin 6:11pm | End

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	105
Depth to ~~Water~~ packer (ft bmp)	94
Water-Level Elevation (ft)	
Water Column in Well (ft)	11
Casing Diameter/Type	4" (0.65) / PVC
Gallons in Well	7.15 x3
Gallons Pumped/Bailed Prior to Sampling	21.45
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 3:30pm end 6:11pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated bladder Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	5.49	6.28	6.25	6.03
~~Conductivity (mS/cm)~~ (µmhos/cm)	290	145.7	135.2	132.4
Turbidity (NTU)				26.5
Temperature (°C)	18.9	19.1	19.1	18.9
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ 5 gallon containers		✱ (½ ✱)	✱ (½ ✱)	✱ plus 2 gallon

Sampling Method:

Remarks: ✱ = 5gallon container

psi 90 from previous sampling Memo

No lock on well

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: 4001348.0404 Task: 00002 Well ID: GM 18D
Date: 7-9-04 Sampled By: PP
Sampling Time: 4:02 pm Recorded By: PP
Weather: Partly cloudy 80° Breezy Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 290 Bottom 300
Sounded Depth (ft bmp): 300 ~~max~~ Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 48.87 Purge time Start: 3:02 pm Finish: 4:02 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
3:02		500/00		24.5	6.94	96.7	285	8.85	1.6	48.87	
3:07				21.2	5.80	97.2	298	8.62	2.0		
3:12				20.3	5.71	100.1	302	8.38	3.1	48.87	
3:17				20.3	5.69	100.1	308	8.49	3.8		
3:22				20.2	5.64	99.7	312	8.57	2.7	48.88	
3:27				20.0	5.62	99.5	310	8.69	2.2		
3:32				20.2	5.61	99.6	314	9.24	1.9	48.90	
3:37				20.2	5.61	99.4	314	8.74	1.6		
3:42				19.9	5.60	99.7	317	8.85	2.2	48.94	Lowered rate
3:47				20.1	5.57	99.4	318	8.86	2.7		
3:52				20.2	5.60	99.3	319	9.35	1.4	48.94	
3:57				20.0	5.62	99.2	317	8.61	2.2		
4:02				20.0	5.62	99.3	318	9.16	2.4		

Sample Condition Color: clear Odor: / Appearance: clear
Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 4.0, BZ 2.5

Comments:

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No.: NY001348.0404.00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 7-27-04

Site/Well No.: GM 18 I | Replicate No.: N/A | Code No.:

Weather: Overcast Light Drizzle 72° | Sampling Time: Begin 2:45 pm End 2:47 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	105
Depth to ~~Water~~ packer (ft bmp)	94
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11
Casing Diameter/Type	4" (0.65) / PVC
Gallons in Well	7.15 x 3
Gallons Pumped/Bailed Prior to Sampling	21.45 4.5 5 gallon containers
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 12:35 pm end 2:45 pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Bladder Pump

Field Parameters

Field Parameters	I	1 ✓	2 ✓	3 ✓
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	5.57	5.99	5.99	5.89
Conductivity ~~(mS/cm)~~ (µmhos/cm)	127.9	130.6	126.9	125.5
Turbidity (NTU)	—	—	—	20.0
Temperature (°C)	18.9	18.5	18.2	18.2
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon container		ø ½	ø ½	ø 1.0 gallon

Sampling Method: —

Remarks: PSI 100

Built new air hose. No lock on well.

Note: PSI taken from previous sampling log

Constituents Sampled	Container Description	Number	Preservative
See CoC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrup-Grumman | Project No.: NY001348.0404.00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 7-14-04

Site/Well No.: GM 20I | Replicate No.: N/A | Code No.:

Weather: Light Breeze Sunny 82° | Sampling Time: Begin 4:25 pm | End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	105
Depth to ~~Water~~ Product (ft bmp)	94
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11
Casing Diameter/Type	4" (0.65)
Gallons in Well	7.15 x3
Gallons Pumped/Bailed Prior to Sampling	21.45
Sample Pump Intake Setting (ft bmp)	90 PSI
Purge Time	begin 3:25 pm end 4:25 pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated Bladder

Field Parameters

Field Parameters	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	8.33	11.0	11.0	11.03
Conductivity ~~(mS/cm)~~ (µmhos/cm)	225	289	270	265
Turbidity (NTU)				5.1
Temperature (°C)	17.3	15.8	15.5	15.2
Dissolved Oxygen (mg/L)				
Salinity (%)				
Sampling Method				

Remarks: PID reading at wellhead 0

Note: PSI taken off previous sampling log

5 gallons! ØØØØ

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW / PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date 7-14-04

Site/Well No. GM 20D | Replicate No. N/A | Code No. ____

Weather Sunny 82° | Sampling Time: Begin ____ End ____

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	226
Depth to ~~Water~~ Packer (ft bmp)	215
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11
Casing Diameter/Type	4" (0.65)
Gallons in Well	7.15
Gallons Pumped/Bailed Prior to Sampling	x 3 = 21.45
Sample Pump Intake Setting (ft bmp)	105 psi
Purge Time	begin 2:11 pm end ____
Pumping Rate (gpm)	____
Evacuation Method	Dedicated Bladder

Field Parameters	I	1 ✓	2 ✓	3 ✓
Color	clear	clear	clear	
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	6.77	6.22	6.06	5.99
Conductivity ~~(mS/cm)~~ (µmhos/cm)	101.2	100.7	102.2	101.6
Turbidity (NTU)				2.0
Temperature (°C)	18.7	17.8	17.1	16.9
Dissolved Oxygen (mg/L)				
Salinity (%)				

Sampling Method ____

Remarks: PID reading at wellhead 0

note: PSI taken off previous sampling ~~log~~ log.

5 gallons: Ø Ø Ø Ø

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop-Grumman Project No.: NY001318.0404.0002 Page 1 of 1

Site Location: Bethpage, NY Date: 7-13-04

Site/Well No.: GM-21S Replicate No.: N/A Code No.:

Weather: Light Drizzle 70° Sampling Time: Begin ____ End ____

Evacuation Data	
Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67
Depth to Water (ft bmp)	38.15
Water-Level Elevation (ft)	—
Water Column in Well (ft)	28.85
Casing Diameter/Type	2" (0.16)
Gallons in Well	4.6 ×3
Gallons Pumped/Bailed Prior to Sampling	14
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	Q=1 T=14 V=5
Evacuation Method	Non-dedicated submersible pump

Field Parameters	I	10	20	30
Color	Brown	clearish	—	—
Odor	—	—	—	—
Appearance	silty	clear	—	—
pH (s.u.)	6.70	6.90	6.13	6.21
Conductivity ~~(mS/cm)~~ (μmhos/cm)	88.4	90.5	88.9	86.2
Turbidity (NTU)				24
Temperature (°C)	29.2	27.6	25.5	24.7
Dissolved Oxygen (mg/L)				
~~Salinity~~ TIME (%)	4:16	4:21	4:26	4:30
Sampling Method				

Remarks

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	mililiter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date 7-13-04

Site/Well No. GM 21 I | Replicate No. N/A | Code No.

Weather Light Drizzle 70° | Sampling Time: Begin 4:54 pm | End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	140
Depth to ~~Water~~ Packer (ft bmp)	129
Water-Level Elevation (ft)	/
Water Column in Well (ft)	11
Casing Diameter/Type	4" (0.65)
Gallons in Well	7.15 x3
Gallons Pumped/Bailed Prior to Sampling	21.45
Sample Pump Intake Setting (ft bmp)	PSI 90
Purge Time	begin 3:47 pm end
Pumping Rate (gpm)	
Evacuation Method	Dedicated Bladder

Field Parameters

Field Parameters	I	1V	2V	3V
Color	clear	—	—	—
Odor	—	—	—	—
Appearance	clear	—	—	—
pH (s.u.)	5.39	8.45	7.12	9.47
Conductivity ~~(mS/cm)~~ (µmhos/cm)	103.2	103.6	95.1	48.7
Turbidity (NTU)				3.7
Temperature (°C)	28.4	25.7	23.9	~~7.12~~
Dissolved Oxygen (mg/L)				
~~Salinity~~ (%)				
Sampling Method				

Remarks: Temp not working on 3V (Batteries replaced)

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: N4001348.0404 Task: 00002 Well ID: GM21D
Date: 7-8-04 Sampled By: AB
Sampling Time: 11:57 AM Recorded By: AB
Weather: Sunny 85° Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 278 Bottom 288
Sounded Depth (ft bmp): 288 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 46.77 Purge time Start: 10:55 AM Finish: 11:55 AM
From top of well casing

Field Parameter Measurements Taken During Purging

Time AM	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SU Units)	Spec. Cond. mS/cm	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
10:55		500/DD		25.4	4.91	86.1	344	8.03	11	46.77	
11:00				24.0	4.84	86.0	343	5.02	6.3		
11:05				22.8	4.79	82.1	353	5.24	7.6	46.78	
11:10				22.5	4.83	76.7	355	5.34	5.0		
11:15				22.5	4.85	72.5	360	5.74	4.8	46.78	
11:20				22.4	4.85	72.9	362	5.61	3.6		
11:25				21.8	4.85	73.9	368	5.49	3.0	46.79	
11:30				21.0	4.84	74.9	371	5.87	2.7		
11:35				20.5	4.84	76.5	372	6.15	2.5	46.79	
11:40				20.4	4.84	76.9	372	6.07	2.2		
11:45				20.7	4.84	77.1	374	6.19	2.3	46.79	
11:50				21.3	4.83	76.9	368	6.16	2.1		
11:55				23.6	4.83	77.4	372	6.11	2.0		

Sample Condition Color: clear Odor: — Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading At wellhead: 2.3 BZO

Comments: Generator stopped toward end - needed oil. Had to restart.

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 33D2
Date: 7-16-04 Sampled By: GW PP
Sampling Time: 12:52 Recorded By: PP
Weather: Partly cloudy 90° Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): — Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 500 Bottom 520
Sounded Depth (ft bmp): 520 Pump Intake Depth (ft bmp): —
Depth to Water (ft bmp): 49.85 Purge time Start: 11:52 AM Finish: 12:52

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~(mS/cm)~~ µS/cm	ORP (mV)	DO ~~(mg/L)~~ mg/l	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
11:52				22.4	6.13	79.0	215	8.63		49.85	
11:57				21.9	6.15	84.6	225	7.68			
12:02				21.5	6.03	88.2	231	7.62		49.82	
12:07				21.3	5.97	90.2	236	7.35			
12:12				21.0	5.83	91.2	241	7.58			
12:17				20.9	5.78	92.2	237	8.11		49.81	
12:22				20.7	5.93	94.5	225	8.69			
12:27				20.5	6.07	96.9	219	8.62		49.81	
12:32				20.4	6.20	97.9	214	9.13			
12:37				20.2	6.30	98.9	211	9.52		49.82	
12:42				20.3	6.33	98.9	210	9.48			
12:47				20.3	6.41	98.9	207	9.16		49.81	
12:52				20.4	6.44	98.8	207	9.21	15.0		

Sample Condition Color: — Odor: — Appearance: —
Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: Bz 0

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 34 D
Date: 7-14-04 Sampled By: GW/BP
Sampling Time: 1:18pm Recorded By: BP
Weather: 82° Sunny Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): — Serial #:

Purging Information
Casing Material: steel Purge Method: Non-dedicated Bladder / Low Flow
Casing Diameter: 2" Screen Interval (ft bmp): Top 309 Bottom 319
Sounded Depth (ft bmp): 319 Pump Intake Depth (ft bmp): —
Depth to Water (ft bmp): 17.85 Purge time Start: 12:18pm Finish: 1:18pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (Si Units)	Spec. Cond. ~~mS/cm~~ µS	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:18		DD		19.3	5.75	162.1	28	1.80		17.85	
12:23				17.1	6.03	178.0	-7	.91			
12:28				16.8	6.30	178.8	-33	.72			
12:33				17.1	6.42	176.1	-49	.77			
12:38				16.9	7.15	159.6	-92	.62		17.45	
12:43				17.2	7.45	176.9	-90	.40			
12:48				16.8	7.29	191.7	-95	.46		17.40	
12:53				17.1	7.09	189.2	-93	.52			
12:58				17.2	6.91	186.8	-78	.60			
1:03				17.1	6.77	187.3	-66	.59		17.35	
1:08				17.0	6.62	186.9	-57	.62			
1:13				17.0	6.54	186.9	~~-58~~ -53	.50			
1:18				17.0	6.35	186.2	-8	.62	18	17.28	

Sample Condition Color: clear Odor: — Appearance:

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: Bz 0

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 34 D2
Date: 7-14-04 Sampled By: GW
Sampling Time: 11:55 AM Recorded By: PP
Weather: 77° overcast Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): — Serial #:

Purging Information
Casing Material: steel Purge Method: Non-dedicated Bladder / Low flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 510 Bottom 520
Sounded Depth (ft bmp): 520 Pump Intake Depth (ft bmp): —
Depth to Water (ft bmp): 19.70 Purge time Start: 10:55 AM Finish: 11:55 AM

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~(mS/cm)~~ µS	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
10:55		DD		23.1	5.19	80.1	252	4.05	70	19.70	
11:00				26.7	5.60	74.4	250	2.18	50		
11:05				16.5	7.18	90.7	245	1.38	32	19.70	
11:10				15.9	5.74	82.6	141	1.10			
11:15				15.8	5.64	87.3	31	.72		19.70	
11:20				16.0	5.34	118.5	-37	.56			
11:25				16.0	5.35	133.5	-55	.49		19.69	
11:30				16.1	5.39	136.8	-48	.71			
11:35				16.2	5.40	130.3	-17	1.33		19.68	
11:40				16.4	5.30	119.1	14	2.46			
11:45				16.5	5.29	110.0	45	3.57		19.68	
11:50				16.9	5.28	104.9	59	4.50			
11:55				16.9	5.30	99.1	79	5.19	85		

Sample Condition Color: clear Odor: — Appearance:

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 0, BZ 0

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: M 001348.0404 Task: 00002 Well ID: GM 39 D
Date: 7-7-04 Sampled By: BP
Sampling Time: 3:42 pm Recorded By: BP
Weather: Sunny 86° Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 262 Bottom 282
Sounded Depth (ft bmp): 282 Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 42.45 (At top of well casing) Purge time Start: 2:42pm Finish: 3:42

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:42		500 DD		24.4	6.27	93.3	272	6.79	7.9	42.45	
2:47				21.0	6.05	99.6	273	6.58	5.2		
2:52				19.3	5.85	102.8	295	7.61	6.7	42.46	
2:57				18.7	5.75	103.6	288	9.06	4.0		
3:02				18.6	5.75	103.6	288	9.01	3.1	42.46	
3:07				18.4	5.74	103.6	290	8.74	2.5		
3:12				18.5	5.74	103.3	288	8.55	2.2	42.46	
3:17				18.4	5.74	103.1	289	9.06	2.1		
3:22				18.4	5.74	103.3	289	9.07	2.4	42.46	
3:27				18.0	5.74	103.5	287	8.98	2.4		
3:32				18.0	5.72	103.8	287	8.92	2.4	42.47	
3:37				17.9	5.72	103.5	288	9.06	2.2		
3:42				17.8	5.72	103.9	287	9.06	2.6	42.46	

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See CoC			

PID Reading: At wellhead 0.2 BZ 0.2

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: M 001346.0404 Task: 00002 Well ID: GM 39 D-2
Date: 7-7-04 Sampled By: PP
Sampling Time: 5:06 pm Recorded By: PP
Weather: Sunny 82° Coded Replicate No.: - N/A
Light Breeze

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: DED. BLADDER
Casing Diameter: 4" Screen Interval (ft bmp): Top 410 Bottom 420
Sounded Depth (ft bmp): 420 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 44.18 Purge time Start: 4:05 pm Finish: 5:05 pm
At top of well casing

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~(mS/cm)~~ µS	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
4:05				24.0	5.78	132.4	282	8.28	8.9	44.18	
4:10				21.2	5.76	123.3	284	8.02	6.3		
4:15				19.4	5.51	119.6	293	9.12	4.0	44.20	
4:20				18.6	5.35	113.6	298	9.39	3.9		
4:25				18.4	5.34	112.7	299	9.37	2.8	44.18	
4:30				18.3	5.36	112.2	299	9.73	2.5		
4:35				18.3	5.35	112.0	298	9.68	2.4	44.19	
4:40				18.1	5.35	112.0	299	9.72	2.4		
4:45				18.0	5.35	112.1	296	9.67	2.5	44.20	
4:50				18.0	5.35	112.1	296	9.64	2.5		
4:55				18.0	5.35	112.1	296	9.63	2.5	44.18	
5:00				18.0	5.33	112.1	296	9.43	2.4		
5:05				17.9	5.34	112.3	295	9.63	2.2	44.19	

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 0.2 BZO

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: 60134 8.0404 Task: 00002 Well ID: GM 73 D
Date: 7/7/04 Sampled By: BP
Sampling Time: 11:30 AM Recorded By: BP
Weather: Sunny 80° Coded Replicate No.: — MS/MSD

Instrument Identification
Water Quality Meter(s): ✓ Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 401 Bottom 411
Sounded Depth (ft bmp): 411 ~~NM~~ Pump Intake Depth (ft bmp): ✓
Depth to Water (ft bmp): 47.43 Purge time Start: 10:30 AM Finish: 11:30 AM
from top of metal casing

Field Parameter Measurements Taken During Purging

Time AM	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. µS ~~mS~~/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
10:30		500/100		22.8	6.74	117.5	289	86.9 %	18.	47.43	
10:35				20.8	6.20	123.3	302	78.5 %	11.		
10:40				19.3	5.37	123.7	332	7.94	11.	47.43	
10:45				19.1	5.17	121.6	338	8.37	7.1		
10:50				18.9	5.12	119.8	343	8.27	5.8	47.43	
10:55				18.9	5.09	118.6	340	9.30	4.8		
11:00				19.0	5.07	117.9	343	8.66	4.4	47.43	
11:05				18.8	5.08	117.8	344	8.67	3.9		
11:10				18.8	5.08	117.2	341	8.99	3.9	47.43	
11:15				18.7	5.07	116.9	343	8.86	4.0		
11:20				18.8	5.07	116.4	343	9.05	3.5	47.43	
11:25				18.8	5.06	116.4	342	8.77	3.4		
11:30				18.8	5.06	116.0	343	8.82	3.2	47.43	

Sample Condition Color: clear Odor: ✓ Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 0

Comments: 10:30 & 10:35 AM DO recorded as %

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 73 D-2
Date: 7-7-04 Sampled By: PP
Sampling Time: 1:25pm Recorded By: PP
Weather: Sunny 84° Coded Replicate No.: RES-070704

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 532 Bottom 552
Sounded Depth (ft bmp): 552 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 43.33 Purge time Start: 12:25pm Finish: 1:25pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. µS/cm (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:25 pm		500 pp		25.4	5.30	117.1	313	8.23	3.2	43.33	
12:30				22.7	5.38	116.4	314	8.18	2.7		
12:35				20.8	5.32	116.7	318	6.61	2.7	43.35	
12:40				20.2	5.20	116.6	322	5.40	2.5		
12:45				19.9	5.13	113.6	322	6.13	2.4	43.35	
12:50				19.6	5.11	110.0	321	6.84	2.4		
12:55				19.6	5.10	110.0	323	6.86	2.4	43.33	
1:00				19.4	5.10	109.6	321	6.57	2.3		
1:05				19.4	5.10	109.4	322	7.03	2.6	43.35	
1:10				19.3	5.10	108.9	321	6.63	2.3		
1:15				19.2	5.10	108.5	322	6.71	2.2	43.35	
1:20				19.2	5.10	108.5	321	7.18	2.4		
1:25				19.2	5.10	108.1	320	6.80	2.2		

Sample Condition Color: clear Odor: — Appearance: Clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At Wellhead 0

Comments: GM 73 D-2 is Rep-070704

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 | Task: 0000 2 | Well ID: GM 74 I

Date: 7/6/04 | Sampled By: PP

Sampling Time: 1:51 pm | Recorded By: PP

Weather: Light Breeze, Partly Cloudy 80° | Coded Replicate No.: — N/A

Instrument Identification

Water Quality Meter(s): / | Serial #:

Purging Information

Casing Material: PVC | Purge Method: Dedicated Bladder / Low Flow

Casing Diameter: 4" | Screen Interval (ft bmp): Top 94 Bottom 114

Sounded Depth (ft bmp): 114 ~~NMA~~ | Pump Intake Depth (ft bmp): —

Depth to Water (ft bmp): 41.95 from top of metal casing | Purge time Start: 12:49 p.m. Finish: 1:50 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (~~mS/cm~~ uS)	ORP (mV)	DO (~~mg/L~~ %)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:50	5od00			21.6	5.46	88.7	327	105.2	2.3	41.95	
12:55				19.8	5.53	89.3	329	103.5	1.7		
1:00				18.7	5.60	88.3	329	103.8	1.6	41.95	
1:05				18.6	5.58	88.4	332	105.4	1.6		
1:10				18.5	5.60	88.2	332	103.6	1.7	41.96	
1:15				18.5	5.60	88.2	333	100.2	1.5		
1:20				18.5	5.61	88.2	333	104.2	1.5	41.97	
1:25				18.5	5.59	88.2	334	102.1	1.5		
1:30				18.6	5.58	88.0	335	100.6	1.6	41.98	
1:35				18.9	5.60	88.0	334	102.1	1.7		
1:40				18.5	5.60	88.2	337	101.6	1.6	41.98	
1:45				18.7	5.58	88.1	337	102.8	1.5		
1:50				18.6	5.59	88.0	336	102.7	1.5	41.99	

Sample Condition Color: clear | Odor: — | Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 4.0, BZO

Comments: ~~[illegible]~~

DO recorded in %

G:\APROJECT\WHCS Melville\ERD Pilot Test\lowflowsampforms.xls-LoFlo-GW-Samp

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 74 D
Date: 7/6/04 Sampled By: PB
Sampling Time: 11:27 AM Recorded By: PB
Weather: 80° partly cloudy Coded Replicate No.: — N/A

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated bladder/Low flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 295 Bottom 305
Sounded Depth (ft bmp): 305 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 48.85 Purge time Start: 10:25 AM Finish: 11:26 AM
from top of metal casing

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~(mS/cm)~~ u/s	ORP (mV)	DO ~~(mg/L)~~ o/o	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
10:26		500/DD		20.5	5.21	85.7	409	88.3	40	48.85	
10:31				18.7	5.00	75.6	409	73.4	5.5		
10:36				18.3	4.88	78.0	410	78.5	3.6	48.85	
10:41				18.3	4.88	78.4	411	81.3	2.8		
10:46				18.3	4.86	79.0	410	83.9	2.2		
10:51				18.2	4.85	79.0	408	83.8	2.1	48.85	
10:56				18.3	4.87	79.0	403	85.4	2.0		
11:01				18.3	4.87	78.8	403	82.9	2.0		
11:06				18.0	4.87	79.2	400	84.4	1.8	48.85	
11:11				18.1	4.87	79.0	400	83.4	1.7		
11:16				18.2	4.87	78.7	400	85.3	1.8	48.85	
11:21				18.0	4.86	78.7	397	84.0	1.9		
11:26				18.0	4.86	78.8	397	83.0	1.8	48.85	

Sample Condition Color: clear Odor: — Appearance: clear
Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading At wellhead 0
Comments Pulse has air in it
DO recorded in o/o

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY 00134 8.0404 Task: 00002 Well ID: GM 74D-2
Date: 7/6/04 Sampled By: PP
Sampling Time: 3:55 pm Recorded By: PP
Weather: 83° partly cloudy Coded Replicate No.: — N/A
Light Breeze

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder/Low flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 542 Bottom 562
Sounded Depth (ft bmp): 562 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 57.53 (From top of monitoring casing) Purge time Start: 2:54 pm Finish: 3:54 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~(mS/cm)~~ µS	ORP (mV)	DO ~~(mg/L)~~ %	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:55	500/00			23.4	5.57	70.7	315	103.6	1.7	57.53	
3:00				19.6	5.18	69.2	324	27.5	1.3		
3:05				18.9	5.16	70.2	318	18.8	1.5	57.50	
3:10				18.8	5.27	71.5	315	29.1	1.5		
3:15				18.6	5.23	67.8	316	41.7	1.7	57.52	
3:20				18.3	5.19	66.9	316	38.3	1.8		
3:25				18.6	5.17	65.9	318	41.7	1.4	57.53	
3:30				18.5	5.16	65.7	317	42.0	1.8		
3:35				18.5	5.14	66.0	317	45.2	1.6	57.53	
3:40				18.2	5.14	66.2	318	47.4	1.6		
3:45				18.3	5.12	66.4	319	47.8	1.8	57.53	
3:50				18.2	5.13	66.6	315	45.4	1.5		

Sample Condition Color: clear Odor: — Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading At wellhead .20 BZO

Comments DO recorded in %

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: M001348.0404 Task: 00002 Well ID: GM-75D2
Date: 7-16-04 Sampled By: GW PP
Sampling Time: 10:17 AM Recorded By: PP
Weather: Sunny 75° Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): — Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 505 Bottom 525
Sounded Depth (ft bmp): 525 Pump Intake Depth (ft bmp): —
Depth to Water (ft bmp): 38.75 Purge time Start: 9:17 AM Finish: 10:17 AM

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. µS (~~mS/cm~~)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
9:17		CC		18.7	5.62	165.9	232	5.09		38.75	
9:22				17.1	4.99	161.0	251	5.47			
9:27				16.8	4.72	154.3	255	6.76			
9:32				16.8	4.59	151.5	263	7.75		38.74	
9:37				16.8	4.57	151.0	265	7.50			
9:42				17.0	4.59	149.8	267	7.71		38.74	
9:47				17.0	4.59	149.6	270	7.73			
9:52				17.1	4.62	149.1	270	7.81		38.74	
9:57				17.0	4.64	149.1	271	7.82			
10:02				17.0	4.65	148.8	273	7.78			
10:07				17.0	4.65	148.4	273	7.87		38.74	
10:12				17.0	4.70	148.3	274	7.64			
10:17				17.2	4.70	148.1	274	7.88	16.0		

Sample Condition Color: — Odor: — Appearance: —
Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 0

Comments: —

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY 001348.0404.00002 | Page 1 of 1

Site Location: BETHP AGK NY | Date 7-2-04

Site/Well No. 6M-78S | Replicate No. N/A | Code No.

Weather: Sunny 90° | Sampling Time: Begin | End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	70
Depth to Water (ft bmp)	44.79
Water-Level Elevation (ft)	
Water Column in Well (ft)	25.21
Casing Diameter/Type	4"(0.65)
Gallons in Well	16.38 x3
Gallons Pumped/Bailed Prior to Sampling	49.15
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1:12 end
Pumping Rate (gpm)	Q=2 T=25 IV=8
Evacuation Method	Non-dedicated submersible pump

Field Parameters

Field Parameters	I	IJ	2J	3J
Color	—	—	—	Colorless
Odor	—	—	—	None
Appearance	—	—	—	Clear
pH (s.u.)	6.04	6.08	5.97	5.86
Conductivity (~~mS/cm~~) (µmhos/cm)	263	298	295	304
Turbidity (NTU)	50	210	37	11
Temperature (°C)	19.3	[illegible]	18.5	19.8
Dissolved Oxygen (mg/L)		18.4		
~~TDS~~ Salinity (%)	1.12	1:20	1:28	1:37

Sampling Method

Remarks: PID reading at wellhead 0 BZ 0

Constituents Sampled	Container Description	Number	Preservative
[redacted] See COC	[redacted]		
[redacted]			

Sampling Personnel: GWPP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY 001348.0404 Task: 00002 Well ID: Gm-78I
Date: 7-2-04 Sampled By: GW PP
Sampling Time: 2:57pm Recorded By: PP
Weather: Sunny 90° Coded Replicate No.: — N/A

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Low flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 90 Bottom 110
Sounded Depth (ft bmp): 110 Pump Intake Depth (ft bmp): 10' off Bottom
Depth to Water (ft bmp): 45.08 Purge time Start: 2:10pm Finish: 2:56pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. µS (~~mS/cm~~)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:11				18.8	5.89	197.9	358	6.79	5.5	45.08	
2:16				19.6	5.87	199.1	361	6.52	4.5		
2:21				19.8	5.87	197.5	353	6.33	2.7	45.08	
2:26				19.9	5.88	197.2	350	6.57	2.5	~~45.08~~	
2:31				19.7	5.88	197.1	344	6.42	2.0	45.10	
2:36				19.9	5.88	196.9	341	6.60	1.7		
2:41				19.7	5.88	196.6	338	6.59	1.6	45.09	
2:46				19.8	5.89	197.0	336	6.52	1.7		
2:51				19.9	5.89	196.9	333	6.17	1.4	45.09	
2:56				19.9	5.89	196.4	330	6.18	1.5		

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
SEE COC			

PID Reading: 0

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: N400134B.0404 Task: 0002 Well ID: GM-79I
Date: 7-8-04 Sampled By: PP
Sampling Time: 2:13 pm Recorded By: PP
Weather: Sunny 90° Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 170 Bottom 180
Sounded Depth (ft bmp): 180 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 43.85 Purge time Start: 1:12pm Finish: 2:12 pm
From top of well casing

Field Parameter Measurements Taken During Purging

Time	Minutes	Rate	Volume	Temp	pH	Spec. Cond.	ORP	DO	Turbidity	Depth to Water	Comments
pm	Elapsed	(mL/min)	Purged	(°C)	(SI Units)	(mS/cm)	(mV)	(mg/L)	(NTU)	(ft bmp)	
1:12		500/pp		20.5	5.20	95.6	308	8.36	1.7	43.85	
1:17				19.2	5.18	98.1	314	8.46	1.7		
1:22				17.0	5.18	101.6	322	8.37	2.1	43.86	
1:27				16.5	5.18	104.1	321	8.95	2.8		
1:32				16.3	5.18	103.9	330	8.72	3.1	43.86	
1:37				16.3	5.18	103.7	336	8.84	2.7		
1:42				16.4	5.18	103.1	331	8.87	2.2	43.87	
1:47				16.4	5.17	102.9	341	8.88	1.9		
1:52				16.5	5.16	102.3	341	8.91	1.9	43.88	
1:57				16.4	5.16	102.4	347	8.84	1.9		
2:02				16.4	5.18	102.2	343	8.98	1.7	43.88	
2:07				16.4	5.16	102.2	349	9.22	1.6		
2:12				16.6	5.17	102.1	351	8.93	1.6	43.88	

Sample Condition Color: clear Odor: — Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 0.1, BZ 0

Comments:

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0404 Task: 00002 Well ID: GM 79D
Date: 7-8-04 Sampled By: PB
Sampling Time: 4:04 pm Recorded By: PB
Weather: Sunny 92° Coded Replicate No.: N/A

Instrument Identification
Water Quality Meter(s): / Serial #:

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 280 Bottom 290
Sounded Depth (ft bmp): 290 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 45.43 Purge time Start: 3:04 pm Finish: 4:04 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
3:04		500/100		18.8	5.30	94.6	310	6.85	1.4	45.43	
3:09				17.0	5.17	95.0	324	5.74	1.2		
3:14				16.3	5.11	91.3	339	6.48	1.4	45.42	
3:19				16.1	5.10	90.0	345	6.55	1.3		
3:24				16.1	5.10	90.4	350	6.63	2.2	45.42	
3:29				16.3	5.09	90.5	352	6.54	1.3		
3:34				16.2	5.09	90.9	352	6.61	1.4	45.42	
3:39				16.2	5.09	90.9	353	6.36	1.4		
3:44				16.1	5.09	91.1	354	6.63	1.3	45.41	
3:49				16.2	5.09	91.1	355	6.60	1.2		
3:54				16.2	5.09	91.0	354	6.50	1.4	45.41	
3:59				16.2	5.10	91.2	355	6.51	1.2		
4:04				16.4	5.08	91.4	355	6.55	1.2		

Sample Condition Color: clear Odor: — Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC	clear		

PID Reading: B2 0

Comments:

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage NY | Date: 6-29-04

Site/Well No.: BPOW 1-1 | Replicate No.: N/A | Code No.:

Weather: Sunny | Sampling Time: Begin ~~11:30~~ 11:55 AM | End 11:56 AM

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	241
Depth to ~~Water~~ PACKER (ft bmp)	~~169~~ 169
Water-Level Elevation (ft)	/
Water Column in Well (ft)	72
Casing Diameter/Type	4" (0.65)
Gallons in Well	46.8 x3
Gallons Pumped/Bailed Prior to Sampling	140.
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 11:00 AM end 11:55 AM
Pumping Rate (gpm)	
Evacuation Method	Dedicated submersible pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	clear	clear	clear	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	4.62	4.77	4.85	4.77
Conductivity ~~(mS/cm)~~ (µmhos/cm)	194.4	239	252	253
Turbidity (NTU)				
Temperature (°C)	17.2	14.6	16.4	15.7
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ Depth to water	31.25	30.93	30.94	30.89
Sampling Method				

Remarks: Depth to water 31.25

169 - 31.25 = 137.75 (0.43) 59.23 + 60 = 120

~~Inflate~~ PACKER TO 120PSI

Constituents Sampled	Container Description	Number	Preservative
See COC	Note: well vault flooded. Water at exact level of top of well		
	Note: pH meter not working		
Sampling Personnel	GL PP		

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No.: NY001348.0404.00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 6-29-04

Site/Well No.: BPOW1-2 | Replicate No.: N/A | Code No.:

Weather: Sunny | Sampling Time: Begin: | End:

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	~~289~~ 335
Depth to ~~Water~~ packer (ft bmp)	294
Water-Level Elevation (ft)	/
Water Column in Well (ft)	41
Casing Diameter/Type	4" (0.65)
Gallons in Well	26.65 x 3
Gallons Pumped/Bailed Prior to Sampling	80.00
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	Dedicated submersible Pump

Field Parameters

	I	1V	2V	3V
Color	clear	cloudy	cloudy	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	4.66	4.68	5.61	5.29
Conductivity ~~(mS/cm)~~ (µmhos/cm)	56.9	47.4	58.5	58.0
Turbidity (NTU)	~~Clear~~	~~Mud~~		
Temperature (°C)	20.1	15.0	13.5	14.1
Dissolved Oxygen (mg/L)				
DTW ~~Salinity (%)~~	33.69	33.98	34.02	33.95
Sampling Method				

Remarks: DTW 33.69

294 - 33.69 = 260 (.43) = 112 + 50 = 170

~~INFLATED~~ TO 180

Constituents Sampled	Container Description	Number	Preservative
See COC			

Note: Increased packer pressure to 200 psi

Note: pH meter not working

Sampling Personnel: GW/BP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 6-29-04

Site/Well No.: BPOW 1-3 | Replicate No.: N/A | Code No.:

Weather: Sunny | Sampling Time: Begin 1:40pm | End 1:41pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	419
Depth to ~~Water~~ packer (ft bmp)	344
Water-Level Elevation (ft)	/
Water Column in Well (ft)	75
Casing Diameter/Type	4" (0.65)
Gallons in Well	48.75 x3
Gallons Pumped/Bailed Prior to Sampling	146.25
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 1:00 pm end 1:40pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated submersible Pump

Field Parameters

	I	1V	2V	3V
Color	clear	clear	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	4.66	4.77	4.76	4.74
Conductivity ~~(mS/cm)~~ (µmhos/cm)	74.5	75.0	75.4	73.9
Turbidity (NTU)				
Temperature (°C)	20.2	18.7	16.6	16.3
Dissolved Oxygen (mg/L)				
Depth to water ~~Salinity (%)~~	32.88	33.9	33.30	

Sampling Method:

Remarks: DTW 32.88

344 - 32.88 = 311.12 (.43) = 133 + 50 = 183 psi

Constituents Sampled	Container Description	Number	Preservative
See COC	Note: Increased packer pressure to 200psi		
	Note: pH meter not working		
Sampling Personnel	GW/BP		

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop - Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 6/29/04

Site/Well No.: BPOW 2-1 | Replicate No.: — | Code No.:

Weather: Sunny | Sampling Time: Begin: | End: 4:40 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	400
Depth to Water (ft bmp)	309 (packer)
Water-Level Elevation (ft)	—
Water Column in Well (ft)	91
Casing Diameter/Type	4" (0.65)
Gallons in Well	59.15 x3
Gallons Pumped/Bailed Prior to Sampling	177.45
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	Dedicated Submersible Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	clear	—	—	clear
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	4.66	5.02	5.01	4.78
Conductivity ~~(mS/cm)~~ (µmhos/cm)	102.7	129.4	99.1	98.9
Turbidity (NTU)				10.
Temperature (°C)	20.1	17.3	17.0	16.0
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ DTW	23.28	23.55	23.55	

Sampling Method:

Remarks:

309 − 23.28 = 285.72 x .43 = 122.85 + 50 = 172.85 psi

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW IPP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

Water Sampling Log

Project: N-Grumman | Project No.: NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 7-23-04

Site/Well No.: OW2-1 | Replicate No.: Rep 7-23-04 | Code No.:

Weather: Overcast 86° | Sampling Time: Begin 11:40 AM | End 11:42 AM

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	400
Depth to ~~Water~~ packer (ft bmp)	310
Water-Level Elevation (ft)	
Water Column in Well (ft)	90
Casing Diameter/Type	4" (0.65)
Gallons in Well	58.5 x3
Gallons Pumped/Bailed Prior to Sampling	175.5
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 11:12 AM end 11:38 AM
Pumping Rate (gpm)	7gpm
Evacuation Method	Dedicated packer 3 volume well

Field Parameters

Field Parameters	I	1V	2V	3V
Color	Colorless	colorless	colorless	Colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	4.22	4.17	4.17	4.08
Conductivity ~~(mS/cm)~~ (µmhos/cm)	155.8	222	133.4	124.9
Turbidity (NTU)				17.0
Temperature (°C)	18.5	15.6	14.6	14.0
Dissolved Oxygen (mg/L)				
~~Salinity~~ Depth to water (%)	25.15		24.35	
Time / Sampling Method	11:12	11:29	11:32	11:38

Remarks: PSI taken off previous sampling log

Rate lowered for sampling

Constituents Sampled	Container Description	Number	Preservative
See CoC			

Sampling Personnel: GW PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY003348.0404.00002 | Page 1 of ___

Site Location: Bethpage, NY | Date: 7-27-

Site/Well No.: OW 2-1 | Replicate No.: Rep 7-27-04 | Code No.: ___

Weather: overcast 82° | Sampling Time: Begin 10:15 AM | End 13:47 PM

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	400
Depth to Water (ft bmp)	310
Water-Level Elevation (ft)	/
Water Column in Well (ft)	90
Casing Diameter/Type	4" (0.65)
Gallons in Well	58.5
Gallons Pumped/Bailed Prior to Sampling	x3 175.5
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 10:50 AM end 11:14 AM
Pumping Rate (gpm)	6gpm
Evacuation Method	Dedicated packer 3 volume well

Field Parameters

Field Parameters	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	4.74	4.13	4.09	3.97
Conductivity ~~(mS/cm)~~ (µmhos/cm)	119.7	164.2	132.5	122.7
Turbidity (NTU)	—	—	—	13.9
Temperature (°C)	17.2	14.2	13.4	13.4
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ DTW	24.65	—	23.8	23.8
~~Sampling Method~~ Time	10:50 AM	11:80 AM	11:08 AM	11:14

Remarks: DTW 24.65

PACKER PRESSURE

280 x .65 = 120 + 50 = 175

PID reading at wellhead 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 8-4-04

Site/Well No.: OW 2-1 | Replicate No.: N/A | Code No.:

Weather: Sunny 89° | Sampling Time: Begin 6:45 pm | End 6:46 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	400
Depth to ~~Water~~ Packer (ft bmp)	310
Water-Level Elevation (ft)	/
Water Column in Well (ft)	90
Casing Diameter/Type	4" (0.65) / PVC
Gallons in Well	58.5
Gallons Pumped/Bailed Prior to Sampling	x3 175.5
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin / end 6:45 pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated Packer 3 volume well

Field Parameters

Field Parameters	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	4.20	4.29	4.35	4.29
Conductivity ~~(mS/cm)~~ (µmhos/cm)	250	191.6	162.6	144.8
Turbidity (NTU)				23.5
Temperature (°C)	21.7	16.4	15.9	13.4
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ DTW	23.11			

Sampling Method:

Remarks: PID reading at wellhead 0

DTW 23.40

310 - 23.40 x .43 + 50 = 173 psi

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No.: NY001348.0404.00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 8-12-04

Site/Well No.: OW 2-1 | Replicate No.: N/A | Code No.: —

Weather: ~~Clear~~ Overcast 70° | Sampling Time: Begin 9: | End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	400
Depth to ~~Water~~ Packer (ft bmp)	310
Water-Level Elevation (ft)	—
Water Column in Well (ft)	90
Casing Diameter/Type	4" (0.65) PVC
Gallons in Well	58.5 x3
Gallons Pumped/Bailed Prior to Sampling	175.5
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin — end —
Pumping Rate (gpm)	/
Evacuation Method	Dedicated Packer 3 volume well

Field Parameters	1	1U	2S	3S
Color	Colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	4.19	4.25	4.17	4.10
Conductivity ~~(mS/cm)~~ (µmhos/cm)	165.8	185.3	156.6	153.1
Turbidity (NTU)	—	—	—	—
Temperature (°C)	19.6	16.1	15.7	15.6
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)				
Sampling Method				

Remarks: DTW 23.43 / 22.70 final

310 − 23.43 x .43 + 50 = 173 psi

MEASURED VOLUMES TO DRUM

Constituents Sampled	Container Description	Number	Preservative
see C-O-C			

Sampling Personnel: GW/KD

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP GRUMMAN | Project No. NY000348.0804.00002 | Page 1 of 1

Site Location: BETHPAGE NY | Date: 6-30-04

Site/Well No.: OW-2-2 | Replicate No.: N/A | Code No.:

Weather: Sunny 84° | Sampling Time: Begin 5:17pm | End 5:19pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	495
Depth to ~~Water~~ Packer (ft bmp)	419
Water-Level Elevation (ft)	—
Water Column in Well (ft)	76
Casing Diameter/Type	4" (0.65)
Gallons in Well	49.40 x3
Gallons Pumped/Bailed Prior to Sampling	148.20
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 4:55pm end 5:17
Pumping Rate (gpm)	
Evacuation Method	Dedicated Sub. pump

Field Parameters

Field Parameters	I	1J	2J	3J
Color	clear	clear	clear	clear
Odor	-	-	-	-
Appearance	-	-	-	-
pH (s.u.)	5.56	5.68	5.52	5.63
Conductivity ~~(mS/cm)~~ (µmhos/cm)	61.2	60.2	59.3	60.1
Turbidity (NTU)				
Temperature (°C)	19.0	19.1	18.4	17.8
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ Depth to water	26.95	26.94	28.05	
Sampling Method				
Remarks				

DTW = 26.95

419 - 26.95 = 392 (.43) = 169 + 50 = 220 psi

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GWBB

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project	N-GRUMMAN	Project No.	NY001348.0404.00002	Page	1 of 1
Site Location	BETHPAGE NY			Date	6-28-04
Site/Well No.	BPOW 3-1	Replicate No.	N/A	Code No.	
Weather	Sunny	Sampling Time:	Begin ~~10:30 AM~~ 1:10 PM	End	1:10 pm

Evacuation Data	
Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	516
Depth to ~~Water~~ PACKER (ft bmp)	414
Water-Level Elevation (ft)	—
Water Column in Well (ft)	102
Casing Diameter/Type	4" (SS)
Gallons in Well	66.3 x 3
Gallons Pumped/Bailed Prior to Sampling	198
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 11:30 AM end 1:10 pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated submersible Pump

Field Parameters	I	1V	2V	3V
Color	clear	—	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	5.39	4.67	4.57	4.30
Conductivity ~~(mS/cm)~~ (µmhos/cm)	177.8	149.2	139.8	136.7
Turbidity (NTU)				
Temperature (°C)	18.0	16.6	16.6	16.9
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ DTW	29.8			29.3
Sampling Method				

Remarks: Depth to water = 29.8
414-30 = 384 = 165 + 50 = 215
PACKER INFLATE TO 220 psi

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

197.9G

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 6-28-04

Site/Well No.: BPOW 3-2 | Replicate No.: N/A | Code No.:

Weather: Sunny | Sampling Time: Begin ~~1:00pm~~ 3:00pm End 3:01pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	647
Depth to ~~Water~~ Packer (ft bmp)	503
Water-Level Elevation (ft)	—
Water Column in Well (ft)	144
Casing Diameter/Type	4" ~~PVC~~ (0.65)
Gallons in Well	93.6 x 3
Gallons Pumped/Bailed Prior to Sampling	280
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1:30 pm end 3:00pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated Submersible Pump

Field Parameters

Field Parameters	I	1J	2J	3J
Color	clear	clear	clear	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	5.48	6.11	6.37	5.71
Conductivity ~~(mS/cm)~~ (µmhos/cm)	173.4	168.4	76.4	63.2
Turbidity (NTU)				
Temperature (°C)	16.4	16.3	18.3	17.5
Dissolved Oxygen (mg/L) ~~Salinity (%)~~ DTW	31.78	31.80	30.65	30.14

Sampling Method:

Remarks:

DTW-31.78'

PACKER PRESSURE 260 PSI

503-31.47'(43)202 + 50 = 252 PSI

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project	N- GRUMMAN	Project No.	NY001348 0404.0002	Page	1 of 1
Site Location	Bethpage, NY			Date	6-30-04
Site/Well No.	OW4-1	Replicate No.	N/A	Code No.	
Weather	Sunny 84°	Sampling Time:	Begin 3:57pm	End	3:59pm

Evacuation Data		
Measuring Point	TOC	
MP Elevation (ft)	/	
Land Surface Elevation (ft)	STANDPIPE	SCREEN
Sounded Well Depth (ft bmp)	652	652
Depth to ~~Water~~ packer (ft bmp)	503	692
Water-Level Elevation (ft)	149.	
Water Column in Well (ft)	149	40
Casing Diameter/Type	4 (.65)	2" (.16)
Gallons in Well	96x3=290	6.4x3=19.2
Gallons Pumped/Bailed Prior to Sampling	309.2	
Sample Pump Intake Setting (ft bmp)	/	
Purge Time	begin 2:38pm	end 3:57pm
Pumping Rate (gpm)		
Evacuation Method	Dedicated submersible Pump	

Field Parameters	I	1V	2V	3V
Color	clearish	—	clearish	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	6.72	—	6.76	6.67
Conductivity ~~(mS/cm)~~ (µmhos/cm)	68.2	—	57.4	50.8
Turbidity (NTU)				
Temperature (°C)	18.6	—	20.8	17.8
Dissolved Oxygen (mg/L)				
Depth to water ~~Salinity (%)~~	32.23	—	32.95	—
Sampling Method				

Remarks

DTW = 32.23

503. - 32.23 = 470.77 (.43) 202+50

252 PSI

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel GWPP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	mililiter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No: NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 6-30-04

Site/Well No.: RPOW 4-2 | Replicate No.: N/A | Code No.:

Weather: Sunny 82° | Sampling Time: Begin 1630 | End 1:39 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	~~692~~ 764
Depth to water (ft bmp)	~~503~~ ~~503~~ 503
Water-Level Elevation (ft)	/
Water Column in Well (ft)	~~189~~ 261
Casing Diameter/Type	4" (0.65)
Gallons in Well	~~122.85~~ 169.65 x 3
Gallons Pumped/Bailed Prior to Sampling	~~366.55~~ 508
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 10:50 am end 1:30 pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated Sub pump

Field Parameters

	1 V	1 V	2 V	3 V
Color	clear	light Brown	clearish	clear
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	5.95	4.83	5.62	5.46
Conductivity ~~(mS/cm)~~ (µmhos/cm)	42.6	104.9	43.7	36.6
Turbidity (NTU)				[illegible]
Temperature (°C)	17.7	18.5	17.5	15.7
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ Depth to water	31.89	30.05	30.05	30.05
Sampling Method				

Remarks: DTW 31.89

503 - 31.85 = 471.1 (.43) = 202 + 50.25 psi

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GL/BP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project [redacted] Grumman | Project No. NY001348.0404.0000 | Page 1 of 1

Site Location Bethpage, NY | Date 7-16-04

Site/Well No. N10631 | Replicate No. N/A | Code No.

Weather Partly cloudy 88° | Sampling Time: Begin ~~11:24~~ AM | End 11:27 AM

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67.00
Depth to Water (ft bmp)	42.38
Water-Level Elevation (ft)	—
Water Column in Well (ft)	24.62
Casing Diameter/Type	2" (0.16) / steel
Gallons in Well	3.94 x3
Gallons Pumped/Bailed Prior to Sampling	11.8
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 11:12 end 11:24
Pumping Rate (gpm)	Q=1 T=12 TV=4
Evacuation Method	(3 SWV) non-dedicated submersible pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	—	—	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	5.87	5.99	6.11	6.16
Conductivity ~~(mS/cm)~~ (µmhos/cm)	175.8	178.8	174.8	174.9
Turbidity (NTU)	Greater than 200	16.2	9.88	8.68
Temperature (°C)	18.9	17.0	17.2	17.3
Dissolved Oxygen (mg/L)				
~~Salinity~~ Time (%)	11:12	11:16	16:20	11:24

Sampling Method

Remarks PID reading at wellhead 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel GWPP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N-Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 7-2-04

Site/Well No.: GP-1 | Replicate No.: N/A | Code No.:

Weather: Sunny 87° | Sampling Time: Begin 10:55 AM | End:

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	570
Depth to Water (ft bmp)	/
Water-Level Elevation (ft)	/
Water Column in Well (ft)	/
Casing Diameter/Type	12"
Gallons in Well	/
Gallons Pumped/Bailed Prior to Sampling	/
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	

Field Parameters

Color	
Odor	
Appearance	
pH (s.u.)	
Conductivity (mS/cm)	
(µmhos/cm)	
Turbidity (NTU)	
Temperature (°C)	16.7
Dissolved Oxygen (mg/L)	8.97
Salinity (%)	
Sampling Method	
Remarks	

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N- Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 7-2-04

Site/Well No.: ONCT -2 | Replicate No.: N/A | Code No.:

Weather: Sunny 87° | Sampling Time: Begin 10:40 AM | End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	570
Depth to Water (ft bmp)	/
Water-Level Elevation (ft)	/
Water Column in Well (ft)	/
Casing Diameter/Type	18/12"
Gallons in Well	/
Gallons Pumped/Bailed Prior to Sampling	/
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	

Field Parameters

Color	
Odor	
Appearance	
pH (s.u.)	
Conductivity (mS/cm)	
(µmhos/cm)	
Turbidity (NTU)	
Temperature (°C)	14.1
Dissolved Oxygen (mg/L)	7.82
Salinity (%)	
Sampling Method	
Remarks	

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N- Grumman | Project No. NY001348.0404.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date 7-2-04

Site/Well No. ONCT -3 | Replicate No. N/A | Code No.

Weather: Sunny 87° | Sampling Time: Begin 11:05 AM | End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	617
Depth to Water (ft bmp)	
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	18/12"
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	

Field Parameters

Color	
Odor	
Appearance	
pH (s.u.)	
Conductivity (mS/cm)	
(µmhos/cm)	
Turbidity (NTU)	
Temperature (°C)	14.6
Dissolved Oxygen (mg/L)	8.55
Salinity (%)	
Sampling Method	
Remarks	

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW/PP

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Appendix C

Chain of Custody Records

ARCADIS

Laboratory Task Order No./P.O. No. ____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001348.0013.0000Z

Project Location BETHPAGE NY

Laboratory SEVERN-TRENT SHELTON

Project Manager DAVE STERN

Sampler(s)/Affiliation G. W. KH.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 502.2 (NWD)						Remarks	Total
OW-7-2	L			3							3
TB-5-27-04				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 6

Relinquished by: G.W.	Organization: ARCADIS	Date 5/27/04	Time 1:00	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: ____

Delivery Method: ☐ In Person ☐ Common Carrier ____ (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001348.0404 00002

Project Location BETHPAGE NY

Laboratory SEVERN-TRENT SHELTON

Project Manager DAVE STEEN

Sampler(s)/Affiliation G.W. K.T.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 502.2 (UV)						Remarks	Total
OW-2-2	L	6.4.04		3							3
TB 6.4.04				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 6

Relinquished by:	Organization: ARCADIS	Date 6/4/04	Time 3:00	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks: RESULTS TO DAVE STEEN

Delivery Method: ☐ In Person ☒ Common Carrier FED EX ☐ Lab Courier ☐ Other _____

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name N4003/8.0404.00002

Project Location BETHPAGE NY

Laboratory SEVERN - TRENT SVERNA

Project Manager DAVE STERN

Sampler(s)/Affiliation G.W. P.P.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOC 502.2	Remarks	Total
OW-1-1	L	6.29.04		3		3
OW-1-2				3		3
OW-1-3				3		3
OW-2-1				3		3
FD-6.29.04				3		3
TB 6.29.04				3		3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 24

Relinquished by:	Organization: ARCADIS	Date 6/29/04	Time 6:00	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks:

* PLEASE USE THIS SAMPLE FOR AN MS/MSD QA/QC SAMPLE

REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☒ Common Carrier FED EX ☐ Lab Courier ☐ Other _____

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name: NY 001348.0404.00002

Project Location: BETHPAGE NY

Laboratory: SEVERN TRENT LAB (EDISON)

Project Manager: DAVE STERN

Sampler(s)/Affiliation: G.W. P.P

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOC	(UNP)					Remarks	Total
OW-3-1	W	6/28-04		2							2
OW-3-2	W	6/28-04		3							3
TB 6-28-04	W	6/28-04		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 7

					Seal Intact?
Relinquished by: [signature]	Organization: ARCADIS	Date 6/28/04	Time 4:30		
Received by: _____	Organization: _____	Date / /	Time _____		Yes No N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____		Seal Intact?
Received by: _____	Organization: _____	Date / /	Time _____		Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☒ Common Carrier FedEx SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ________

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name SOUTH FARMINGDALE W.D.

Project Location S. FARMINGDALE NY

Laboratory H2M

Project Manager GARY LOESCHE

Sampler(s)/Affiliation G.W. PP.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC? (HCl)						Remarks	Total
OW-1-1	L	6 29 04		2							2
OW-1-2	↓	↓		2							2
OW-1-3	↓	↓		2							2
PLEASE HOLD THIS SAMPLE 1 WEEK FOR THE											
RETURN OF GARY LOESCHE FROM VACATION TO DETERMINE											
IF ANALYSES IS NECESSARY											

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 6

Relinquished by: [signature]	Organization: ARCADIS	Date 6/29/04	Time 5:00	Seal Intact?
Received by: [signature]	Organization: H2M	Date 6/29/04	Time 17:00	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☐ Common Carrier ________ SPECIFY ☐ Lab Courier ☐ Other ________ SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name NY001348.0404.06002

Project Location BETHPAGE N.Y.

Laboratory SEVERN-TRENT SHELTON

Project Manager DAVE STERN

Sampler(s)/Affiliation G.W. RP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: ADMI DYE / 0C-022 (UWP)						Remarks	Total
OW-4-1	L	6-30-04		3							3
OW-4-2	↓	↓		3							3
OW-2-2	↓	↓		3							3
TB6-30-04	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 12

Relinquished by: [signature]	Organization: ARCADIS	Date 6/30/04	Time 5:45	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STERN.

Delivery Method: ☐ In Person ☒ Common Carrier FED-EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name NY001348.0404.00002
Project Location BETHPAGE NY.
Laboratory SEVERN-TRENT SHELTON
Project Manager DAVE STERN
Sampler(s)/Affiliation GW, PP.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VIAL VOC 95-1 ASP (HCl)	500ml PLASTIC TOTAL CL (HNO3)					Remarks	Total
PT 1 MW-04	L	7-1-04			1						1
PT 1 DIW-05					1						1
PT 1 MW-06					1						1
GM-15S				2	1						3
FB 7-1-04				2	1						3
TB 7-1-04				2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 11

Relinquished by: [signature]	Organization: ARCADIS	Date 7/1/04	Time 4:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☒ Common Carrier FED-EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY00B4604/04.0002

Project Location BETHPAGE NY

Laboratory SEVERN-TRENT S HELTON

Project Manager DAVE STERN

Sampler(s)/Affiliation G.W. PP.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VOA VOCs-1450 (WO)	500ml PLASTIC Cd/Cr (HNO3)	500ml PLASTIC DIS SOLVED* Cd/Cr (HNO3)				Remarks	Total
GM-17SR	L	7 2 04		2	1	1					4
GM-78S	↓	↓		2	1						3
GM-78I	↓	↓		2	1						3
FB 7.2.04	↓	↓		2	1						3
TB 7.2.04	↓	↓		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 15

Relinquished by: [signature]	Organization: ARCADIS	Date 7/2/04	Time 4:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:
* FIELD FILTERED WITH .45 MICRON FILTER
REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name NY001348.0404.00002
Project Location BETHPAGE NY
Laboratory SEVERN-TRENT SHELTON
Project Manager DAVE STERN
Sampler(s)/Affiliation G.W. PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	1L PLASTIC pH, TDS, ALK (UNP)	500 ml PLASTIC CALCIUM (HNO3)	TEMPERATURE °C	DISSOLVED OXYGEN			Remarks	Total
ONCT-2	L	7-2-04		1	1	14.1	7.82				2
ONCT-3	✓	✓		1	1	14.6	8.55				2
GP-1	✓	✓		1	1	16.7	8.97				2
	PLEASE	PERFORM	"LANGLIERS	INDEX"	ON	THESE	SAMPLES				

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 6

Relinquished by: [illegible signature]	Organization: ARCADIS	Date 7/2/04	Time 4:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

CHAIN-OF-CUSTODY RECORD

Laboratory Task Order No./P.O. No.

Project Number/Name NY001348.0404
Project Location Bethpage, NY
Laboratory STL
Project Manager David Stern
Sampler(s)/Affiliation SH/PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 mL VOA VIALS (unpres) VOC						Remarks	Total
GM-74I	L	7/6/04		2							2
GM-74D	↓	↓		2							2
GM-74DZ	↓	↓		2							2
TB 7/6/04	↓	↓		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 8

Relinquished by: [signature]	Organization: Arcadis	Date 7/6/04 (SH)	Time 1700	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☑ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name: NY001348.0404

Project Location: Bethpage, NY

Laboratory: STL / J

Project Manager: David Stern

Sampler(s)/Affiliation: SH / PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ML VOA VIAL (w/HCl) VOC						Remarks	Total
GM-74I	L	7/6/04		2							2
GM-74D				2							2
GM-74DZ				2							2
TB 7/6/04				2							2

Sample Matrix: L = Liquid, S = Solid, A = Air

Total No. of Bottles/ Containers: 8

Relinquished by: [signature]	Organization: ARCADIS	Date 7/6/04 (SH)	Time 1700	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No N/A

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☒ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name NY001348.0404

Project Location Bethpage, NY

Laboratory STL

Project Manager David Stern

Sampler(s)/Affiliation PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml VOA Vial (VOC)						Remarks	Total
GM 73 D	L	7-7-04		6							~~2~~ 6
GM-73DZ				2							2
GM-39D				2							2
GM-39DZ				2							2
~~REP-2~~				2							2
REP 7/7/04				2							2
# Use Sample GM-73D for a MS/MSD											

Total No. of Bottles/ Containers 16

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: Pat Prazonik	Organization: Arcadis	Date 7/7/04	Time 1730	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☒ Common Carrier Fed EX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ____

CHAIN-OF-CUSTODY RECORD

Project Number/Name: NYoorye.cy04
Project Location: Bethpage, NY
Laboratory: STL
Project Manager: David Stern
Sampler(s)/Affiliation: PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOA Vial (unp) VOC						Remarks	Total
GM 73 D	L	7-7-04		6							~~2~~ 6
GM-73DZ	↓	↓		2							2
GM-39D	↓	↓		2							2
GM-39DZ	↓	↓		2							2
~~REP-2~~ SH 7/7/04	↓	↓		2							2
REP 7/7/04	↓	↓		2							2

Use Sample GM-73D For a MS/MSD

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 16

Relinquished by: Pat Prezorski	Organization: Arcadis	Date 7/7/04	Time 1730	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: ____

Delivery Method: ☐ In Person ☒ Common Carrier Fed EX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. ____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001346.0401
Project Location Bethpage, NY
Laboratory STL
Project Manager David Stern
Sampler(s)/Affiliation PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOA vial Comp VOC						Remarks	Total
GM 79D	L	7-8-04		2							2
GM 79I	↓	↓		2							2
GM 21D				2							2
TB 7-8-04	↓			2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 8

Relinquished by: [illegible signature]	Organization: Arcadis	Date 7/8/04	Time 5:31p	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

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ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name: NY001348.0404

Project Location: Bethpage, NY

Laboratory: STL

Project Manager: David Stern

Sampler(s)/Affiliation: PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOA Vials (unp) VOC						Remarks	Total
GM 18D	L	7-9-04		2							2
GM 17D	↓	↓		2							2
GM 17I	↓	↓		2							2
TB 7-9-04	↓	↓		2							2
										Total No. of Bottles/ Containers	

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: Pat Prajapati	Organization: Arcadis	Date 7/9/04	Time 5:32 pm	Seal Intact?		
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No	N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?		
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No	N/A

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NY001348.0404.00002

Project Location BETHPAGE NY

Laboratory SEVERN - TRENT

Project Manager DAVE STERN

Sampler(s)/Affiliation G.W, PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOCs-1 ASP (VHO)						Remarks	Total
GM-15D	L	7-13-04		2							2
GM-15D-2	↓	↓		2							2
GM-15I	↓	↓		2							2
GM-21I	↓	↓		2							2
GM-21S	↓	↓		2							2
TB-7-13-04	↓	↓		2							2
FB 7-13-04	↓	↓		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers [illegible] 14

Relinquished by: [illegible signature]	Organization: ARCADIS	Date 7/13/04	Time 6:00	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

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ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name NY001348.0404.00002

Project Location BETHPAGE NY

Laboratory SEVERN. TRENT SHELTON

Project Manager DAVE STERN

Sampler(s)/Affiliation G.W. P.P

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VOA VOC 95:1450 (unp)	500ml PLASTIC Cr (HNO3)					Remarks	Total
6m 34D	L	7-14-04		2							2
6m 34D-2	↓	↓		2							2
6m-20I	↓	↓		2							2
6m-20D	↓	↓		2							2
FB-7-14-04	↓	↓		2							2
TB7-14-04	↓	↓		2							2
PT/mw-05	↓	7-14-04			1						1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 13

Relinquished by: [signature]	Organization: ARCADIS	Date 7/14/04	Time 6:00	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☐ Common Carrier ______ SPECIFY ☐ Lab Courier ☐ Other ______ SPECIFY

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ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001348.0404.00002

Project Location BETHPAGE NY

Laboratory SEVERN TRENT SHELTON

Project Manager DAVE STEIN

Sampler(s)/Affiliation G.W. P.P.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VIAL VOC 95-1ASP (HCl)	500ml PLASTIC TOTAL Cd/Cr (HNO3)	500ml PLASTIC DISSOLVED Cd/Cr (HNO3)				Remarks	Total
GM-75D-2	L	7-16-04		2							2
GM-33D-2	↓	↓		2							2
GM-18S	↓	↓		2	1	1					4
N-10631	↓	↓		2	1	1					4
MW-3R	↓	↓		2	1	1					4
FB-7-16-04	↓	↓		2	1						3
TB-7-16-04	↓	↓		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 21

Relinquished by: G.W.	Organization: ARCADIS	Date 7/16/04	Time 4:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STEIN

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name: NY001548.0404.00001

Project Location: Bethpage

Laboratory: STL VT

Project Manager: David Stern

Sampler(s)/Affiliation: Jason Hoar/ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: TO-14A Modified + 10 TICs						Remarks	Total
RVPGAC Influent	A	7/21/04 8:45							Can # 6465	Initial vacuum -26.7 Final vacuum +0.1	1
RVPGAC Influent	A	7/21/04 8:50							Can # 6684	Initial vacuum -30.0 Final vacuum -0.4	1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 2

Relinquished by:	Organization: ARCADIS	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks: Standard turnaround time. Thank you

Delivery Method: ☐ In Person ☒ Common Carrier STL ☐ Lab Courier ☐ Other _____

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name: BETHPAGE WATER
Project Location: BETHPAGE NY
Laboratory: H2M
Project Manager: MALLOY
Sampler(s)/Affiliation: G.W. ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOCs						Remarks	Total
GM-35D2	L	7/23/07		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 2

Relinquished by: [illegible]	Organization: ARCADIS	Date 7/23/07	Time [illegible]	Seal Intact?
Received by: [illegible]	Organization: H2M	Date / /	Time [illegible]	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☐ Common Carrier ______ (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

CHAIN-OF-CUSTODY RECORD

Laboratory Task Order No./P.O. No. ______ Page ____ of ____

Project Number/Name: NY001345.0404.00002

Project Location: Bethpage New York

Laboratory: Severn-Trent Shelton

Project Manager: Dave Stern

Sampler(s)/Affiliation: G.W. PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOA vial (unp) VOC 95-1/ASP						Remarks	Total
GM18I	L	7-23-04		2							2
TB 7-23-04	↓	↓		2							2
OW 2-1	↓	↓		2							2
Rep 7-23-04	↓	↓		2							2
GM35D2	↓	↓		6							6

* USE Sample GM35D2 for a MS/MSD

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 14

Relinquished by: [illegible]	Organization: Arcadis	Date 7/23/04	Time [illegible]	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: Report to Dave Stern

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name: NY001348.0404.00002

Project Location: Bethpage, NY

Laboratory: Severn-Trent Sheldon

Project Manager: Dave Stern

Sampler(s)/Affiliation: GW. PP.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml vial VOC 502.2 (unp)	40 ml vial VOC 95-1 ASP (unp)					Remarks	Total
OW 2-1	L	7-27-04		2							2
GM 18 I					2						2
Rep 7-27-04				2							2
TB 7-27-04				1							1
TB 7-27-04					1						1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 8

Relinquished by: Pat Profumo	Organization: Arcadis	Date 7/27/04	Time 4:45	Seal Intact?		
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No	N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?		
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No	N/A

Special Instructions/Remarks: Report to Dave Stern

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

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ARCADIS

CHAIN-OF-CUSTODY RECORD

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Laboratory Task Order No./P.O. No. ____

Project Number/Name NY001348.0404.00002

Project Location BETHPAGE NY

Laboratory SEVERN-TRENT SHELTON

Project Manager DAVE STERN

Sampler(s)/Affiliation G.W. R.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOC 502.2						Remarks	Total
GW-2-1	L	8.4.04		2							2
TB-8-4-04	✓			2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 4

Relinquished by: [signature]	Organization: ARCADIS	Date 8/4/04	Time 6:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☒ Common Carrier FED-EX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ______ **CHAIN-OF-CUSTODY RECORD** Page ___ of ___

Project Number/Name NY001318.0404.00002
Project Location BETHPAGE NY
Laboratory SEVERN-TRENT, SHELTON
Project Manager DAVE STERN
Sampler(s)/Affiliation G.W. KD

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 502.2 (VOC)						Remarks	Total
OW-2-1	L	8-12-04		2							2
TB 8-12-04	✓	✓		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 4

Relinquished by: [signature]	Organization: ARCADIS	Date 8/12/04	Time 10:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO DAVE STERN

Delivery Method: ☐ In Person ☑ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ______