First Quarter 2005 Groundwater Monitoring Report

Operable Unit 2
Northrop Grumman Corporation,
Bethpage, New York
NYSDEC Site #1-30-003A

ARCADIS
Infrastructure, environment, buildings

ARCADIS

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First Quarter 2005
Groundwater Monitoring
Report

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Corporation,
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NYSDEC Site #1-30-003A

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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), as modified in June 2004 (ARCADIS G&M Inc. 2004a), to meet the remedial objectives set forth in the March 2001 Record of Decision (ROD) (NYSDEC 2001).

Overall, this report describes the operational and effectiveness monitoring of the on-site portion of the OU2 groundwater remedy for the period from December 30, 2004 through March 29, 2005, which is referred to in this report as the First Quarter 2005 report period. The Annual Report, which is issued after the completion of the calendar year, includes an 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. 2003a). The contents of the OM&M reports, as well as the findings and conclusions made, will continue to be re-evaluated in future reports as additional data become available.

2. Monitoring Program

The results obtained from monitoring activities conducted for this report period are provided in Tables 1 through 13 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).

Except as described on Tables 1 through 13 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. 2003a) and the NYSDEC-approved OU2 Groundwater Monitoring Plan (ARCADIS Geraghty & Miller, Inc. 2001), as modified in June 2004 (ARCADIS G&M, Inc. 2004a).

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 (water-level measurement logs); Appendix B (groundwater sampling logs); and Appendix C (chain-of-custody records).

3. Remedial System Operational Monitoring

This section of the report summarizes the routine operational monitoring tasks conducted during the First Quarter 2005 for the on-site portion of the OU2 groundwater remedy, which included the following: (1) treatment system effluent water quality monitoring, remedial well water quality monitoring, treatment systems efficiency monitoring and determination of volatile organic compound (VOC) mass removal from the aquifer, and (2) monitoring of remedial well pumpage and treatment systems treated effluent discharge to on-site recharge basins.

Also summarized in this report section are troubleshooting and maintenance activities performed during the First Quarter 2005 by ARCADIS and NGC on Remedial Well GP-3.

3.1 Water Quality, Treatment Efficiencies, and Mass Removal

Tables 1 and 9 provide the total VOC (TVOC) concentrations detected in the OU2 remedial wells. Table 1 provides TVOC concentrations and TVOC mass removed by the remedial wells, and treatment efficiencies for the GP-1 and ONCT treatment system air strippers.

TVOC concentrations from the remedial wells ranged from 113 micrograms per liter (µg/L) (ONCT-3) to 2742 µg/L (GP-3); a total of approximately 1,560 pounds of VOCs were removed from the aquifer by the remedial wells; and the efficiencies of the ONCT and GP-1 treatment systems have remained above 99 percent.

3.2 Remedial System Pumpage and Discharge

Table 1 summarizes the pumpage of the remedial wells (with comparison to design criteria) for the First Quarter 2005. Remedial Wells GP-1, ONCT-1, ONCT-2, and ONCT-3 pumped approximately 448 million gallons (MG) of groundwater, which is equivalent to 103 percent of the design remedial well pumpage volume of 437 MG. As of First Quarter 2005, Remedial Well GP-3 does not have a design pumping rate; the design pumping rate is currently being determined and will be documented in a subsequent report. Based on weekly measurements collected by ARCADIS, the South Recharge Basins collectively received the treated effluent discharge from the ONCT

remedial system (approximately 2,461 gallons per minute [gpm]), incidental stormwater runoff, along with approximately 572 gpm from the GP-1 remedial system, for a total discharge of approximately 3,033 gpm. NGC directed approximately 400 gpm of treated effluent from the GP-1 remedial system to the adjacent Calpine facility for consumptive use this round (Wolfert, 2004). The West Recharge Basins received an average of approximately 108 gpm from the GP-1 remedial system (i.e. the balance of the treated effluent from the GP-1 remedial system).

3.3 Remedial Wells Specific Capacities

Table 2 summarizes the water-level measurement data, corresponding instantaneous pumping rates, and the calculated drawdowns and specific capacities for the OU2 remedial wells for the First Quarter 2005. Based on the data presented herein, the specific capacities of all the remedial wells exceeded the minimum values needed to maintain the design pumping rates.

3.4 Troubleshooting/Maintenance Activities

On November 28, 2004, Well GP-3 was shut down to remove the submersible pump, assess the condition of the well, and redevelop the well to allow for an increase in pumping rate to approximately 700 gpm. The Well GP-3 rehabilitation and redevelopment extended through the end of the First Quarter 2005.

After removal of the submersible pump, gamma, video and caliper logs of the well were performed. The gamma and video logs showed a predominantly clay and/or silty zone located in the screen zone, from 519 to 543 feet below land surface (ft bls). The subject bottom 25-foot section of screen was sealed off using a K-Packer, and the well was then redeveloped using a combination of air and water jetting and surging. Once development was completed, a "final" video log was performed and a short-duration pump test was performed to verify that the well could be pumped at the proposed new rate of 700 gpm to assist in design of the permanent pump. In March 2005, the well returned to operation at 400 gpm until the permanent pump is received and installed.

During the First Quarter 2005, Well ONCT-1 pumped at a higher than normal level (actual pumping rate of 1,141 gpm compared with a design pumping rate of 1,000 pgm) as a best effort to maintain the remedial capture zone while Well GP-3 was not operational.

Other shorter term periods of well/system downtime during the First Quarter 2005 (for both the GP and ONCT Systems) were due to short-term repairs and temporary power outages.

4. Groundwater Flow

This report section describes the results of hydraulic monitoring performed during the First Quarter 2005 (i.e., measured on March 15, 2005). The evaluation of the hydraulic data was performed using methods described in previous quarterly reports.

4.1 Shallow and Intermediate Zones

The water-level measurement data for the First Quarter 2005 are provided in Table 3. Vertical hydraulic gradients calculated for select well pairs and a comparison to model-predicted gradients (see Appendix B of the OU2 Feasibility Study; ARCADIS Geraghty & Miller 2000) are provided in Table 4. Figure 2 depicts the water-table configuration and groundwater flow directions, and Figure 3 depicts the potentiometric surface elevation and groundwater flow directions in the intermediate zone.

With the exception of Wells GM-15S/GM-15I, the vertical hydraulic gradients in shallow-intermediate well pairs are oriented downward and are close to or greater than model predicted values (Table 4). Figures 2 and 3 show the extent of the mounding of the water table and potentiometric surface in the shallow and intermediate zones, respectively, during the First Quarter 2005. The observed mounding extends around and beneath the South Recharge Basins and across the entire NGC site southern boundary. The extent of the mounding is consistent with prior rounds and is typical of the conditions that produce a hydraulic barrier to groundwater flow in the shallow and intermediate zones during normal operation of the on-site portion of the OU2 groundwater remedy.

The hydraulic data described above support the conclusion that shallow recharge at the South Recharge Basins is sufficient to maintain the hydraulic barrier to groundwater flow that continues to be effective in achieving the OU2 remedial goal of preventing the off-site migration of VOC-impacted groundwater in the shallow and intermediate zones.

4.2 Deep and D2 Zones

Vertical hydraulic gradients (see Table 4) in intermediate-deep and deep-deep2 (D2) well pairs are oriented downward and are close to or are greater than the model predicted values. These data support the conclusion that groundwater is flowing in a predominantly vertical direction in the deep zone along the NGC site southern boundary.

Figure 4 depicts the potentiometric surface elevation in the D2 zone that illustrates the cumulative capture zone formed by the combined pumpage of the OU2 remedial wells during the First Quarter 2005. The capture zone extends across the entire NGC site southern boundary and approximately 500 ft south of the NGC site in a downgradient direction.

These data are consistent with previous water-level rounds and support the conclusion that the pumpage of the remedial wells forms a hydraulic barrier to groundwater flow that continues to be effective in preventing the off-site migration of VOC-impacted groundwater in the deep and D2 zones.

4.3 Summary

Based on the data presented above, the combination of shallow recharge at the South Recharge Basins coupled with pumpage of the OU2 remedial wells in the D2 zone forms a hydraulic barrier to groundwater flow that continues to be effective in achieving the OU2 remedial goal of preventing the off-site migration of VOC-impacted groundwater.

5. Groundwater Quality

This report section describes the analytical results of the various groundwater quality monitoring activities for the First Quarter 2005 that are specified in and required under the NYSDEC-approved Groundwater Monitoring Plan (ARCADIS G&M, Inc. 2001), as modified in the NYSDEC-approved June 13, 2004 petition (ARCADIS G&M, Inc. 2004a), and the PWSCP (ARCADIS G&M Inc., 2003b). Analytical results are summarized in Tables 5 through 13 and described in the following sections.

5.1 Volatile Organic Compounds

The evaluation of VOC concentrations is presented here 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., upgradient, along the NGC site southern boundary, and downgradient of the hydraulic barrier), (2) hydrogeologic zone (i.e., shallow, intermediate, deep, and D2 zones), and (3) NYSDEC Standards, Criteria, and Guidance Values. A discussion of the expected effect on groundwater quality from operating the on-site portion of the OU2 groundwater remedy is provided in the 2002 Annual Report (ARCADIS G&M, Inc. 2003a).

A summary of total VOCs detected in the select wells at the NGC site southern perimeter and a comparison to SCGs is provided in Table 5.

5.1.1 Shallow and Intermediate Zones

The First Quarter 2005 groundwater quality analytical results for shallow and intermediate monitoring wells are provided in Tables 6 and 7, respectively. In general, the water quality data from the shallow and intermediate wells sampled this quarter continue to support the interpretation of hydraulic data from the current and 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.

The six shallow wells (N-10631, N-10634, GM-18S, GM-21S, GM-78S and MW-03R) located at or immediately downgradient of the NGC site southern boundary exhibited no or trace VOC detections and no SCG exceedences (Tables 5 and 6).

The seven similarly located intermediate wells (N-10624, GM-18I, GM-20I, GM-21I, GM-74I, GM-78I and GM-79I) exhibited no or trace VOC detections and no exceedences of SCGs (Tables 5 and 7).

Along the NGC western boundary, Wells GM-17SR and GM-17I exhibited no detection this round (Tables 5, 6 and 7).

5.1.2 Deep Zone

In general, the water quality data from the deep wells sampled during the First Quarter 2005 continue to support the interpretation of the hydraulic data from the current and

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.

Four of the seven deep wells (GM-18D, GM-39D_A, GM-39D_B, and GM-73D) located along or upgradient of the line of remedial wells near the NGC site southern boundary (Table 8 and Figure 1), exhibited SCG exceedences. The remaining two deep wells (GM-15D, GM-17D, and GM-74D) exhibited trace VOC detections and no SCG exceedences. Based on evaluation of the hydraulic data that is depicted on Figure 4, these monitoring wells are within the capture zone of the remedial wells 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.

Three of the four deep wells (N-10627, GM-20D, and GM-21D) located at or immediately downgradient of the NGC site southern boundary (Tables 5 and 8) exhibited no or trace VOC detections and no SCG exceedences. Well GM-79D exhibited one SCG exceedence.

The remaining deep wells (GM-13D, GM-34D, GM-36D, GM-37D, GM-38D, GM-79D and HN-29D) located either upgradient or further downgradient of the hydraulic barrier exhibited TVOC concentrations ranging from 0.7 ug/L to 1,034.8 ug/L (Table 8). These data are consistent with the expected concentrations in the portion of the groundwater VOC plume in the deep zone that is not actively remediated.

5.1.3 Deep2 Zone

Groundwater monitoring data from the D2 zone are summarized in Table 9. In general, water quality data from the D2 wells sampled during the First Quarter 2005 continue to support the interpretation of hydraulic data from the current and 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.

Along the line of remedial wells near the NGC site southern boundary, total VOC concentrations were highest in Wells ONCT-1 (597.6 ug/L) and Monitoring Well GM-73D2 (322.4 ug/L), located approximately 700 ft east of Well ONCT-1 (Table 9). 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 (Table 9), but total VOC concentrations in

these areas, by comparison to Wells ONCT-1 and GM-73D2, are substantially lower and ranged from 16.5 ug/L (Well GM-74D2) to 146 ug/L (Well ONCT-2). However, based on hydraulic data depicted on Figure 4, on-site wells near 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.

Seven of the eight off-site D2 wells exhibited SCG exceedences with total VOC concentrations ranging from non-detect (Well GM-36D2) to 1,411.7 ug/L (Well GM-38D2). These data are consistent with the expected concentrations in the off-site portion of the groundwater plume in the D2 zone that is not actively remediated.

5.2 Outpost Monitoring

The complete description of the procedures to collect groundwater samples from the outpost wells and evaluate and document the results is provided in the PWSCP (ARCADIS G&M, Inc., 2003b). The results of the First Quarter 2005 outpost well monitoring round are provided in Table 10. VOCs were not detected in Outpost Wells OW1-2, OW3-1, OW3-2, OW4-1, and OW4-2 this round. Outpost Wells OW1-1, OW1-3, OW2-1 and OW2-2 exhibited one or more detections of site-related VOCs, with one SCG exceedence detected in Well OW1-1. Benzene (not site-related) was also detected in Well OW2-1, exceeding the SCG.

5.3 Vinyl Chloride Monomer

Vinyl chloride monomer (VCM) concentrations in groundwater samples collected during the First Quarter 2005 are provided in Tables 6 through 9. VCM continues to be present in Well GP-3 (200 ug/L this round) but was not detected in the other remedial wells, or other monitoring wells sampled this round. Additional groundwater monitoring of the extent of the VCM subplume and evaluation of remedial options for VCM is being performed by Oxy.

5.4 Cadmium and Chromium

The results of the quarterly monitoring of wells analyzed for cadmium and chromium (Cd/Cr) are provided in Table 11. The data indicate that Cr exceeded the SCG in four of the 14 monitoring wells sampled this round, with exceedences limited to on-site areas adjacent to former NGC Plants 1 & 2. Well MW-3R (near former NGC Plant 2) exhibited the only Cd SCG exceedence (Figure 1 and Table 11). 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 First Quarter 2005 are provided in Table 12. Because TIC data is qualitative in nature, ARCADIS will monitor the TICs; if trends develop to indicate that it is frequently present, we will petition the NYSDEC to add it to the list of constituents monitored.

5.6 QA/QC Samples and Data Validation

The results of analysis of field blanks and trip blanks are provided in Table 13.

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 6 through 13.

6. Summary and Conclusions

The findings of the OM&M activities performed during the First Quarter 2005 are summarized below.

1. The remedial system pumpage data show that the OU2 remedial wells pumped approximately 103 percent of the design volume of groundwater. Recharge basins received a collective total of 404 MG of treated water this quarter. Well GP-3 is currently undergoing re-development toward increasing the pumping rate to 700 gpm.

2. OU2 remedial well specific capacities remain above the minimum required to sustain the design pumping rates.

3. Approximately 1,560 lbs of VOCs were removed from the aquifer and treated by the on-site portion of the OU2 groundwater remedy.

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

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

6. In the shallow, intermediate and deep zones, the majority of wells located along the NGC site perimeter show trace or non-detectable concentrations of VOCs.

7. Site-related VOCs were detected in Outpost Wells OW1-1, OW1-3, OW2-1 and OW2-2.

8. Cd/Cr SCG exceedences are limited to on-site areas near former NGC Plants 1 & 2.

7. Recommendation

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

8. References

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

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.

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Table 1. Summary of Operational Data and Water Balance for the On-Site Portion of the OU2 Groundwater Remedy, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

Identification	Design Pumping/ Recharge Rate [a] (gpm)	Current Actual Average Pumping/Recharge Rate [b] (gpm)	Design Total Pumpage/Recharge (MG)	Current Actual Total Pumpage/Recharge (MG)	Current Percent of Design Pumpage/ Recharge	Current TCE Concentration (ug/L)	Current TVOC Concentration [c] ug/L	Current Estimated VOC Mass Removed [d] (lbs)
Remedial Wells			**Groundwater Removed from Aquifer**					
GP-1	1,075	1,058	139.3	135.8	97%	440	583	659
GP-3 [f]	--	--	--	--	--	2,400	2,742	--
ONCT-1	1,000	1,142	129.6	145.1	112%	570	598	723
ONCT-2	600	595	77.8	74.8	96%	130	146	91
ONCT-3	700	724	90.7	92.0	101%	86	113	87
Rounded Totals:	**3,375**	**3,519**	**437**	**448**	**103%**	--	--	**1,560**
Recharge Basins [a]			**Treated Water Recharged to Aquifer**					
West Recharge Basins	0	108	0	14.0	--	--		--
South Recharge Basins	2,231	3,033	289.1	385.2	133%	--	--	--
Rounded Totals:	**2,231**	**3,141**	**289**	**399.2**	**138%**	--	--	--
			Treated Water Sent to Calpine					
	400	400	51.8	51.3	--	--	--	--

Treatment Efficiencies

GP-1 System Air Stripping Efficiency [e] : **99.7%**
ONCT System Air Stripping Efficiency [e] : **99.7%**

see footnotes on last page

Table 1. Summary of Operational Data and Water Balance for the On-Site Portion of the OU2 Groundwater Remedy, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

(a) - Remedial well pumping rates based on computer modeling (ARCADIS Geraghty & Miller, Inc. 2000). Acceptable minimum recharge rates based on computer modeling (ARCADIS G&M, Inc. 2004b). Total recharge includes remedial well pumpage (minus pipe loss) and incidental runoff from precipitation. Current average recharge rates have been determined using the entire 90-day span of time as opposed to current average pumping rates, which account for varying amounts of downtime, as indicated below.

(b) - Actual Average Pumping Rates were calculated based on Actual Total Pumpage and hours of operation from December 30, 2004 to March 29, 2005 (90 days).

- OU2 wells were operational during the First Quarter 2005, at the following percentages: GP-1 (99%), GP-3 (0%)[(f)]; ONCT-1 (98%), ONCT-2 (97%), and ONCT-3 (98%). The Actual Average Pumping Rates are for when the wells are pumping.

(c) - The TVOC concentration for each well was calculated based on First Quarter 2005 groundwater monitoring data (Table 9).

(d) - TVOC mass removed during the First Quarter 2005 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) Air Stripping Efficiency calculated from values above and in Table 9 using the following formula:

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

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.

(f) Well GP-3 was not operational during the First Quarter due to redevelopment activities.

--	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

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Table 2. OU2 Remedial Well Performance Data, Baseline and First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

	Baseline		First Quarter 2005				
Well Identification	Static Depth to Water[1] (ft bmp)	Specific Capacity[1] (gpm/ft)	Date of Pumping and Water-Level Measurements	Pumping Depth to Water (ft bmp)	Drawdown (ft)	Instantaneous Pumping Rate[3] (gpm)	Specific Capacity (gpm/ft)
ONCT-1	44.12	44.03	3/15/2005	67.5	23.38	1,171	50.1
ONCT-2	50.15	38.09	3/28/2005	66.15	16.00	599	37.4
ONCT-3	49.13	40.12	3/15/2005	68.5	19.37	800	41.3
GP-1	55.75	28.57	3/15/2005	91	35.25	1,192	33.8
GP-3[3]	54.4	10.10	--[2]	--[2]	--[2]	--[2]	--[2]

(1) For Wells ONCT-1, ONCT-2 and ONCT-3, baseline static depth to water measurements were collected in 1997 prior to OU2 system start-up; baseline pumping depth to water and rate measurements were collected in 1999 during OU2 system operation.
For Well GP-1, baseline static depth to water and specific capacity measurements were collected in 2001, during pump replacement.
For Well GP-3, baseline static depth to water and specific capacity measurements were collected in March-April 2005, during re-development activities.

(2) Well GP-3 was not operational at the time of measurement due to re-development activities.

(3) Pumping rate collected at time of pumping depth to water measurement.

OU2	Operable Unit 2
gpm	gallons per minute
ft bmp	feet below measuring point
ft	feet
gpm/ft	gallons per minute per foot of drawdown

Table 3. Water-Level Measurement Data, March 15, 2005, Northrop Grumman Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Shallow Wells			
FW-03	124.30	57.95	66.35
N-9921	94.23	33.80	60.43
N-10597	109.85	44.03	65.82
N-10600	102.41	41.02	61.39
N-10631	103.47	38.69	64.78
N-10633	103.80	40.90	62.90
N-10634	101.20	41.27	59.93
N-10821[6]	91.58	35.98	55.60
GM-15S	109.44	46.32	63.12
GM-16SR[8]	115.86	--	--
GM-17SR	115.79	51.28	64.51
GM-18S	107.60	--	--
GM-19S	109.86	42.42	67.44
GM-21S	105.81	37.21	68.60
GM-78S	104.94	42.50	62.44
GM-79S (N-10628)	100.88	41.50	59.38
HN-24S	--	53.96	--
HN-40S[5]	116.35	50.61	65.74
HN-42S[5]	120.32	52.92	67.40
MW-3R	101.45	34.63	66.82
Intermediate Wells			
N-10624	93.61	33.37	60.24
GM-15I	109.25	46.10	63.15
GM-16I	115.81	--	--
GM-17I	115.83	51.37	64.46
GM-18I[6]	109.03	44.24	64.79
GM-19I	109.86	44.75	65.11
GM-20I	103.88	35.50	68.38
GM-21I	105.72	39.92	65.80
GM-74I	107.42	41.41	66.01
GM-78I	105.06	42.77	62.29
GM-79I	100.88	41.84	59.04
HN-24I	125.80	57.71	68.09
HN-29I	116.42	48.62	67.80
HN-40I[5]	115.91	50.45	65.46
HN-42I[5]	119.61	52.20	67.41

See notes on last page

Table 3. Water-Level Measurement Data, March 15, 2005, Northrop Grumman Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Deep Wells			
N-10627	93.70	33.83	59.87
GM-13D	113.97	48.05	65.92
GM-15D	109.84	48.43	61.41
GM-17D	115.68	52.11	63.57
GM-18D	108.88	47.02	61.86
GM-20D	103.92	38.59	65.33
GM-21D	105.66	44.13	61.53
GM-34D	71.19	16.50	54.69
GM-36D	91.63	36.43	55.20
GM-37D	97.26	40.41	56.85
GM-38D	91.75	39.32	52.43
$GM\text{-}39D_A$[3]	102.23	40.03	62.20
$GM\text{-}39D_B$[3]	102.08	43.40	58.68
GM-73D	104.87	45.44	59.43
GM-74D	107.43	46.49	60.94
GM-79D	101.25	43.02	58.23
HN-29D	115.11	48.81	66.30
Deep2 Wells			
GM-15D2	109.78	51.03	58.75
GM-33D2	106.85	51.45	55.40
GM-34D2	71.19	17.80	53.39
GM-35D2	96.28	41.16	55.12
GM-36D2	91.60	38.56	53.04
GM-37D2	97.17	40.92	56.25
GM-38D2	91.56	41.20	50.36
GM-70D2	99.58	42.46	57.12
GM-71D2	98.45	42.71	55.74
GM-73D2	104.62	47.67	56.95
GM-74D2	107.36	52.81	54.55
GM-75D2	93.63	37.04	56.59
GP-1[1]	116.78	91.00	25.78
GP-3[4]	--	--	--
ONCT-1[2]	104.10	67.50	36.60
ONCT-2[7]	110.00	66.15	43.85
ONCT-3	108.70	68.50	40.20

See notes on last page

Table 3. Water-Level Measurement Data, March 15, 2005, Northrop Grumman Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Outpost Wells			
BPOW1-1	73.65	29.72	43.93
BPOW1-2	73.54	30.42	43.12
BPOW1-3	73.37	30.24	43.13
BPOW2-1	60.06	21.44	38.62
BPOW2-2	59.96	23.70	36.26
BPOW3-1	63.19	26.51	36.68
BPOW3-2	63.72	27.27	36.45
BPOW4-1	67.34	26.32	41.02
BPOW4-2	67.18	26.15	41.03

(1) Water level was measured by inflating airline set at 120 ft bmp (gauge at wellhead) and subtracting the reading on the gauge from 120 to obtain the depth to water in feet.

(2) Water level was measured by inflating airline set at 110 ft bmp (gauge at wellhead) and subtracting the reading on the gauge from 110 to obtain the depth to water in feet.

(3) Wells GM-39_A and GM-39_B are screened at the approximate midpoint and basal portion of the deep zone, respectively.

(4) Well GP-3 was off-line for redevelopment during the First Quarter 2005.

(5) Water level measurement was collected on March 14, 2005.

(6) Water level measurement was collected on March 16, 2005.

(7) Water level measurement was collected on March 28, 2005.

(8) Wells GM-16SR, GM-16I and GM-18S were inaccessible due to construction activities in the area.

ft msl feet relative to mean sea level

ft bmp feet below measuring point

-- Not Measured

Table 4. Comparison of March 15, 2005, Vertical Hydraulic Gradients to Model-Predicted Gradients, Northrop Grumman Corporation, Bethpage, New York.

Well Pair ID	Well Screen Midpoint Elevation (ft msl)	Water-Level Elevation (ft msl)	Vertical Gradient [2] (ft/ft) * 10^3	Model-Predicted, OU2 Steady-State Vertical Gradient (ft/ft) * 10^3	Increase Compared to Model-Predicted, Steady-State Vertical Gradient
Shallow-Intermediate Wells					
GM-15S	34.53	63.12			
GM-15I	9.29	63.15	-1.19	4.20	-5.38
GM-17SR	50.79	64.51			
GM-17I	5.83	64.46	1.11	4.50	-3.39
GM-19S	59.36	67.44			
GM-19I	-25.14	65.11	27.57	2.44	25.13
GM-21S	40.81	68.60			
GM-21I	-29.28	65.80	39.95	18.44	21.51
GM-78S	39.94	62.44			
GM-78I	5.56	62.29	4.36	8.73	-4.37
GM-79S	35.88	59.38			
GM-79I	-73.91	59.04	3.10	0.91	2.19
Intermediate-Deep Wells					
GM-15I	9.29	63.15			
GM-15D	-227.34	61.41	7.35	6.52	0.83
GM-17I	5.83	64.46			
GM-17D	-172.32	63.57	5.00	7.86	-2.87
GM-18I	9.03	64.79			
GM-18D	-186.12	61.86	15.01	7.74	7.27
GM-20I	3.88	68.38			
GM-20D	-117.08	65.33	25.21	18.22	6.99
GM-21I	-29.28	65.80			
GM-21D	-177.34	61.53	28.84	43.97	-15.13
GM-74I	8.42	66.01			
GM-74D	-192.57	60.94	25.23	20.17	5.06
GM-79I	-73.91	59.04			
GM-79D	-183.75	58.23	7.37	15.48	-8.10

See notes on last page

Table 4. Comparison of March 15, 2005, Vertical Hydraulic Gradients to Model-Predicted Gradients, Northrop Grumman Corporation, Bethpage, New York.

Well Pair ID	Well Screen Midpoint Elevation (ft msl)	Water-Level Elevation (ft msl)	Vertical Gradient [2] (ft/ft) * 10^3	Model-Predicted, OU2 Steady-State Vertical Gradient (ft/ft) * 10^3	Increase Compared to Model-Predicted, Steady-State Vertical Gradient
Deep-Deep 2 Wells					
GM-15D	-227.34	61.41			
GM-15D2	-436.41	58.75	12.72	14.19	-1.46
GM-18D	-186.12	61.86			
GM-33D2	-403.15	55.40	29.77	12.30	17.47
GM-34D	-242.81	54.69			
GM-34D2	-443.81	53.39	6.47	2.33	4.13
GM-36D	-117.37	55.20			
GM-36D2	-443.40	53.04	6.63	2.75	3.88
GM-37D	-154.74	56.85			
GM-37D2	-282.83	56.25	4.68	3.88	0.80
GM-38D	-238.25	52.43			
GM-38D2	-393.44	50.36	13.34	6.08	7.26
$GM\text{-}39D_A$ [1]	-169.77	62.20			
$GM\text{-}39D_B$ [1]	-312.92	58.68	24.59	13.46	11.13
GM-73D	-301.13	59.43			
GM-73D2	-437.38	56.95	18.20	18.78	-0.58
GM-74D	-192.57	60.94			
GM-74D2	-444.64	54.55	25.35	28.26	-2.91
N-10627	-198.80	59.87			
GM-75D2	-421.37	56.59	14.74	2.25	12.49

(1) Wells $GM\text{-}39_A$ and $GM\text{-}39_B$ are screened at the approximate midpoint and basal portion of the deep zone, respectively.

ft msl feet relative to mean sea level

(2) Vertical hydraulic gradients are calculated as follows:

$$\frac{(\text{Water-Level Elevation}_1 - \text{Water-Level Elevation}_2)}{(\text{Screen Midpoint Elevation}_1 - \text{Screen Midpoint Elevation}_2)}$$

$_1$ - Shallower well of pairing

$_2$ - Deeper well of pairing

A positive "+" gradient value indicates a downward hydraulic gradient.

A negative "-" gradient value indicates an upward hydraulic gradient.

Table 5. Summary of Total Volatile Organic Compound and Cadmium/Chromium Concentrations and Comparison to SCGs for Select Site Boundary Monitoring Wells, First Quarter 20
Northrop Grumman Corporation, Bethpage, New York. [1] [2]

Shallow Zone

Well Identification:	N-10631	N-10634	GM-17SR	GM-18S	GM-21S	GM-78S	MW-3R
First Quarter TVOC Concentration (ug/L):	ND	0.5	ND	1	ND	0.9	2.7
No. of First Quarter VOC SCG Exceedences:	None	None	None	None	None	None	None
First Quarter Total Cd Concentration (ug/L):	4	NS	<10	<10	NS	<10	26.8
First Quarter Total Cd SCG Exceedences:	None	--	None	None	--	None	1
First Quarter Total Cr Concentration (ug/L):	28.2	NS	<10	3.9	NS	<10	46.9
First Quarter Total Cr SCG Exceedences:	None	--	None	None	--	None	None

Intermediate Zone

Well Identification:	N-10624	GM-17I	GM-18I	GM-20I	GM-21I	GM-74I	GM-78I	GM-79I
First Quarter TVOC Concentration (ug/L):	ND	ND	ND	ND	ND	ND	1	ND
No. First Quarter VOC SCG Exceedences:	None	None	None	None	None	None	None	None
First Quarter Total Cd Concentration (ug/L):	NS	NS	NS	NS	NS	NS	<10	NS
First Quarter Total Cd SCG Exceedences:	--	--	--	--	--	--	None	--
First Quarter Total Cr Concentration (ug/L):	NS	NS	NS	NS	NS	NS	<10	NS
First Quarter Total Cr SCG Exceedences:	--	--	--	--	--	--	None	--

Deep Zone

Well Identification:	GM-17D	GM-18D	GM-20D	GM-21D
First Quarter TVOC Concentration (ug/L):	0.6	7.6	ND	0.6
No. First Quarter VOC SCG Exceedences:	None	1	None	None

(1) Wells are shown on Figure 1. VOC analytical results from shallow, intermediate, and deep wells are provided in Tables 6 through 8, respectively; Cr and Cd analytical results for shallow and intermediate wells are provided in Table 11.

(2) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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 6. Concentrations of Volatile Organic Compounds Detected in Shallow Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	10631 N-10631 4/16/2005	10634 N10634 4/14/2005	FW-03 FW-03 4/12/2005	GM-15S GM-15S 3/16/2005	GM-16SR GM-16SR 4/11/2005
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		<5	**0.5J**	**3J**	**2J**	<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	**10**	<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**	**0.5**	**13**	**2**	**0**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGS (NYSDEC 1998); 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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 6. Concentrations of Volatile Organic Compounds Detected in Shallow Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-17SR GM-17SR 4/16/2005	GM-18S GM-18S 4/15/2005	GM-21S GM-21S 4/13/2005	GM-32S GM-32S 4/18/2005	GM-78S 78 S 4/13/2005
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	**1J**	<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		<5	<5	<5	**4J**	**0.9J**
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**	**1**	**0**	**4**	**0.9**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGS (NYSDEC 1998); 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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 6. Concentrations of Volatile Organic Compounds Detected in Shallow Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: SAMPLE ID: DATE:	GM-78S REP041305 4/13/2005	HN-40S HN-40S 3/14/2005	HN-42S HW-42S 3/14/2005	MW-03R MW-3R 4/13/2005
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		<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	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		**0.7J**	<5	<5	**2J**
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		<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5
Toluene	5		<5	<5	<5	**0.7J**
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		<5	<5	<5	<5
Total VOCs			**0.7**	**0**	**0**	**2.7**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGS (NYSDEC 1998); 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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

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Table 7. Concentrations of Volatile Organic Compounds Detected in Intermediate Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL:	10624	GM-15I	GM-16I	GM-17I	GM-18I
		SAMPLE ID:	N-10624	GM-15I	GM-16I	GM 17I	GM18I
		DATE:	4/16/2005	3/16/2005	4/11/2005	3/25/2005	3/18/2005
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	**4J**	<5	<5
1,1-Dichloroethane	5		<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5		<5	**0.9J**	**10**	<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		<5	**5J**	**60**	<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	**16**	<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**	**5.9**	**90**	**0**	**0**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGS (NYSDEC 1998); 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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 7. Concentrations of Volatile Organic Compounds Detected in Intermediate Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-20I GM-20I 3/18/2005	GM-21I GM-21I 3/17/2005	GM-74I GM 74I 3/22/2005	GM-78I 78 I 4/13/2005	GM-79I GM-79I 3/23/2005
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		<5	<5	<5	**1J**	<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**	**0**	**0**	**1**	**0**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGS (NYSDEC 1998); 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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 7. Concentrations of Volatile Organic Compounds Detected in Intermediate Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	HN-24I HN-24I 4/12/2005	HN-29I HN-29I 4/12/2005	HN-40I HN-40I 3/14/2005	HN-42I HW-42I 3/14/2005
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		<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	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		<5	<5	**4J**	<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	50		<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10
Tetrachloroethene	5		<5	<5	**2J**	<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	NE		<5	<5	<5	<5
Freon-113 *	5		<5	<5	<5	<5
Total VOCs			**0**	**0**	**6**	**0**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGS (NYSDEC 1998); 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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 8. Concentrations of Volatile Organic Compounds Detected in Deep Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL:	10627	GM-13D	GM-15D	GM-17D	GM-18D
		SAMPLE ID:	N-10627	GM-13D	GM-15D	GM 17D	GM 18D
		DATE:	4/16/2005	3/25/2005	3/16/2005	3/25/2005	3/18/2005
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	**54**	**2J**	<5	<5
1,1-Dichloroethane	5		<5	**26**	**3J**	<5	<5
cis-1,2-Dichloroethene	5		<5	**110**	<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	**0.8J**	<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	**33**	<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		**1J**	**160**	**3J**	<5	**7**
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	**640D**	**3J**	<5	**0.6J**
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	**11**	<5	**0.6J**	<5
Total VOCs			**1**	**1034.8**	**11**	**0.6**	**7.6**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); most stringent value listed.

(2) Wells GM-39D_A and GM-39D_B are screened in the upper and basal portions of the deep zone, respectively.

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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 8. Concentrations of Volatile Organic Compounds Detected in Deep Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-20D / GM-20D / 3/18/2005	GM-21D / GM-21D / 3/17/2005	GM-34D / GM-34D / 4/14/2005	GM-36D / GM-36D / 3/30/2005	GM-37D / GM-37D / 3/30/2005
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	**5J**	<5	**0.9J**
1,1-Dichloroethane	5		<5	<5	<5	<5	**2J**
cis-1,2-Dichloroethene	5		<5	<5	7	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	<5	<5	<5	**0.6J**
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		<5	**0.6J**	430D	9	<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	7	**0.7J**	**0.8J**
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	24	<5	<5
Total VOCs			**0**	**0.6**	**473**	**9.7**	**4.3**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); most stringent value listed.

(2) Wells GM-39D$_A$ and GM-39D$_B$ are screened in the upper and basal portions of the deep zone, respectively.

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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 8. Concentrations of Volatile Organic Compounds Detected in Deep Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-38D GM-38D 3/31/2005	GM-39D$_A$[2] GM-39D 3/23/2005	GM-39D$_B$[2] GM-39D-2 3/25/2005	GM-73D GM73D 3/22/2005	GM-74D GM 74D 3/22/2005
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		**5J**	<5	<5	<5	<5
1,1-Dichloroethane	5		**3J**	<5	<5	<5	<5
cis-1,2-Dichloroethene	5		**2J**	<5	<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		**0.7J**	<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		**3J**	<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		**830D**	**9**	**28**	**82**	**3J**
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		**0.6J**	<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		**0.6J**	<5	<5	**0.6J**	<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		**0.9J**	<5	<5	<5	<5
Total VOCs			**845.8**	**9**	**28**	**82.6**	**3**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); most stringent value listed.

(2) Wells GM-39D$_A$ and GM-39D$_B$ are screened in the upper and basal portions of the deep zone, respectively.

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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 8. Concentrations of Volatile Organic Compounds Detected in Deep Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-79D / GM-79D / 3/23/2005	HN-29D / HN-29D / 4/14/2005
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		**0.5J**	<5
1,1-Dichloroethane	5		<5	<5
cis-1,2-Dichloroethene	5		**0.7J**	<5
trans-1,2-Dichloroethene	5		**0.5J**	<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		**68**	**0.7J**
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		**2J**	<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		**1J**	<5
Total VOCs			**72.7**	**0.7**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); most stringent value listed.

(2) Wells GM-39D_A and GM-39D_B are screened in the upper and basal portions of the deep zone, respectively.

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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

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Table 9. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells and OU2 Groundwater Remedial Treatment Systems, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-15D2 / GM-15D-2 / 3/16/2005	GM-33D2 / GM-33D2 / 4/16/2005	GM-34D2 / GM-34D2 / 4/14/2005	GM-35D2 / GM-35D2 / 3/28/2005	GM-36D2 / GM-36D2 / 3/30/2005
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		**0.8J**	<5	**4J**	**2J**	<5
1,1-Dichloroethane	5		<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	**6**	**4J**	<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		**11**	**43**	**180**	**330D**	<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		**15**	**5J**	**6**	**8**	<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		**1J**	**3J**	**8**	**9**	<5
Total VOCs			**27.8**	**51**	**204**	**353**	**0**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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
TOGS Technical and Operational Guidance Series memorandum.
Bold value indicates a detection.

Table 9. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells and OU2 Groundwater Remedial Treatment Systems, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-37D2 GM-37D2 4/1/2005	GM-37D2 REP040105 4/1/2005	GM-38D2 GM-38D2 3/31/2005	GM-70D2 GM-70D2 4/18/2005	GM-71D2 GM-71D-2 3/28/2005
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		**3J**	**3J**	**2J**	<5	**2J**
1,1-Dichloroethane	5		**7**	**7**	<5	<5	**9**
cis-1,2-Dichloroethene	5		<5	<5	**6**	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		**0.4J**	**0.4J**	**0.7J**	<5	**1J**
1,2-Dichloroethane	5		<5	<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5		**3J**	**3J**	<5	<5	**2J**
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		**1J**	**1J**	**1400D**	**82**	**5J**
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	**2J**	<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	**0.3J**	<5	**7**	<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	**1J**	**2J**	<5
Total VOCs			**14.4**	**14.7**	**1411.7**	**91**	**19**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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
TOGS Technical and Operational Guidance Series memorandum.
Bold value indicates a detection.

Table 9. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells and OU2 Groundwater Remedial Treatment Systems, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GM-73D2 GM73D2 3/22/2005	GM-73D2 REP032205 3/22/2005	GM-74D2 GM 74D2 3/22/2005	GM-75D2 GM-75D2 4/16/2005	GP-1 GP 1/3 WELL 1 5/6/2005
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		**0.8J**	**0.8J**	**0.5J**	**4J**	**5J**
1,1-Dichloroethane	5		<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5		**0.6J**	**0.6J**	<5	**1J**	**8**
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	<5	<5	<5	**0.3J**
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	**1J**
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		**320D**	**320D**	**8**	**330D**	**440D**
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		**1J**	**1J**	**8**	**4J**	**120**
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	**1J**	**9**
Total VOCs			**322.4**	**322.4**	**16.5**	**340**	**583.3**

[1] Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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
TOGS Technical and Operational Guidance Series memorandum.
Bold value indicates a detection.

Table 9. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells and OU2 Groundwater Remedial Treatment Systems, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	GP-3 GP 1/3 WELL 3 5/6/2005	ONCT-1 ONCT 1 WELL 17 5/5/2005	ONCT-2 ONCT 2 WELL 18 5/5/2005	ONCT-3 ONCT 3 WELL 19 5/5/2005
Chloromethane	5		<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5
Vinyl Chloride	2		**200D**	<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		**25**	**2J**	**3J**	**1J**
1,1-Dichloroethane	5		**4J**	<5	<5	<5
cis-1,2-Dichloroethene	5		**18**	**3J**	**1J**	**16**
trans-1,2-Dichloroethene	5		<5	<5	<5	<5
Chloroform	7		**0.5J**	<5	<5	**1J**
1,2-Dichloroethane	5		<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10
1,1,1-Trichloroethane	5		**6**	**0.6J**	**2J**	**0.6J**
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		**2400D**	**570D**	**130**	**86**
Dibromochloromethane	5		<5	<5	<5	<5
1,1,2-Trichloroethane	5		**1J**	<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		**60**	**13**	**8**	**8**
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5
Toluene	5		<5	<5	**1J**	<5
Chlorobenzene	5		**0.7J**	<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		**27**	**9**	**1J**	**0.7J**
Total VOCs			**2742.2**	**597.6**	**146**	**113.3**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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

TOGS Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 9. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells and OU2 Groundwater Remedial Treatment Systems, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: SAMPLE ID: DATE:	EFFL GP 1/3 TOWER EF 5/6/2005	EFFL ONCT TOWER EFF. 5/5/2005
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		**2J**	**0.5J**
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	**0.6J**
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			**2**	**1.1**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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
TOGS Technical and Operational Guidance Series memorandum.
Bold value indicates a detection.

Table 10. Concentrations of Site-Related Volatile Organic Compounds Detected in Outpost Wells, First Quarter 2005, 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 BPOW 1-1 4/5/2005	OW 1-2 BPOW 1-2 4/5/2005	OW 1-3 BPOW 1-3 4/5/2005	OW 2-1[3] BPOW 2-1 4/6/2005	OW 2-2 BPOW 2-2 4/6/2005	OW 3-1 BPOW 3-1 4/8/2005	OW 3-2 BPOW 3-2 4/8/2005	OW 4-1 BPOW 4-1 4/7/2005	OW 4-2 BPOW 4-2 4/7/2005
Chlorobenzene	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethene	5		**4.6**	<0.50	**1.9**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	5		**2.1**	<0.50	**0.94**	**1.6**	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	7		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	5		<0.50	<0.50	<0.50	**2.1**	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	5		**8.2**	<0.50	**4.5**	**0.55**	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene	5		**2.5**	<0.50	**0.59**	**1.7**	**0.7**	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	5		<0.50	<0.50	<0.50	**1.1**	<0.50	<0.50	<0.50	<0.50	<0.50
Freon-113 *	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Total Site-Related VOCs:			**17.4**	**0**	**7.93**	**7.05**	**0.7**	**0**	**0**	**0**	**0**

Footnotes:

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

(2) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); most stringent value listed.

(3) Benzene was detected in Outpost Well OW 2-1 on 04/06/2005 at a concentration of 13 ug/L, which exceeds the SCG criterion of 0.7 ug/L.

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.
TOGS	Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

Table 10. Concentrations of Site-Related Volatile Organic Compounds Detected in Outpost Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York. (1)

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values(2)	WELL:	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK
		SAMPLE ID:	TB040505	TB040605	TB040705	TB040805
		DATE:	4/5/2005	4/6/2005	4/7/2005	4/8/2005
Chlorobenzene	5		<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethene	5		<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	5		<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene	5		<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	5		<0.50	<0.50	<0.50	<0.50
Chloroform	7		<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	5		<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	5		<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	5		<0.50	<0.50	<0.50	<0.50
Trichloroethene	5		<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	5		<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	5		<0.50	<0.50	<0.50	<0.50
Freon-113 *	5		<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	5		<0.50	<0.50	<0.50	<0.50
Total Site-Related VOCs:			**0**	**0**	**0**	**0**

Footnotes:

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

(2) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); most stringent value listed.

(3) Benzene was detected in Outpost Well OW 2-1 on 04/06/2005 at a concentration of 13 ug/L, which exceeds the SCG criterion of 0.7 ug/L.

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.
TOGS	Technical and Operational Guidance Series memorandum.

Bold value indicates a detection.

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Table 11. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Groundwater and Blank Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (ug/L)	NYSDEC SCGs [1]	WELL: / SAMPLE ID: / DATE:	10631 N-10631 4/16/2005	GM-15S GM-15S 3/16/2005	GM-16SR GM-16SR 4/11/2005	GM-17SR GM-17SR 4/16/2005	GM-18S GM-18S 4/15/2005	GM-32S GM-32S 4/18/2005	GM-78S 78 S 4/13/2005	GM-78S REP041305 4/13/2005	GM-78I 78 I 4/13/2005	MW-01GF GM-1GF 4/13/2005	MW-02GF GM-2GF 4/13/2005	MW-03R MW-3R 4/13/2005
Cadmium	5		**4 B**	–	<10	<10	<10	<10	<10	<10	<10	<10	<10	**26.8**
Cadmium (Dissolved)	5		**3.2 B**	–	<10	<10	<10	<10	<10	<10	<10	<10	<10	**25**
Chromium	50		**28.2**	**366**	<10	<10	**3.9 B**	**54.8**	<10	<10	<10	**1.9 B**	**31**	**46.9**
Chromium (Dissolved)	50		**20**	–	<10	<10	<10	**50.3**	<10	**1.5 B**	<10	<10	**27.9**	**46.9**

[1] Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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.
TOGS Technical and Operational Guidance Series memorandum.
Bold Constituent detected above IDL.
-- Not analyzed

Table 11. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Groundwater and Blank Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (ug/L)	NYSDEC SCGs [1]	WELL:	MW-04	MW-05	MW-06	WATER EQ. BLANK	WATER EQ. BLANK	WATER EQ. BLANK	WATER EQ. BLANK	WATER EQ. BLANK
		SAMPLE ID:	PT1MW-04	PT1MW-05	PT1MW-06	FB031605	FB041305	FB041505	FB041605	FB041805
		DATE:	4/11/2005	4/11/2005	4/11/2005	3/16/2005	4/13/2005	4/15/2005	4/16/2005	4/18/2005
Cadmium	5		--	--	--	--	<10	<10	<10	<10
Cadmium (Dissolved)	5		--	--	--	--	--	--	--	--
Chromium	50		<10	**1220**	**298**	<10	<10	<10	<10	<10
Chromium (Dissolved)	50		--	--	--	--	--	--	--	--

[1] Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller 2000) that are based on the NYSDEC TOGSs (NYSDEC 1998); 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.
TOGS Technical and Operational Guidance Series memorandum.
Bold Constituent detected above IDL.
-- Not analyzed

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Table 12. Concentrations of Tentatively Identified Compounds (TICs) Detected in Groundwater Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

WELL IDENTIFICATION (Units in ug/L)	SAMPLE ID	DATE	Isobutane
GM-34D	GM-34D	4/15/2005	30 NJD

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	Presumptive evidence of this constituent. Calibrations were not run for these constituents; therefore, the results should be used for qualitative purposes only.
J	Estimated value
D	Constituent identified at a secondary dilution.

Table 13. Concentrations of Volatile Organic Compounds Detected in Blank Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK 3/14/2005 TB031405	TRIP BLANK 3/16/2005 TB031605	TRIP BLANK 3/17/2005 TB031705	TRIP BLANK 3/18/2005 TB031805	TRIP BLANK 3/22/2005 TB032205	TRIP BLANK 3/23/2005 TB032305
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		**2J**	**2J**	<5	<5	**2J**	**2J**
Acetone		**5J B**	**5J B**	<10	<10	<10	**4J**
Carbon disulfide		<5	<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		<5	<5	<5	<5	<5	<5
1,2-Dichloroethane		<5	<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane		<5	<5	<5	<5	<5	<5
Carbon tetrachloride		<5	<5	<5	<5	<5	<5
Bromodichloromethane		<5	<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	<5	<5	<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		<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone		<10	<10	<10	<10	<10	<10
2-Hexanone		<10	<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		<5	<5	<5	<5	<5	<5
Freon-113 *		<5	<5	<5	<5	<5	<5
Total VOCs		**7**	7	**0**	**0**	**2**	**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 13. Concentrations of Volatile Organic Compounds Detected in Blank Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK 3/25/2005 TB032505	TRIP BLANK 3/28/2005 TB032805	TRIP BLANK 3/30/2005 TB033005	TRIP BLANK 3/31/2005 TB033105	TRIP BLANK 4/1/2005 TB040105	TRIP BLANK 4/11/2005 TB041105
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		**2J**	**2J**	**2J**	**2J**	**2J B**	**1J B**
Acetone		**4J**	**4J B**	**4J**	**4J**	**4J**	**4J**
Carbon disulfide		<5	<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		<5	<5	<5	<5	<5	<5
1,2-Dichloroethane		<5	<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane		<5	<5	<5	<5	<5	<5
Carbon tetrachloride		<5	<5	<5	<5	<5	<5
Bromodichloromethane		<5	<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	<5	<5	<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		<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone		<10	<10	<10	<10	<10	<10
2-Hexanone		<10	<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		<5	<5	<5	<5	<5	<5
Freon-113 *		<5	<5	<5	<5	<5	<5
Total VOCs		**6**	**6**	**6**	**6**	**6**	**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 13. Concentrations of Volatile Organic Compounds Detected in Blank Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK 4/12/2005 TB041205	TRIP BLANK 4/13/2005 TB041305	TRIP BLANK 4/14/2005 TB041405	TRIP BLANK 4/15/2005 TB041505	TRIP BLANK 4/16/2005 TB041605	TRIP BLANK 4/18/2005 TB041805
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		**2J**	**3J B**	**2J B**	**2J**	**12 B**	**2J B**
Acetone		<10	<10	<10	<10	<10	<10
Carbon disulfide		<5	<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		<5	<5	<5	<5	<5	<5
1,2-Dichloroethane		<5	<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane		<5	<5	<5	<5	<5	<5
Carbon tetrachloride		<5	<5	<5	<5	<5	<5
Bromodichloromethane		<5	<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	<5	<5	<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		<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone		<10	<10	<10	<10	<10	<10
2-Hexanone		<10	<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		<5	<5	<5	<5	<5	<5
Freon-113 *		<5	<5	<5	<5	<5	<5
Total VOCs		**2**	**3**	**2**	**2**	**12**	**2**

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 13. Concentrations of Volatile Organic Compounds Detected in Blank Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK 5/5/2005 TB050505	TRIP BLANK 5/6/2005 TB050605	FIELD BLANK 3/14/2005 FB031405	FIELD BLANK 3/16/2005 FB031605	FIELD BLANK 4/11/2005 FB041105	FIELD BLANK 4/12/2005 FB041205
Chloromethane		<5	<5	<5	<5	<5J	<5
Bromomethane		<5	<5	<5	<5	<5J	<5
Vinyl Chloride		<2	<2	<2	<2	<2J	<2
Chloroethane		<5	<5	<5	<5	<5J	<5
Methylene chloride		**1J**	<5	<5	<5	**2J B**	<5
Acetone		<10	<10	**5J B**	**5J B**	<10J	<10
Carbon disulfide		<5	<5	<5	<5	<5J	<5
1,1-Dichloroethene		<5	<5	<5	<5	<5J	<5
1,1-Dichloroethane		<5	<5	<5	<5	<5J	<5
cis-1,2-Dichloroethene		<5	<5	<5	<5	<5J	<5
trans-1,2-Dichloroethene		<5	<5	<5	<5	<5J	<5
Chloroform		<5	<5	<5	<5	<5J	<5
1,2-Dichloroethane		<5	<5	<5	<5	<5J	<5
2-Butanone		<10	<10	<10	<10	<10J	<10
1,1,1-Trichloroethane		<5	<5	<5	<5	<5J	<5
Carbon tetrachloride		<5	<5	<5	<5	<5J	<5
Bromodichloromethane		<5	<5	<5	<5	<5J	<5
1,2-Dichloropropane		<5	<5	<5	<5	<5J	<5
cis-1,3-Dichloropropene		<5	<5	<5	<5	<5J	<5
Trichloroethene		<5	<5	<5	<5	<5J	<5
Dibromochloromethane		<5	<5	<5	<5	<5J	<5
1,1,2-Trichloroethane		<5	<5	<5	<5	<5J	<5
Benzene		<0.7	<0.7	<0.7	<0.7	<0.7J	<0.7
trans-1,3-Dichloropropene		<5	<5	<5	<5	<5J	<5
Bromoform		<5	<5	<5	<5	<5J	<5
4-Methyl-2-pentanone		<10	<10	<10	<10	<10J	<10
2-Hexanone		<10	<10	<10	<10	<10J	<10
Tetrachloroethene		<5	<5	<5	<5	<5J	<5
1,1,2,2-Tetrachloroethane		<5	<5	<5	<5	<5J	<5
Toluene		<5	**3J**	<5	<5	<5J	<5
Chlorobenzene		<5	<5	<5	<5	<5J	<5
Ethylbenzene		<5	<5	<5	<5	<5J	<5
Styrene		<5	<5	<5	<5	<5J	<5
Xylene (total)		<5	**0.9J**	<5	<5	<5J	<5
Vinyl Acetate		<5	<5	<5	<5	<5J	<5
Freon-113 *		<5	<5	<5	<5	<5J	<5
Total VOCs		**1**	**3.9**	**5**	**5**	**2**	**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 13. Concentrations of Volatile Organic Compounds Detected in Blank Samples, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

SAMPLE TYPE:	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK
CONSTITUENT SAMPLE ID:	4/13/2005	4/14/2005	4/15/2005	4/16/2005	4/18/2005
(Units in ug/L) DATE:	FB041305	FB041405	FB041505	FB041605	FB041805
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	**7 B**	<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	**0.5J**	**0.7J**	<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**	**0.5**	**0.7**	**7**	**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.

800 0 800 1600

SCALE: 1" = 800'

N

EXPLANATION

- PROPERTY BOUNDARY OF FORMER GRUMMAN AEROSPACE CORPORATION SITE
- PROPERTY BOUNDARY OF THE U.S. NAVY SITE
- RECHARGE BASIN
- GM-15I (63.15) — LOCATION AND DESIGNATION OF INTERMEDIATE MONITORING WELL AND WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- 3876 — LOCATION AND DESIGNATION OF BETHPAGE WATER DISTRICT PUBLIC SUPPLY WELL (SHOWN FOR REFERENCE ONLY)
- 3554 — LOCATION AND DESIGNATION OF ADDITIONAL WELL
- GP-5 — LOCATION AND DESIGNATION OF GRUMMAN INDUSTRIAL SUPPLY WELL (SHOWN FOR REFERENCE ONLY)
- ONCT-1 — LOCATION AND DESIGNATION OF ON-SITE OU2 REMEDIAL WELL (SHOWN FOR REFERENCE ONLY)
- HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- 60 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)

OU2 OPERABLE UNIT 2

BWD BETHPAGE WATER DISTRICT

USGS UNITED STATES GEOLOGICAL SURVEY

NM NOT MEASURED

NOTES:

1. THIS FIGURE INCLUDES LOCATIONS OF MONITORING WELLS AND PUBLIC SUPPLY WELLS AS OF SEPTEMBER 25, 2001.
2. OU2 WELLS ONCT-1, ONCT-2, ONCT-3, GP-1 AND GP-3 ARE SCREENED IN THE D2 ZONE.
3. BWD WELL 3876 IS SCREENED IN THE DEEP ZONE.
4. BWD WELLS 6915, 6916, 8004, AND 8941 ARE SCREENED IN THE D2 ZONE.
5. BASIN LOCATIONS OBTAINED FROM USGS TOPOGRAPHIC MAPS (HICKSVILLE, AMITYVILLE, HUNTINGTON, AND FREEPORT QUADRANGLES), AND INFORMATION PROVIDED BY NORTHROP GRUMMAN.

REV. ISSUED DATE DESCRIPTION

STAT

ARCADIS
88 Duryea Road
Melville, NY 11747
Tel: 631-249-7600 Fax: 631-249-7610
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PROJECT TITLE

OPERABLE UNIT 2
NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
C. SAN GIOVANNI	M. WOLFERT		M. SAURBORN

SHEET TITLE

POTENTIOMETRIC SURFACE ELEVATION AND HORIZONTAL GROUNDWATER FLOW DIRECTIONS IN THE INTERMEDIATE ZONE MARCH 15, 2005

TASK/PHASE NUMBER	DRAWN BY
00004	E. HUGHES
PROJECT NUMBER	DRAWING NUMBER
NY001348.0405	3

EXPLANATION

- PROPERTY BOUNDARY OF FORMER GRUMMAN AEROSPACE CORPORATION SITE
- PROPERTY BOUNDARY OF THE U.S. NAVY SITE
- RECHARGE BASIN
- GM-15S (63.12) LOCATION AND DESIGNATION OF SHALLOW MONITORING WELL AND WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- 3876 LOCATION AND DESIGNATION OF BETHPAGE WATER DISTRICT PUBLIC SUPPLY WELL (SHOWN FOR REFERENCE ONLY)
- 7164 LOCATION AND DESIGNATION OF ADDITIONAL WELL
- GP-3 LOCATION AND DESIGNATION OF GRUMMAN INDUSTRIAL SUPPLY WELL (SHOWN FOR REFERENCE ONLY)
- ONCT-1 LOCATION AND DESIGNATION OF ON-SITE OU2 REMEDIAL WELL (SHOWN FOR REFERENCE ONLY)
- HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- 60 LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)

OU2 OPERABLE UNIT 2
BWD BETHPAGE WATER DISTRICT
USGS UNITED STATES GEOLOGICAL SURVEY
AM ANOMALOUS MEASUREMENT
NM NOT MEASURED

NOTES:

1. THIS FIGURE INCLUDES LOCATIONS OF MONITORING WELLS AND PUBLIC SUPPLY WELLS AS OF SEPTEMBER 25, 2001.
2. OU2 WELLS ONCT-1, ONCT-2, ONCT-3, GP-1 AND GP-3 ARE SCREENED IN THE D2 ZONE.
3. BWD WELL 3876 IS SCREENED IN THE DEEP ZONE.
4. BWD WELLS 6915, 6916, 8004, AND 8941 ARE SCREENED IN THE D2 ZONE.
5. BASIN LOCATIONS OBTAINED FROM USGS TOPOGRAPHIC MAPS (HICKSVILLE, AMITYVILLE, HUNTINGTON, AND FREEPORT QUADRANGLES), AND INFORMATION PROVIDED BY NORTHROP GRUMMAN.

REV. ISSUED DATE DESCRIPTION

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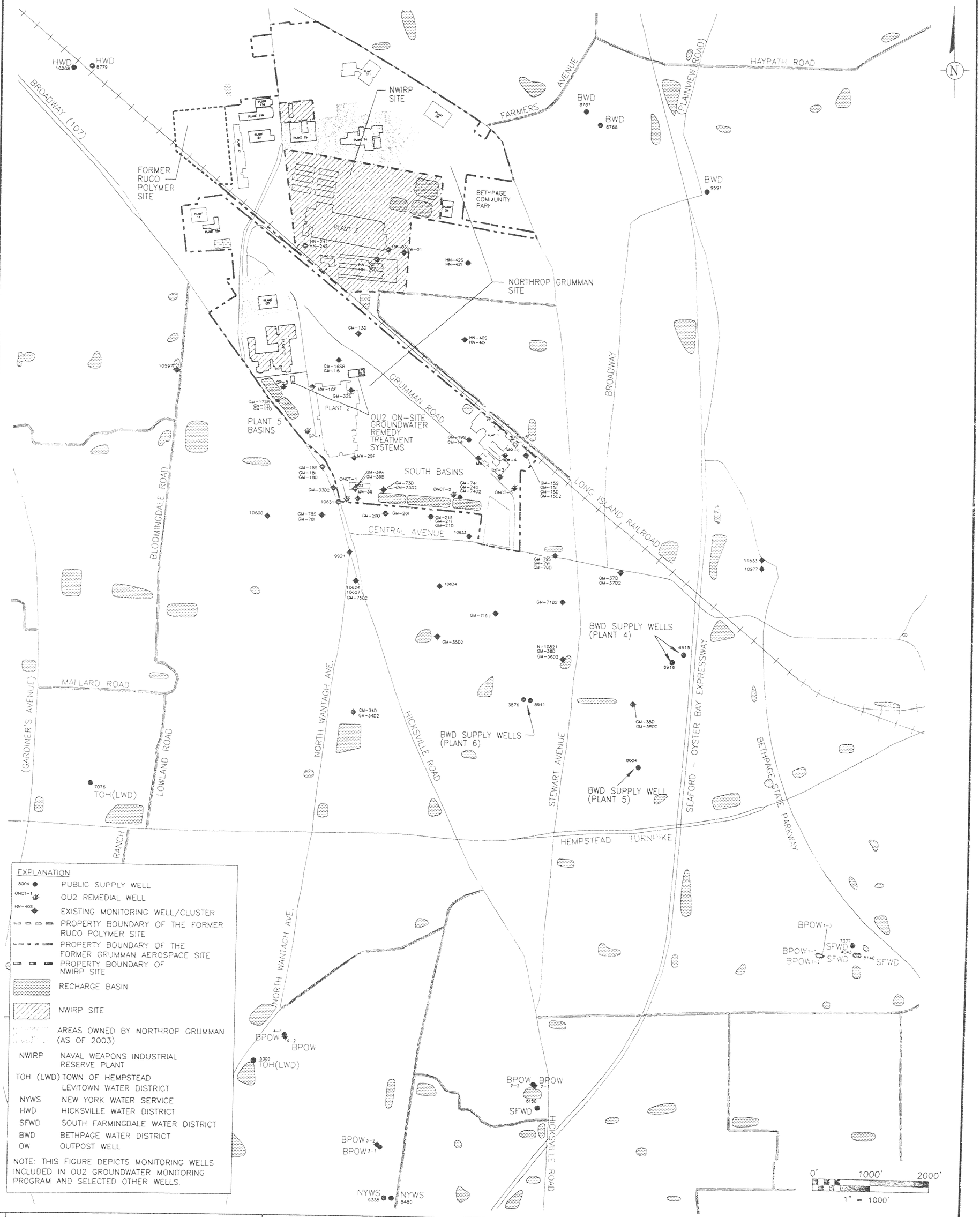
PROJECT TITLE
OPERABLE UNIT 2
NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

PROJECT MANAGER: C. SAN GIOVANNI	DEPARTMENT MANAGER: M. WOLFERT	LEAD DESIGN PROF.	CHECKED BY: M. SAURBORN
SHEET TITLE: WATER-TABLE CONFIGURATION AND HORIZONTAL GROUNDWATER FLOW DIRECTIONS IN THE SHALLOW ZONE MARCH 15, 2005		TASK/PHASE NUMBER: 00004	DRAWN BY: E. HUGHES
		PROJECT NUMBER: NY001348.0405	DRAWING NUMBER: 2



EXPLANATION

- 8004 ● PUBLIC SUPPLY WELL
- ONCT-1 OU2 REMEDIAL WELL
- HN-405 EXISTING MONITORING WELL/CLUSTER
- PROPERTY BOUNDARY OF THE FORMER RUCO POLYMER SITE
- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF NWIRP SITE
- RECHARGE BASIN
- NWIRP SITE
- AREAS OWNED BY NORTHROP GRUMMAN (AS OF 2003)

NWIRP	NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
TOH (LWD)	TOWN OF HEMPSTEAD LEVITOWN WATER DISTRICT
NYWS	NEW YORK WATER SERVICE
HWD	HICKSVILLE WATER DISTRICT
SFWD	SOUTH FARMINGDALE WATER DISTRICT
BWD	BETHPAGE WATER DISTRICT
OW	OUTPOST WELL

NOTE: THIS FIGURE DEPICTS MONITORING WELLS INCLUDED IN OU2 GROUNDWATER MONITORING PROGRAM AND SELECTED OTHER WELLS.

Date\Time : Mon, 22 Aug 2005 - 3:13pm
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Acad Version : R16.2s (LMS Tech)
User Name : ehughes

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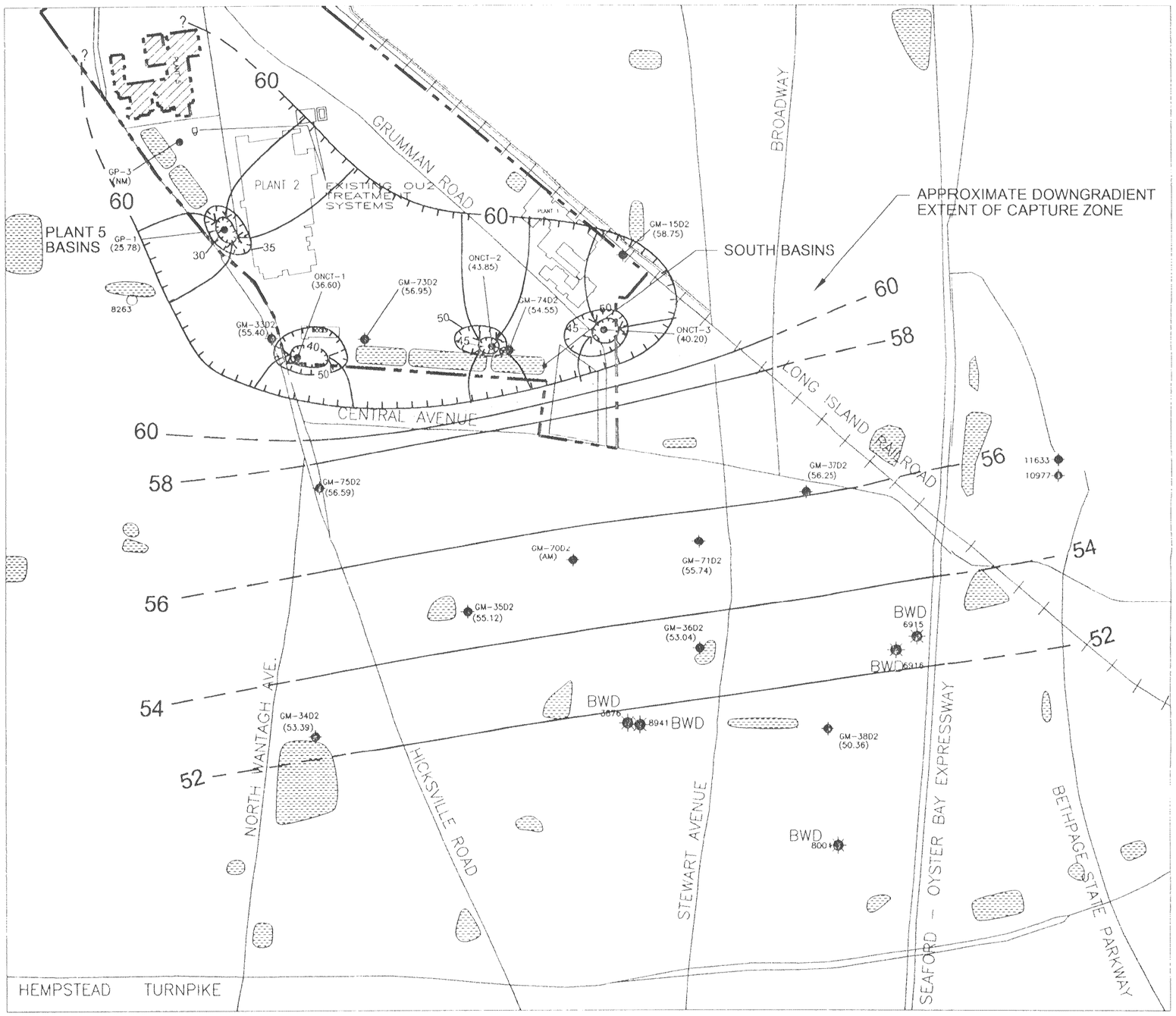
BETHPAGE, NEW YORK

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGNER	CHECKED BY
C. SAN GIOVANNI	M. WOLFERT		M. SAURBORN

SHEET TITLE
LOCATION OF OU2 ON-SITE GROUNDWATER REMEDY AND WELLS

TASK/PHASE NUMBER	DRAWN BY
00004	E. HUGHES
PROJECT NUMBER	DRAWING NUMBER
NY001348.0405	1



EXPLANATION

- PROPERTY BOUNDARY OF FORMER GRUMMAN AEROSPACE CORPORATION SITE
- RECHARGE BASIN
- GM-36D2 (53.04) — LOCATION AND DESIGNATION OF D2 (VERY DEEP) MONITORING WELL AND WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL.
- 3876 — LOCATION AND DESIGNATION OF BETHPAGE WATER DISTRICT PUBLIC SUPPLY WELL
- 8263 — LOCATION AND DESIGNATION OF ADDITIONAL WELL
- ONCT-3 (40.20) — LOCATION AND DESIGNATION OF ON-SITE OU2 REMEDIAL WELL AND WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- 60 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)
- LINE OF EQUAL WATER-LEVEL ELEVATION DENOTING A DECREASE IN POTENTIOMETRIC SURFACE ELEVATION IN FT. MSL.

OU2 OPERABLE UNIT 2

GPM GALLONS PER MINUTE

BWD BETHPAGE WATER DISTRICT

USGS UNITED STATES GEOLOGICAL SURVEY

AM ANOMALOUS MEASUREMENT

NM NOT MEASURED

NOTES:

1. THIS FIGURE INCLUDES LOCATIONS OF MONITORING WELLS AND PUBLIC SUPPLY WELLS AS OF SEPTEMBER 25, 2001.
2. OU2 REMEDIAL WELLS GP-1, GP-3, ONCT-1, ONCT-2 AND ONCT-3 ARE SCREENED IN THE D2 ZONE. WELLS GP-1,GP-3, ONCT-1, ONCT-2 AND ONCT-3 WERE PUMPING AT 960 GPM, 520 GPM, 900 GPM, 800 GPM AND 680 GPM, RESPECTIVELY, AT THE TIME OF WATER LEVEL MEASUREMENT.
3. BWD WELL 3876 IS SCREENED IN THE DEEP ZONE.
4. BWD WELLS 6915, 6916, 8004, AND 8941 ARE SCREENED IN THE D2 ZONE.
5. BASIN LOCATIONS OBTAINED FROM USGS TOPOGRAPHIC MAPS (HICKSVILLE, AMITYVILLE, HUNTINGTON, AND FREEPORT QUADRANGLES), AND INFORMATION PROVIDED BY NORTHROP GRUMMAN.

REV. ISSUED DATE DESCRIPTION

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PROJECT TITLE
OPERABLE UNIT 2
NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
C. SAN GIOVANNI	M. WOLFERT		M. SAURBORN

SHEET TITLE
POTENTIOMETRIC SURFACE ELEVATION AND HORIZONTAL GROUNDWATER FLOW DIRECTIONS IN THE D2 ZONE MARCH 15, 2005

TASK/PHASE NUMBER	DRAWN BY
00004	E. HUGHES
PROJECT NUMBER	DRAWING NUMBER
NY001348.0405	4

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Appendix A

Water-Level Measurement Logs

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Table 3. Water-Level Measurement Data, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York. Taken 3/15/05

Well Identification		Measuring Point Elevation (ft msl)		Depth to Water (ft bmp)	Water-Level Elevation (ft msl)	Pumping Rate GPM
Shallow Wells						
FW-03		124.30		57.95		
N-9921		94.23		33.80		
N-10597		109.85		44.03		
N-10600		102.41		41.02		
N-10631		103.47		38.69		
N-10633		103.80		40.90		
N-10634		101.20		41.27		
N-10821	Taken on 3/16/05	91.58		35.98		
GM-15S		109.44		46.32		
GM-16SR		115.86				
GM-17SR		115.79		51.28		
GM-18S		107.60				
GM-19S		109.86		42.42		
GM-21S		105.81		37.21		
GM-78S		104.94		42.50		
GM-79S (N-10628)		100.88		41.50		
HN-24S		NA		53.96		
HN-40S	ON 3/14/05	116.35		50.61		
HN-42S	ON 3/14/05	120.32		52.92		
MW-3R		101.45		34.63		
Intermediate Wells						
N-10624		93.61		33.37		
GM-15I		109.25		46.10		
GM-16I		115.81				
GM-17I		115.83		51.37		
GM-18I	Taken on 3/16/05	109.03		44.24		
GM-19I		109.86		44.75		
GM-20I		103.88		35.50		
GM-21I		105.72		39.92		
GM-74I		107.42		41.41		
GM-78I		105.06		42.77		
GM-79I		100.88		41.84		
HN-24I		125.80		57.71		
HN-29I		116.42		48.62		
HN-40I	ON 3/14/05	115.91		50.45		
HN-42I	ON 3/14/05	119.61		52.20		

See notes on last page

ARCADIS

Table 3. Water-Level Measurement Data, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

Well Identification		Measuring Point Elevation (ft msl)		Depth to Water (ft bmp)	Water-Level Elevation (ft msl)	Pumping Rate GPM
Deep Wells						
N-10627		93.70		33.83		
GM-13D		113.97		48.05		
GM-15D		109.84		48.43		
GM-17D		115.68		52.11		
GM-18D		108.88		47.02		
GM-20D		103.92		38.59		
GM-21D		105.66		44.13		
GM-34D		71.19		16.50		
GM-36D		91.63		36.43		
GM-37D		97.26		40.41		
GM-38D		91.75		39.32		
GM-39D$_A$		102.23		40.03		
GM-39D$_B$		102.08		43.40		
GM-73D		104.87		45.44		
GM-74D		107.43		46.49		
GM-79D		101.25		43.02		
HN-29D		115.11		48.81		
Deep2 Wells						
GM-15D2		109.78		51.03		
GM-33D2		106.85		51.45		
GM-34D2		71.19		17.80		
GM-35D2		96.28		41.16		
GM-36D2		91.60		38.56		
GM-37D2		97.17		40.92		
GM-38D2		91.56		41.20		
GM-70D2		99.58		42.46		
GM-71D2		98.45		42.71		
GM-73D2		104.62		47.67		
GM-74D2		107.36		52.81		
GM-75D2		93.63		37.04		
GP-1	120' airline	116.78		29 (120-91)		1192
GP-3		NA		Not active		
ONCT-1	110' airline	104.10		67.5 (110-42.5)		1170.8
ONCT-2		110.00				
ONCT-3		108.70		68.50		800

See notes on last page

ARCADIS

Table 3. Water-Level Measurement Data, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

Well Identification		Measuring Point Elevation (ft msl)		Depth to Water (ft bmp)	Water-Level Elevation (ft msl)	Pumping Rate GPM
Outpost Wells						
BPOW1-1		73.65		29.72		
BPOW1-2		73.54		30.42		
BPOW1-3		73.37		30.24		
BPOW2-1		60.06		21.44		
BPOW2-2		59.96		23.70		
BPOW3-1		63.19		26.51		
BPOW3-2		63.72		27.27		
BPOW4-1		67.34		26.32		
BPOW4-2		67.18		26.15		

ft msl feet relative to mean sea level

ft bmp feet below measuring point

NM Not Measured

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Appendix B

Groundwater Sampling Logs

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-13D
Date: 3/25/05 Sampled By: BB
Sampling Time: 4:00pm Recorded By: BB
Weather: overcast 50° 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 200 Bottom 210
Sounded Depth (ft bmp): 210 Pump Intake Depth (ft bmp): 205
Depth to Water (ft bmp): 47.96 Purge time Start: 3:00 pm Finish: 4:00 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
3:00	—	—	—	11.6	6.35	175.6	277	3.64	—	—	—
3:05	—	—	—	13.2	6.05	208	289	2.52	—	47.96	—
3:10	—	—	—	13.1	6.00	210	291	2.86	—	—	—
3:15	—	—	—	12.8	5.98	208	293	3.01	—	47.97	—
3:20	—	—	—	12.5	5.95	196.6	294	3.03	—	—	—
3:25	—	—	—	12.4	5.95	196.0	293	3.05	—	47.96	—
3:30	—	—	—	12.1	5.94	194.7	292	3.22	—	—	—
3:35	—	—	—	11.9	5.94	193.9	290	2.99	—	47.96	—
3:40	—	—	—	12.1	5.94	193.7	289	3.17	—	—	—
3:45	—	—	—	12.5	5.95	191.2	287	2.79	—	47.96	—
3:50	—	—	—	12.7	5.97	190.0	285	2.85	—	—	—
3:55	—	—	—	12.7	5.98	189.8	283	2.96	—	47.96	—
4:00	—	—	—	12.5	5.98	189.6	283	2.98	16.2	—	—

Sample Condition Color: Colorless Odor: — Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead .4 ; Breathing Zone 0

Comments: No Lock

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3/16/05

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

Weather: 48° | Sampling Time: Begin 4:47pm End 5:00pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	80
Depth to Water (ft bmp)	46.32
Water-Level Elevation (ft)	—
Water Column in Well (ft)	33.68
Casing Diameter/Type	4"(0.65)
Gallons in Well	21.9
Gallons Pumped/Bailed Prior to Sampling	x3 66
Sample Pump Intake Setting (ft bmp)	Q=2 T=33 1V=11
Purge Time	begin 4:14pm end 4:47pm
Pumping Rate (gpm)	2gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	strong	strong	strong	strong
Appearance	cloudy	clear	clear	clear
pH (s.u.)	6.27	6.19	6.09	6.05
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	1470	768	646	638
Turbidity (NTU)	50.2	26.9	20.9	18.9
Temperature (°C)	15.6	15.7	15.7	15.5
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	4:14pm	4:25	4:36	4:47

Sampling Method: 3 well volume

Remarks: strong odor

PID reading at wellhead zero

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. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, NY Date: 3/16/05

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

Weather: Partly cloudy 40° Sampling Time: Begin 3:53 pm End 3:55 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	105
Depth to Packer Water (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	21.45
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 3:04 pm / end 3:53 pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated Bladder/packer

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.)	5.74	5.80	5.73	5.73
Conductivity ~~(mS/cm)~~ (µmhos/cm)	260	258	261	257
Turbidity (NTU)	—	—	—	16.0
Temperature (°C)	14.6	15.1	15.3	15.0
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	½	½	½

Sampling Method: 3 well volume

Remarks: DTW = 45.97

94 - 45.97 x .43 + 50 = 75 psi

(Depth to Packer) - (DTW) x .43 + 50 = Rounded up PSI

PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: PP

Well Casing Volumes

Gal./Ft.: 1-¼" = 0.06; 1-½" = 0.09; 2" = 0.16; 2-½" = 0.26; 3" = 0.37; 3-½" = 0.50; 4" = 0.65; 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: NY001348.0405 Task: 00002 Well ID: GM-15D
Date: 3/16/05 Sampled By: PP
Sampling Time: 2:10pm Recorded By: PP
Weather: Partly cloudy 47° 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): 337
Depth to Water (ft bmp): 48.32 Purge time Start: 1:10pm Finish: 2:10pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~µmhos/cm~~ µS/cm	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
1:10	—	—	—	12.1	5.77	102.9	286	7.23	—	—	—
1:15	—	—	—	12.0	5.48	118.7	294	3.15	—	48.37	—
1:20	—	—	—	12.2	5.34	126.0	301	2.47	—	—	—
1:25	—	—	—	12.1	5.24	145.5	311	3.17	—	48.33	—
1:30	—	—	—	12.2	5.23	155.1	314	3.45	—	—	—
1:35	—	—	—	12.10	5.21	165.8	318	3.20	—	48.33	—
1:40	—	—	—	12.0	5.21	168.6	320	3.26	—	—	—
1:45	—	—	—	11.8	5.21	172.7	321	3.37	—	48.33	—
1:50	—	—	—	11.9	5.21	174.3	323	3.53	—	—	—
1:55	—	—	—	12.0	5.21	175.0	323	3.52	—	48.33	—
2:00	—	—	—	11.9	5.20	176.3	324	3.40	—	—	—
2:05	—	—	—	11.7	5.22	176.0	325	3.28	—	48.33	—
2:10	—	—	—	11.8	5.21	176.0	326	3.26	15.4	—	—

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 0

Comments: /

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-15D2
Date: 3/16/05 Sampled By: PP
Sampling Time: 12:40pm Recorded By: PP
Weather: Partly cloudy 47° 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): 546
Depth to Water (ft bmp): 50.88 Purge time Start: 11:40 AM Finish: 12:40pm

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
11:40	–	–	–	13.2	6.03	85.5	146	15.58	–	–	–
11:45	–	–	–	12.2	5.39	85.2	228	2.12	–	50.89	–
11:50	–	–	–	12.3	5.39	84.8	249	3.28	–	–	–
11:55	–	–	–	12.4	5.40	82.3	254	5.09	–	50.93	–
12:00	–	–	–	12.4	5.43	83.1	263	4.98	–	–	–
12:05	–	–	–	12.7	5.46	81.8	268	5.37	–	50.88	–
12:10	–	–	–	12.5	5.46	81.8	274	5.38	–	–	–
12:15	–	–	–	12.6	5.47	81.4	279	5.24	–	50.88	–
12:20	–	–	–	12.5	5.47	81.4	279	5.31	–	–	–
12:25	–	–	–	12.8	5.47	81.2	285	5.32	–	50.88	–
12:30	–	–	–	12.9	5.47	81.2	285	5.49	–	–	–
12:35	–	–	–	13.0	5.47	81.0	287	5.53	–	50.88	–
12:40	–	–	–	13.2	5.47	81.3	289	5.24	15.2	–	–

Sample Condition Color: Colorless Odor: None Appearance: Clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading At wellhead 0

Comments —

G:\PROJECT\WHCS Metals\ERD Files\Testlow-flowsampleforms.xls-LoFlo-GW-Samp

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4-11-05

Site/Well No.: GM-16SR | Replicate No.: N/A | Code No.: —

Weather: clear 58° | Sampling Time: Begin 1:51 pm | End 1:55 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	70
Depth to Water (ft bmp)	49.04
Water-Level Elevation (ft)	—
Water Column in Well (ft)	20.96
Casing Diameter/Type	4" (0.65) / PVC
Gallons in Well	13.62
Gallons Pumped/Bailed Prior to Sampling	x3 41
Sample Pump Intake Setting (ft bmp)	Q=2 T=21 IV=7
Purge Time	begin 1:30pm end 1:51pm
Pumping Rate (gpm)	2 gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	whitish/clear	clear	clear	clear
Odor	none	none	none	none
Appearance	slightly milky	clear	clear	clear
pH (s.u.)	5.32	5.41	5.38	5.48
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	117.4	125.1	124.8	124.5
Turbidity (NTU)	50	25	19	19
Temperature (°C)	15.3	15.9	16.0	16.0
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time (min)	0	7	14	21

Sampling Method: 3 well volume

Remarks:
PID reading at wellhead 1ppm
Breathing Zone = 0
No cover on top of well.
Left wooden pallet on top of well.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC/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	Millisiemens 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 GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/11/05

Site/Well No.: GM-16I | Replicate No.: N/A | Code No.: —

Weather: clear 50° | Sampling Time: Begin 12:40 | End 12:42 PM

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	145
Depth to ~~Water~~ Packer (ft bmp)	134
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	22
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin — end 12:40pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Packer

Field Parameters

	I	1V	2V	3V
Color	brownish red	brownish red	brownish red	brownish red
Odor	none	none	none	none
Appearance	turbid	turbid	turbid	turbid
pH (s.u.)	8.39	8.49	8.92	8.93
Conductivity ~~(mS/cm)~~ (µmhos/cm)	268	306	294	287
Turbidity (NTU)	>200	>200	>200	>200
Temperature (°C)	14.6	14.8	15.1	15.3
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	½	½	½

Sampling Method: 3 well volume

Remarks: 49.22 ft = DTW

134 − 49.22 × .43 + 50 = 90 PSI

1 = 5 gallons PID = 0.0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC/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. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, NY Date: 4/16/05

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

Weather: Clear, 50°F Sampling Time: Begin 9:11 AM End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	70
Depth to Water (ft bmp)	51.28
Water-Level Elevation (ft)	—
Water Column in Well (ft)	18.72
Casing Diameter/Type	4" (0.65)
Gallons in Well	12.2
Gallons Pumped/Bailed Prior to Sampling	x3 = 37
Sample Pump Intake Setting (ft bmp)	Q=2 T=19 IV=7
Purge Time	begin 8:50 AM end 9:11 AM
Pumping Rate (gpm)	2 gpm
Evacuation Method	Redi-flow pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	5.71	6.30	6.05	6.26
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	76.5	75.6	75.0	73.6
Turbidity (NTU)	9.73	87.46	5.68	6.20
Temperature (°C)	9.9	10.4	10.5	10.5
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	8:50	8:57	9:04	9:11

Sampling Method: 3 well Volume

Remarks: PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JHC / AP

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	Millisiemens 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: NY001348.0405
Task: 00002
Well ID: GM-17 I
Date: 3/25/05
Sampled By: PP
Sampling Time: 1:40pm
Recorded By: PP
Weather: overcast 48°
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 100 Bottom 120
Sounded Depth (ft bmp): 120
Pump Intake Depth (ft bmp): 110
Depth to Water (ft bmp): 51.16
Purge time Start: 12:40pm Finish: 1:40pm

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
12:40	–	–	–	12.2	6.38	104.0	283	7.93	–	–	–
12:45	–	–	–	13.1	6.61	103.4	276	7.91	–	–	–
12:50	–	–	–	13.3	6.62	103.0	274	7.97	–	51.24	–
12:55	–	–	–	13.1	6.65	103.3	271	8.17	–	–	–
1:00	–	–	–	13.1	6.64	103.7	270	8.37	–	51.24	–
1:05	–	–	–	13.1	6.66	104.0	270	8.30	–	–	–
1:10	–	–	–	13.2	6.65	104.0	270	7.97	–	51.24	–
1:15	–	–	–	13.2	6.65	103.8	270	8.17	–	–	–
1:20	–	–	–	13.1	6.66	104.1	269	7.88	–	51.23	–
1:25	–	–	–	13.2	6.66	104.2	269	8.01	–	–	–
1:30	–	–	–	13.3	6.66	104.1	269	8.64	–	51.23	–
1:35	–	–	–	13.3	6.66	103.9	269	8.58	–	–	–
1:40	–	–	–	13.3	6.65	104.1	270	8.32	15.7	51.23	–

Sample Condition Color: colorless Odor: None Appearance: Clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead zero

Comments: ——

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-17D
Date: 3/25/05 Sampled By: PB
Sampling Time: 12:15pm Recorded By: PB
Weather: Overcast 48° 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 298
Sounded Depth (ft bmp): 298 Pump Intake Depth (ft bmp): 288
Depth to Water (ft bmp): 51.92 Purge time Start: 11:15 AM Finish: 12:15pm

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
11:15	—		—	13.5	5.61	105.6	296	6.54	—	—	—
11:20	—	—	—	14.2	5.67	104.5	296	6.70	—	—	—
11:25	—	—	—	13.9	5.68	104.1	299	6.48	—	51.86	—
11:30	—	—	—	13.5	5.71	103.8	300	7.05	—	—	—
11:35	—	—	—	13.5	5.70	103.7	300	6.70	—	—	—
11:40	—	—	—	13.3	5.71	103.6	301	6.88	—	51.89	—
11:45	—	—	—	13.1	5.71	104.0	303	6.83	—	—	—
11:50	—	—	—	13.0	5.71	104.5	303	7.19	—	51.89	—
11:55	—	—	—	13.1	5.70	104.4	304	6.75	—	—	—
12:00	—	—	—	13.1	5.70	103.9	304	7.23	—	51.89	—
12:05	—	—	—	13.1	5.70	104.3	305	6.80	—	—	—
12:10	—	—	—	13.3	5.71	104.0	306	7.21	—	51.91	—
12:15	—	—	—	13.3	5.70	104.3	306	7.18	16.0	—	—

Sample Condition Color: Colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading At wellhead Zero

Comments /

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman Project No. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, New York Date: 4-15-05

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

Weather: Windy, clear 50s Sampling Time: Begin 1:47pm End 1:48pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67
Depth to Water (ft bmp)	42.57
Water-Level Elevation (ft)	✓
Water Column in Well (ft)	24.43
Casing Diameter/Type	2" (0.16) / Steel
Gallons in Well	3.9 x 3
Gallons Pumped/Bailed Prior to Sampling	12
Sample Pump Intake Setting (ft bmp)	q=1 T=12 1V=4
Purge Time	begin 1:35 end 1:47pm
Pumping Rate (gpm)	1gpm
Evacuation Method	Rediflow Pump

Field Parameters

Time	I	1V	2V	3V
Color	dark grey	clear	clear	clear
Odor	none	none	none	none
Appearance	turbid	clear	clear	clear
pH (s.u.)	7.08	7.15	6.56	6.59
Conductivity (~~mS/cm~~)	—	—	—	—
(µmhos/cm)	193.0	170.0	165.4	164.4
Turbidity (NTU)	~~1320~~ 174 JHC	26.7	17.5	16.8
Temperature (°C)	12.5	14.9	15.7	15.9
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~	1:35	1:39	1:43	1:47

Sampling Method: 3 well Volume

Remarks: PID reading at wellhead zero. Well located 6" below land surface due to previous construction work in area of well.

Constituents Sampled	Container Description	Number	Preservative
VOC			

Sampling Personnel: JHC/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

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3-18-05

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

Weather: 50° | Sampling Time: Begin 4:25 pm | End 4:27 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
Gallons Pumped/Bailed Prior to Sampling	x3 = 22
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 3:01 pm end 4:25 pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Bladder (packer)

Field Parameters

Field Parameters	I	1V	2V	3V
Color	Light Black tint	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	turbid	turbid	clear with trace Black specks	clear with trace Black specs
pH (s.u.)	9.15	6.92	6.63	6.51
Conductivity ~~(mS/cm)~~ (µmhos/cm)	654	596	359	284
Turbidity (NTU)	—	—	—	46.5
Temperature (°C)	15.3	16.1	16.3	16.4
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	½	½	½

Sampling Method: 3 well volume

Remarks: PID reading at wellhead zero

DTW = 43.92

94 − 43.92 x .43 + 50 = 80 PSI (Rounded up)

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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: NY001348.0405 Task: 00002 Well ID: GM-18D

Date: 3/18/05 Sampled By: PP

Sampling Time: 6:00pm Recorded By: PP

Weather: Hazy 51° 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 Pump Intake Depth (ft bmp): 295

Depth to Water (ft bmp): 46.79 Purge time Start: 4:59pm Finish: 6:00pm

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
5:00	–	–	–	14.1	6.16	101.7	245	7.35	–	–	–
5:05	–	–	–	13.9	6.01	103.1	254	7.06	–	46.78	–
5:10	–	–	–	13.7	6.05	104.6	258	6.69	–	–	–
5:15	–	–	–	13.6	6.02	105.1	261	7.34	–	46.74	–
5:20	–	–	–	13.5	5.97	105.7	266	7.42	–	–	–
5:25	–	–	–	13.5	6.01	105.4	268	7.33	–	46.75	–
5:30	–	–	–	13.4	6.02	105.7	272	7.00	–	–	–
5:35	–	–	–	13.6	6.02	105.1	273	7.18	–	46.75	–
5:40	–	–	–	13.4	6.01	105.3	276	6.79	–	–	–
5:45	–	–	–	13.3	6.03	105.2	278	6.99	–	46.76	–
5:50	–	–	–	13.2	6.01	105.3	279	7.06	–	–	–
5:55	–	–	–	13.1	6.00	105.1	280	6.70	–	46.79	–
6:00	–	–	–	13.2	6.02	105.0	282	7.35	16.9	–	–

Sample Condition Color: Colorless Odor: None Appearance: Clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead zero

Comments: /

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3/18/05

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

Weather: clear 50° | Sampling Time: Begin — End —

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)
Gallons in Well	7.15
Gallons Pumped/Bailed Prior to Sampling	x3 21.45
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 12:42pm end —
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Bladder/packer

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.)	11.27	11.29	11.26	11.23
Conductivity ~~(mS/cm)~~ (µmhos/cm)	259	318	309	291
Turbidity (NTU)	—	—	—	21.0
Temperature (°C)	12.2	12.3	12.4	12.4
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	½	½	½

Sampling Method: 3 well volume

Remarks: PID reading at wellhead zero

94 - 35.49 x .43 + 50 = 80 PSI Rounded up

(Depth to packer) - (DTW) x .43 + 50 = PSI

DTW = 35.49 / Bolt on well cover does not tighten

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3/18/05

Site/Well No.: GM-20D | Replicate No.: N/A | Code No.: —

Weather: clear 50° | Sampling Time: Begin 12:20pm End 12:22pm

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)	
Purge Time	begin 11:22 AM end 12:20pm
Pumping Rate (gpm)	/
Evacuation Method	Dedicated Bladder/packer

Field Parameters	I	1V	2V	3V
Color	colorless	Colorless	Colorless	Colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	6.50	6.40	6.63	6.72
Conductivity ~~(mS/cm)~~ (µmhos/cm)	161.5	101.7	98.1	96.8
Turbidity (NTU)	—	—	—	15.6
Temperature (°C)	13.3	14.5	14.5	~~14.5~~ 14.7
Dissolved Oxygen (mg/L)	—	—	—	—
5 gallon containers ~~Salinity (%)~~	—	½	½	½

Sampling Method: 3 well volume

Remarks: PID reading at wellhead zero

DTW = 38.44

215 − 38.44 × .43 + 50 = 130 PSI (Rounded up)

Bolt on well cover does not tighten.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: BF

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. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, NY Date: 4/13/05

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

Weather: Partly cloudy 48° Sampling Time: Begin 6:06 pm End 6:09 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67.0
Depth to Water (ft bmp)	37.21
Water-Level Elevation (ft)	—
Water Column in Well (ft)	29.79
Casing Diameter/Type	2" (0.16) / steel
Gallons in Well	4.77
Gallons Pumped/Bailed Prior to Sampling	x3 14.3
Sample Pump Intake Setting (ft bmp)	Q=2 T=8 IV=3
Purge Time	begin 5:57 pm end 6:06 pm
Pumping Rate (gpm)	2 gpm
Evacuation Method	Redi-flow Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	Brown	Colorless		
Odor		NONE		
Appearance	turbid	Clear		
pH (s.u.)	8.99	8.46	8.17	7.57
Conductivity (~~mS/cm~~)	—	—	—	—
(µmhos/cm)	115.9	113.6	110.2	109.3
Turbidity (NTU)	—	—	—	—
Temperature (°C)	9.1	8.8	10.3	10.3
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	5:57	6:00	6:03	6:06

Sampling Method: 3 well volume

Remarks: PID reading at wellhead = 0

No turbidity meter

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JHC / 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. NY001345.1405.0002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3-17-05

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

Weather: Mostly cloudy 47° | Sampling Time: Begin 4:58pm End 5:02pm

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)	—
Purge Time	begin 4:04pm end 4:57pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Bladder/packer

Field Parameters	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	10.25	10.32	10.22	10.15
Conductivity (~~mS/cm~~)	—	—	—	—
(µmhos/cm)	111.2	114.3	111.8	11.25
Turbidity (NTU)	—	—	—	16.1
Temperature (°C)	10.7	11.4	11.8	11.6
Dissolved Oxygen (mg/l)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	# ½	½ #	# ½

Sampling Method: 3 well volume

Remarks: PID reading at wellhead 2.1, Breathing Zone = 0 / No Belts on well

DTW = 38.72

129 - 38.72 X .43 + 50 = 90 PSI Bailed up

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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	Millisiemens 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: NY001348.0405 Task: 00002 Well ID: GM-21D
Date: 3/17/05 Sampled By: PP
Sampling Time: 3:35pm Recorded By: PP
Weather: Mostly cloudy 47°C 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): 283
Depth to Water (ft bmp): 43.96 Purge time Start: 2:35 pm Finish: 3:35 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (µS)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:35	—	—	—	10.3	5.09	103.7	257	5.22	—	—	—
2:40	—	—	—	11.2	5.13	91.7	275	5.19	—	44.02	—
2:45	—	—	—	10.8	5.21	86.6	288	5.02	—	—	—
2:50	—	—	—	10.5	5.22	83.5	297	5.18	—	44.02	—
2:55	—	—	—	10.5	5.22	83.2	303	5.29	—	—	—
3:00	—	—	—	10.5	5.22	84.7	309	5.58	—	44.01	—
3:05	—	—	—	10.5	5.15	86.0	313	5.54	—	—	—
3:10	—	—	—	10.6	5.22	86.2	316	5.61	—	44.02	—
3:15	—	—	—	10.7	5.22	86.6	320	5.32	PP —	—	—
3:20	—	—	—	10.6	5.22	86.6	325	~~5.66~~ ← 5.66	—	44.02	—
3:25	—	—	—	10.6	5.22	86.8	326	5.48	—	—	—
3:30	—	—	—	10.7	5.23	86.8	328	5.62	—	44.02	—
3:35	—	—	—	10.5	5.21	86.6	329	5.51	16.5	—	—

Sample Condition Color: Colorless Odor: None Appearance: Clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See coc			

PID Reading: At wellhead 0

Comments: Needs new lock

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ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4-18-05

Site/Well No.: GM-32S | Replicate No.: N/A | Code No.: —

Weather: clear 75° | Sampling Time: Begin 2:01pm | End 2:06pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	51
Depth to Water (ft bmp)	42.47
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.53
Casing Diameter/Type	4" (0.65)
Gallons in Well	5.54
Gallons Pumped/Bailed Prior to Sampling	x3 = 17
Sample Pump Intake Setting (ft bmp)	Q=1 T=17 1V=6
Purge Time	begin 1:43pm end 2:01pm
Pumping Rate (gpm)	1
Evacuation Method	Rediflow pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	tan	Colorless		
Odor		NONE		
Appearance	turbid	CLEAR		
pH (s.u.)	5.95	6.07	6.12	6.22
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	267	272	295	304
Turbidity (NTU)	154	27	14.6	9.01
Temperature (°C)	16.8	17.0	17.2	17.0
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	1:43	1:49	1:55	2:01
Sampling Method	3 well volume			
Remarks	PID reading at wellhead zero			

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

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0105.00002 Task: 2 Well ID: GM-33D2

Date: 4/16/05 Sampled By: JHC/PP

Sampling Time: 7.45 pm Recorded By: JHC/PP

Weather: clear, 50°F 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): 510

Depth to Water (ft bmp): 50.26 Purge time Start: 6.45 pm Finish: 7:45 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
6:45	–	–	–	13.0	5.56	95.2	–	–	–	–	
6:50	–	–	–	12.3	5.77	97.3	63	7.31	–	50.35	–
6:55	–	–	–	13.4	5.47	96.6	101	7.06	–	–	–
7:00	–	–	–	13.6	5.45	95.4	118	7.09	–	54.40	–
7:05	–	–	–	13.8	5.44	94.7	169	7.09	–	–	–
7:10	–	–	–	13.9	5.72	94.7	188	7.13	–	50.40	–
7:15	–	–	–	13.8	5.91	94.5	185	7.23	–	–	–
7:20	–	–	–	13.5	6.69	102.6	168	7.17	–	50.39	–
7:25	–	–	–	13.5	6.81	104.1	168	7.10	–	–	–
7:30	–	–	–	13.4	9.05	109.6	140	1.06	–	50.38	–
7:35	–	–	–	13.3	9.37	111.7	95	6.86	–	–	–
7:40	–	–	–	13.3	9.58	112.4	65	6.83	–	50.38	–
7:45	–	–	–	13.3	9.61	113.0	58	6.81	–	–	–

Sample Condition Color: clear Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
COC			

PID Reading 0.0

Comments

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Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405
Task: 00002
Well ID: GH-34D
Date: 4/14/05
Sampled By: JHC/PP
Sampling Time: 3:13 pm
Recorded By: JHC/PP
Weather: 68, Clear
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): 314
Depth to Water (ft bmp): 12.30
Purge time Start: 2:10 pm Finish: 3:13

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:10	—	—	—	23.1	8.71	116.7	-262	3.36	—	—	—
2:15	—	—	—	20.1	9.13	126.1	-224	2.38	—	13.2	—
2:20	—	—	—	18.8	9.30	126.7	-234	1.40	—	—	—
2:25	—	—	—	18.5	9.49	130.1	-241	1.12	—	12.55	—
2:30	—	—	—	18.6	9.55	129.3	-254	0.92	—	—	—
2:35	—	—	—	18.1	9.58	136.5	-348	0.85	—	13.60	—
2:40	—	—	—	18.0	9.62	163.6	-350	0.83	—	—	—
2:45	—	—	—	17.7	8.97	186.1	-313	0.87	—	13.00	—
2:50	—	—	—	17.4	8.50	189.0	-286	1.00	—	—	—
2:55	—	—	—	17.1	7.80	191.4	-263	1.02	—	12.82	—
3:00	—	—	—	17.0	7.79	191.7	-250	1.16	—	—	—
3:05	—	—	—	17.1	7.27	192.2	-218	1.24	—	13.60	—
3:10	—	—	—	16.9	7.22	192.9	-206	1.33	—	—	—

Sample Condition
Color: —
Odor: —
Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
COC			

PID Reading: 0.0

Comments: —

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Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 | Task: 00002 | Well ID: GM-34D2

Date: 4/14/05 | Sampled By: JHC/PP

Sampling Time: 1:35pm | Recorded By: JHC/PP

Weather: clear, 68°F | 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): 515

Depth to Water (ft bmp): 16.45 | Purge time Start: 12:35 pm Finish: 1:35pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:35	—	—	—	15.7	7.55	80.4	-16.7	4.66	—	—	—
12:40	—	—	—	16.7	8.63	76.8	-56.8	2.83	—	15.86	—
12:45	—	—	—	17.6	8.88	74.0	-89.6	1.90	—	—	—
12:50	—	—	—	17.7	9.11	72.6	-133.0	1.14	—	16.24	—
12:55	—	—	—	17.6	9.32	72.9	-166.9	1.00	—	—	—
1:00	—	—	—	17.5	9.29	72.7	-181.3	0.84	—	16.11	—
1:05	—	—	—	17.7	9.34	72.8	-190.8	0.64	—	—	—
1:10	—	—	—	18.1	9.05	75.8	-189.0	0.73	—	16.5	—
1:15	—	—	—	18.9	9.08	92.2	-181.3	1.63	—	—	—
1:20	—	—	—	18.9	6.69	95.7	-173.4	1.99	—	16.29	—
1:25	—	—	—	18.6	6.36	94.2	-146.1	2.72	—	—	—
1:30	—	—	—	18.5	6.36	93.5	-143.2	3.79	—	16.47	—
1:35	—	—	—	18.5	6.31	93.7	-136.1	2.85	>250	—	—

Sample Condition Color: ~~clear~~ blackish | Odor: none | Appearance: silty Black

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: 0.0

Comments:

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 3-28-05

Site/Well No.: GM-35D2 | Replicate No.: N/A | Code No.: —

Weather: Rain 50's | Sampling Time: Begin 6:07pm | End 6:11pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	530
Depth to ~~Water~~ Packer (ft bmp)	507
Water-Level Elevation (ft)	/
Water Column in Well (ft)	23
Casing Diameter/Type	4"(0.65) / PVC
Gallons in Well	14.95 x3
Gallons Pumped/Bailed Prior to Sampling	45
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 4:45pm end 6:07pm
Pumping Rate (gpm)	/
Evacuation Method	Dedicated Bladder / Packer

Field Parameters

Field Parameters	I	1V Colorless	2V Colorless	3V Colorless
Color	Colorless			
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	6.38	5.96	5.87	5.90
Conductivity ~~(mS/cm)~~ (µmhos/cm)	116.3	118.8	118.8	118.6
Turbidity (NTU)	—	—	-	15.0
Temperature (°C)	15.8	15.7	15.7	15.8
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon container	—			

Sampling Method: 3 well volume

Remarks:

DTW = 40.78

507 - 40.78 x .43 + 50 = 255 PSI Rounded up

No PID due to Rain

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3-30-05

Site/Well No.: GM-36D | Replicate No.: MS/MSD | Code No.: —

Weather: clear 59° | Sampling Time: Begin 12:20 pm End 12:25 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	214
Depth to ~~Water~~ Packer (ft bmp)	202
Water-Level Elevation (ft)	/
Water Column in Well (ft)	12
Casing Diameter/Type	4" (0.65)
Gallons in Well	7.8 x3
Gallons Pumped/Bailed Prior to Sampling	24
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 11:10 AM end 12:20 pm
Pumping Rate (gpm)	/
Evacuation Method	Dedicated Bladder/packer

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.)	4.87	4.85	4.97	5.10
Conductivity ~~(mS/cm)~~ (µmhos/cm)	101.6	102.4	102.7	102.8
Turbidity (NTU)	—	—	—	21
Temperature (°C)	13.9	14.6	14.6	14.7
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Gallons purged	—	111	111	111

Sampling Method: 3 well volume

Remarks: DTW = 36.25

202 − 36.25 × .43 + 50 = 125 PSI (Rounded up)

Note: 1 = 5 gallons

PID not working

Note: Threaded coupler does not tighten well.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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

Water Sampling Log

Project: Northrop Grumman | Project No. N4001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3/30/05

Site/Well No.: GM-36D2 | Replicate No.: N/A | Code No.: —

Weather: Mostly cloudy 60° | Sampling Time: Begin 2:35pm End 2:39pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	540
Depth to ~~Water~~ Packer (ft bmp)	518
Water-Level Elevation (ft)	—
Water Column in Well (ft)	22
Casing Diameter/Type	4" (0.65) / PVC
Gallons in Well	14.3
Gallons Pumped/Bailed Prior to Sampling	x3 43
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1:05pm end 2:35pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Bladder/packer

Field Parameters	I	1V	2V	3V
Color	Colorless	Colorless	Colorless	Colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	10.58	10.84	8.43	7.19
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	226	374	163.8	135.1
Turbidity (NTU)	—	—	—	35
Temperature (°C)	14.8	14.7	14.8	14.5
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon container	—	✓✓✓	✓✓✓	✓✓✓

Sampling Method: 3 well volume

Remarks: DTW = 38.59

518 − 38.59 x .43 + 50 = 260 PSI

PID not working

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4-1-05

Site/Well No.: GM-37D2 | Replicate No.: Rep 4105 | Code No.: —

Weather: overcast 56° | Sampling Time: Begin 3:58 pm End 4:01 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	390
Depth to ~~Water~~ Packer (ft bmp)	367
Water-Level Elevation (ft)	/
Water Column in Well (ft)	23
Casing Diameter/Type	4" (0.65)
Gallons in Well	14.95
Gallons Pumped/Bailed Prior to Sampling	x3 = 45
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 12:55pm end 3:58
Pumping Rate (gpm)	/
Evacuation Method	Dedicated Bladder/packer

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.)	5.14	4.95	4.95	5.09
Conductivity ~~(mS/cm)~~ (µmhos/cm)	158.2	149.0	151.0	154.0
Turbidity (NTU)	—	—	—	8.0
Temperature (°C)	13.2	14.1	14.5	14.5
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	♦♦♦	♦♦♦	♦♦♦

Sampling Method: 3 well volume

Remarks: PID reading at wellhead zero

DTW = 40.84

367 - 40.84 x .43 + 50 = 190 PSI

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3-31-05

Site/Well No.: GM-38D | Replicate No.: N/A | Code No.: —

Weather: Partly cloudy 54° | Sampling Time: Begin 1:37pm End 1:41pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	340
Depth to ~~Water~~ Packer (ft bmp)	317
Water-Level Elevation (ft)	/
Water Column in Well (ft)	23
Casing Diameter/Type	4" (0.65)
Gallons in Well	14.95
Gallons Pumped/Bailed Prior to Sampling	x3 45
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 10:52AM end 1:37pm
Pumping Rate (gpm)	
Evacuation Method	Dedicated Bladder/packer

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.)	4.92	4.38	4.57	4.74
Conductivity ~~(mS/cm)~~ (µmhos/cm)	156.0	127.0	126.0	126.6
Turbidity (NTU)	—	—	—	9.5
Temperature (°C)	12.9	14.0	13.8	13.6
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	✓✓✓	✓✓✓	✓✓✓

Sampling Method: 3 well volume

Remarks: PID reading at wellhead: 4
Breathing Zone 0
DTW = 39.09
317 − 39.09 x .43 + 50 = 175 PSI
Rounded up

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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	Millisiemens 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: NY001348.0405 Task: 00002 Well ID: GM-39D2

Date: 3/25/05 Sampled By: PP

Sampling Time: 9:45 AM Recorded By: PP

Weather: overcast 45° 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 410 Bottom 420

Sounded Depth (ft bmp): 420 Pump Intake Depth (ft bmp): 415

Depth to Water (ft bmp): 43.32 Purge time Start: 8:45 AM Finish: 9:45 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
8:45	–	–	–	12.2	5.35	170.6	253	7.75	–	–	–
8:50	–	–	–	12.1	5.49	145.2	258	7.79	–	–	–
8:55	–	–	–	12.0	5.55	129.8	262	7.57	–	43.36	–
9:00	–	–	–	12.0	5.62	121.5	267	7.48	–	–	–
9:05	–	–	–	12.1	5.62	114.7	271	7.58	–	43.33	–
9:10	–	–	–	12.1	5.65	114.3	275	7.88	–	–	–
9:15	–	–	–	12.0	5.65	114.0	277	7.98	–	43. PP	–
9:20	–	–	–	12.0	5.66	114.0	281	7.68	–	43.33	–
9:25	–	–	–	12.0	5.66	114.0	283	7.88	–	–	–
9:30	–	–	–	12.0	5.67	113.8	286	7.87	–	–	–
9:35	–	–	–	12.2	5.69	113.7	290	7.16	–	43.33	–
9:40	–	–	–	12.4	5.69	113.6	291	7.51	–	–	–
9:45	–	–	–	12.4	5.69	113.4	291	7.55	15.0	–	–

Sample Condition Color: Colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead Zero

Comments: ——

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4-18-05

Site/Well No.: GM-70D2 | Replicate No.: MS/MSD | Code No.: —

Weather: clear 74° | Sampling Time: Begin 12:12pm End 12:18pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	330
Depth to ~~Water~~ packer (ft bmp)	308
Water-Level Elevation (ft)	—
Water Column in Well (ft)	22
Casing Diameter/Type	4" (0.65) PVC
Gallons in Well	14.3
Gallons Pumped/Bailed Prior to Sampling	x3 = 43
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 10:50 AM end 12:12pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Bladder packer

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.)	4.68	5.08	5.20	5.33
Conductivity ~~(mS/cm)~~ (µmhos/cm)	206	104.1	100.5	99.8
Turbidity (NTU)	—	—	—	21.3
Temperature (°C)	16.2	16.4	16.4	16.6
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	###	###	###

Sampling Method: 3 well volume

Remarks: 170 psi (taken off previous sampling log)

PID at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: PB

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	Millisiemens 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 GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3-28-05

Site/Well No.: GM-71D2 | Replicate No.: N/A | Code No.: —

Weather: Rain 50's | Sampling Time: Begin 1:35pm | End 1:39pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	464
Depth to ~~Water~~ Packer (ft bmp)	442
Water-Level Elevation (ft)	/
Water Column in Well (ft)	22
Casing Diameter/Type	4" (0.65) / PVC
Gallons in Well	14.3
Gallons Pumped/Bailed Prior to Sampling	x3 = 43
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 12:23pm end 1:35pm
Pumping Rate (gpm)	/
Evacuation Method	Dedicated Bladder/packer

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.)	6.32	5.34	5.28	5.29
Conductivity ~~(mS/cm)~~ (µmhos/cm)	187.9	217	217	217
Turbidity (NTU)	—	—	—	16.1
Temperature (°C)	14.6	14.5	14.4	14.4
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	# # #	# # #	# # #

Sampling Method: 3 well volume

Remarks: DTW = 42.73

442 - 42.73 x .43 + 50 = 225 Rounded up PSI

No PID due to Rain

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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: NY001348.0405 Task: 00002 Well ID: GM-73D
Date: 3/22/05 Sampled By: PP
Sampling Time: 3:30pm Recorded By: PP
Weather: Partly cloudy 57° 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 Pump Intake Depth (ft bmp): 406
Depth to Water (ft bmp): 45.27 Purge time Start: 2:30pm Finish: 3:30pm

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
2:30	–	–	–	11.2	5.12	117.5	306	7.54	–	–	–
2:35	–	–	–	11.8	5.00	117.9	309	6.37	–	–	–
2:40	–	–	–	12.4	5.00	117.7	312	6.82	–	45.31	–
2:45	–	–	–	12.5	4.99	117.3	314	7.45	–	–	–
2:50	–	–	–	12.5	4.99	117.6	313	7.41	–	45.31	–
2:55	–	–	–	12.7	5.00	117.1	314	7.13	–	–	–
3:00	–	–	–	12.7	5.00	117.1	316	7.66	–	45.32	–
3:05	–	–	–	12.8	4.99	116.7	316	7.68	–	–	–
3:10	–	–	–	12.7	4.99	116.8	317	7.72	–	45.33	–
3:15	–	–	–	12.7	4.99	116.6	317	7.77	–	–	–
3:20	–	–	–	12.7	4.99	116.8	318	7.29	–	45.34	–
3:25	–	–	–	12.7	4.99	116.4	319	7.53	–	–	–
3:30	–	–	–	12.7	4.99	116.6	319	7.73	15.6	45.34	–

Sample Condition Color: Colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 1.0; Breathing zone 0

Comments: /

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-73D2

Date: 3/22/05 Sampled By: PP

Sampling Time: 4:55pm Recorded By: PP

Weather: Clear 51° Coded Replicate No.: Rep 32205

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): 542

Depth to Water (ft bmp): 47.54 Purge time Start: 3:55pm Finish: 4:55pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (μS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
3:55	—	—	—	12.4	5.23	116.4	309	8.06	—	—	—
4:00	—	—	—	10.9	5.25	116.9	308	7.99	—	—	—
4:05	—	—	—	10.9	5.19	116.6	309	6.11	—	45.13	—
4:10	—	—	—	10.8	5.19	116.2	309	5.96	—	—	—
4:15	—	—	—	10.6	5.06	115.9	313	6.17	—	44.96	—
4:20	—	—	—	10.5	5.08	114.0	314	6.38	—	—	—
4:25	—	—	—	10.4	5.07	111.9	315	6.51	—	45.12	—
4:30	—	—	—	10.4	5.05	112.1	315	6.35	—	—	—
4:35	—	—	—	10.5	5.06	111.9	316	6.88	—	45.08	—
4:40	—	—	—	10.5	5.06	112.1	316	6.76	—	—	—
4:45	—	—	—	10.5	5.07	112.3	317	6.42	—	43.78	—
4:50	—	—	—	10.6	5.07	112.6	317	6.76	—	—	—
4:55	—	—	—	10.6	5.07	112.6	317	6.75	15.2	—	—

Sample Condition Color: Colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead zero

Comments: M-scope not working well

G:\APROJECT\...\Low-Flow GW-Samp

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-74I
Date: 3/22/05 Sampled By: PB
Sampling Time: 11:05AM Recorded By: PB
Weather: clear 52° 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 Pump Intake Depth (ft bmp): 104
Depth to Water (ft bmp): 41.58 Purge time Start: 10:20AM Finish: 11:05AM

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
10:20	—	—	—	10.5	5.36	102.2	214	9.61	—	—	—
10:25	—	—	—	10.6	5.42	101.6	229	9.40	—	—	m-scope not working
10:30	—	—	—	10.4	5.47	102.4	236	8.86	—	—	—
10:35	—	—	—	10.2	5.48	102.7	241	9.44	—	—	m-scope not working
10:40	—	—	—	10.1	5.48	102.8	245	9.57	—	—	—
10:45	—	—	—	10.1	5.49	102.6	248	9.01	—	41.65	—
10:50	—	—	—	10.1	5.49	102.6	252	9.51	—	—	—
10:55	—	—	—	10.2	5.50	102.5	254	9.21	—	41.61	—
11:00	—	—	—	10.2	5.50	102.9	257	9.18	—	—	—
11:05	—	—	—	10.2	5.50	102.9	260	9.03	16.0	41.60	—

Sample Condition Color: colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At Wellhead Zero

Comments: Needs new lock

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-74D
Date: 3/22/05 Sampled By: PP
Sampling Time: 12:30 pm Recorded By: PP
Weather: clear 52° 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): 300
Depth to Water (ft bmp): 46.39 Purge time Start: 11:30 AM Finish: 12:30 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
11:30	—	—	—	5.21	10.0	100.5	286	9.84	—	—	—
11:35	—	—	—	4.79	10.0	98.7	298	6.02	—	46.38	—
11:40	—	—	—	4.79	10.3	88.7	302	6.27	—	—	—
11:45	—	—	—	4.78	10.6	88.6	308	6.22	—	46.39	—
11:50	—	—	—	4.78	10.6	88.9	313	6.13	—	—	—
11:55	—	—	—	4.78	10.6	89.2	315	6.36	—	46.39	—
12:00	—	—	—	4.78	10.7	89.0	316	6.20	—	—	—
12:05	—	—	—	4.78	10.7	89.0	318	6.26	—	46.39	—
12:10	—	—	—	4.78	10.7	89.1	319	6.48	—	—	—
12:15	—	—	—	4.78	10.6	89.2	321	6.37	—	—	—
12:20	—	—	—	4.79	10.8	89.3	322	6.22	—	46.39	—
12:25	—	—	—	4.79	10.8	89.3	323	6.36	—	—	—
12:30	—	—	—	4.79	10.8	89.8	323	6.56	15.2	—	—

Sample Condition Color: Colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead Zero

Comments: /

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-74D2
Date: 3/22/05 Sampled By: PB
Sampling Time: 1:55pm Recorded By: PB
Weather: Mostly cloudy 55° 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 542 Bottom 562
Sounded Depth (ft bmp): 562 Pump Intake Depth (ft bmp): 552
Depth to Water (ft bmp): 52.62 Purge time Start: 12:55pm Finish: 1:55pm

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
12:55	—	—	—	10.7	5.03	76.6	312	7.21	—	—	—
1:00	—	—	—	11.7	5.05	75.9	309	1.16	—	—	—
1:05	—	—	—	11.3	5.08	76.6	306	1.84	—	52.61	—
1:10	—	—	—	11.1	5.12	74.7	305	2.35	—	—	—
1:15	—	—	—	11.1	5.12	73.0	306	2.53	—	—	—
1:20	—	—	—	11.2	5.08	73.6	306	2.67	—	52.65	—
1:25	—	—	—	11.0	5.08	74.0	306	2.94	—	—	—
1:30	—	—	—	11.1	5.06	74.6	307	2.78	—	52.65	—
1:35	—	—	—	11.1	5.05	75.9	307	3.07	—	—	—
1:40	—	—	—	11.3	5.03	76.9	307	3.18	—	52.65	—
1:45	—	—	—	11.5	5.04	77.3	308	3.14	—	—	—
1:50	—	—	—	11.6	5.01	77.9	307	3.27	—	52.64	—
1:55	—	—	—	11.4	5.03	78.0	307	3.25	15.7	—	—

Sample Condition Color: Colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At wellhead 2.1 ; Breathing Zone 0

Comments: /

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405.0002 Task: 00002 Well ID: GM-75D2

Date: 4/16/05 Sampled By: JHC/PP

Sampling Time: 2:05 Recorded By: JHC/PP

Weather: Clear, 60°F 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): 515

Depth to Water (ft bmp): 35.86 Purge time Start: 1:05 pm **Finish:** 2:05 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
1:05	–	–	–	15.5	5.30	114.8	196	4.43	–	–	–
1:10	–	–	–	15.5	5.27	137.9	210	3.95	–	35.85	–
1:15	–	–	–	15.7	5.27	139.7	221	4.23	–	–	–
1:20	–	–	–	16.0	4.54	139.6	229	4.41	–	35.85	–
1:25	–	–	–	16.0	4.38	139.1	231	4.30	–	–	–
1:30	–	–	–	16.0	5.31	137.0	236	4.34	–	35.85	–
1:35	–	–	–	16.0	5.29	136.1	241	4.71	–	–	–
1:40	–	–	–	16.0	5.26	136.2	242	4.63	–	35.85	–
1:45	–	–	–	16.0	5.26	136.3	246	4.66	–	–	–
1:50	–	–	–	16.1	5.28	136.2	247	4.60	–	35.85	–
1:55	–	–	–	16.1	5.29	136.1	250	4.85	–	–	–
2:00	–	–	–	16.1	5.29	135.6	251	4.67		35.88	–
2:05	–	–	–	16.0	5.29	135.6	254	4.88	6.66	–	–

Sample Condition Color: Clear Odor: none Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
VOC			

PID Reading: At wellhead 0

Comments: /

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ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman Project No. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, NY Date: 4/13/05

Site/Well No.: GM-78S Replicate No.: Rep 4/13/05 Code No.: —

Weather: Partly cloudy 50° Sampling Time: Begin 12:30pm End 12:36pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	70.00
Depth to Water (ft bmp)	41.43
Water-Level Elevation (ft)	—
Water Column in Well (ft)	28.57
Casing Diameter/Type	4" (0.65)
Gallons in Well	18.57
Gallons Pumped/Bailed Prior to Sampling	x3 = 56
Sample Pump Intake Setting (ft bmp)	Q=2 T=28 IV=10
Purge Time	begin 12:00 end 12:36pm
Pumping Rate (gpm)	2gpm
Evacuation Method	Rediflow Pump

Field Parameters	I	IV	2V	3V
Color	clear	light grey	clear	clear
Odor	none	none	none	none
Appearance	clear	slightly turbid	clear	clear
pH (s.u.)	6.65	6.65	6.52	6.55
Conductivity (~~mS/cm~~) (~~µmhos/cm~~) µS	249	258	271	262
Turbidity (NTU)	4.84	17.8	9.71	7.55
Temperature (°C)	15.0	16.0	16.1	16.2
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	12:00	12:10	12:20	12:30

Sampling Method: 3 well Volume

Remarks: PID reading at wellhead 125ppm; Breathing Zone = Zero. Allowed to vent. At start of purge PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC IBP

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: NY001348.0405 Task: 00002 Well ID: GM-78I
Date: 4/13/05 Sampled By: JC/BP
Sampling Time: 11:30AM Recorded By: JC
Weather: Partly Cloudy, 50°F Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Rediflow Pump/ Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 90 Bottom 110
Sounded Depth (ft bmp): 110 Pump Intake Depth (ft bmp): 100
Depth to Water (ft bmp): 41.76 Purge time Start: 10:45 AM Finish: 11:30 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
10:45	—	—	—	16.1	6.53	180.2	169	4.09	2.75	41.76	—
10:50	—	—	—	16.1	6.64	180.3	173	3.83	~~3.64~~	<2.33 BP	—
10:55	—	—	—	16.0	6.56	181.6	174	3.92	2.36	41.74	—
11:00	—	—	—	16.1	6.60	180.4	176	3.92	2.59	—	—
11:05	—	—	—	15.9	6.62	181.2	178	3.92	2.58	41.72	—
11:10	—	—	—	16.2	6.63	182.0	180	3.73	2.66	—	—
11:15	—	—	—	16.2	6.63	182.2	182	3.78	2.55	41.73	—
11:20	—	—	—	15.9	6.63	181.5	182	3.70	2.57	—	—
11:25	—	—	—	16.2	6.63	181.5	184	3.93	2.43	41.74	—
11:30	—	—	—	16.1	6.64	181.7	184	3.93	2.54	—	—

Sample Condition Color: / Odor: / Appearance: /

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: 15 ppm / Breathing Zone - 0

Comments: /

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-79I
Date: 3/23/05 Sampled By: PP
Sampling Time: 10:55 AM Recorded By: PP
Weather: Hail, overcast 42 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): 175
Depth to Water (ft bmp): 41.74 Purge time Start: 10:10 AM Finish: 10:55 AM

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
10:10	—	—	—	12.0	5.35	111.2	258	7.73	—	—	—
10:15	"	"	"	13.3	5.38	110.1	266	6.50	—	41.63	—
10:20	"	"	"	13.0	5.42	109.7	272	6.36	—	—	—
10:25	"	"	"	12.9	5.47	108.8	279	6.12	—	—	—
10:30	—	"	"	12.8	5.47	108.8	281	6.59	—	41.64	—
10:35	"	"	"	12.9	5.45	108.5	287	6.06	—	—	—
10:40	"	"	"	12.8	5.49	108.9	291	6.44	—	—	—
10:45	"	"	"	12.7	5.49	108.8	293	6.71	—	—	—
10:50	"	"	"	12.6	5.51	108.6	296	6.74	—	41.63	—
10:55	"	"	"	12.6	5.50	108.5	298	6.85	16.6	—	—

Sample Condition Color: Colorless Odor: None Appearance: clear
Sample Collection

Parameter:	Container:	No.
See COC		

PID Reading: Hail/Snow
Comments: No lock on well

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405
Task: 00002
Well ID: GM-79D
Date: 3/23/05
Sampled By: PP
Sampling Time: 12:20pm
Recorded By: PP
Weather: overcast, Hail, Rain 42
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): 285
Depth to Water (ft bmp): 42.70
Purge time Start: 11:20 AM Finish: 12:20pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
11:20	—	—	—	11.6	5.59	103.1	303	5.89	—	—	—
11:25	—	—	—	12.5	5.41	100.1	307	3.12	—	42.74	—
11:30	—	—	—	12.7	5.41	97.1	309	3.45	—	—	—
11:35	—	—	—	12.8	5.41	95.6	310	4.22	—	—	—
11:40	—	—	—	12.8	5.41	95.4	312	3.95	—	42.73	—
11:45	—	—	—	12.9	5.41	96.7	314	3.98	—	—	—
11:50	—	—	—	12.9	5.41	97.1	314	4.18	—	—	—
11:55	—	—	—	12.9	5.41	97.2	314	4.15	—	—	—
12:00	—	—	—	13.1	5.41	97.3	319	4.09	—	42.74	—
12:05	—	—	—	13.1	5.41	97.3	315	4.02	—	—	—
12:10	—	—	—	13.2	5.41	97.3	315	4.03	—	—	—
12:15	—	—	—	13.0	5.41	97.4	315	3.99	—	42.74	—
12:20	—	—	—	13.0	5.41	97.4	315	3.94	15.7	—	—

Sample Condition Color: Colorless Odor: None Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: Hail / Rain

Comments: —

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ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: HN-24I
Date: 4/12/05 Sampled By: JC/PP
Sampling Time: 1:45pm Recorded By: JC/PP
Weather: clear 49° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Rediflow Pump/Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 148 Bottom 158
Sounded Depth (ft bmp): 158 Pump Intake Depth (ft bmp): 153
Depth to Water (ft bmp): 56.72 Purge time Start: 12:45 Finish: 1:45

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~mS/cm~~ µS	ORF (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:45	—	—	—	13.4	5.97	512	—	6.42	—	—	—
12:50	—	—	—	15.0	5.96	491	—	5.85	—	56.72	—
12:55	—	—	—	15.0	5.96	492	—	5.76	—	—	—
1:00	—	—	—	14.6	5.90	490	-1129	5.52	—	56.72	—
1:05	—	—	—	14.4	5.92	491	157.8	5.20	—	—	—
1:10	—	—	—	14.4	5.97	491	1047	5.16	—	56.77	—
1:15	—	—	—	14.5	5.97	490	1700	5.27	—	—	—
1:20	—	—	—	14.5	6.01	490	98	5.40	—	56.79	—
1:25	—	—	—	14.5	6.01	491	228	5.37	—	—	—
1:30	—	—	—	14.6	6.01	490	585	5.24	—	56.80	—
1:35	—	—	—	14.4	6.01	491	-1583	5.41	—	—	—
1:40	—	—	—	14.4	6.03	491	1767	5.28	—	56.80	—
1:45	—	—	—	14.6	6.03	491	1217	5.29	28	—	—

Sample Condition Color: Colorless Odor: none Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
COC			

PID Reading: At Wellhead Zero

Comments: ORP meter not working well

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 0002 Well ID: HN-29I
Date: 4/12/05 Sampled By: PP/JC
Sampling Time: 4:15pm Recorded By: JC
Weather: Windy, clear 54° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Rediflow Pump / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 120 Bottom 130
Sounded Depth (ft bmp): 130 Pump Intake Depth (ft bmp): 125
Depth to Water (ft bmp): 47.44 Purge time Start: 3:30 pm Finish: 4:15pm

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
3:30	—	—	—	14.9	10.9	329	—	5.41	—		—
3:35	—	—	—	15.3	11.1	366	—	5.60	—	50.93	—
3:40	—	—	—	15.5	11.0	394	—	5.59	—		—
3:45	—	—	—	15.5	11.0	399	—	5.57	—	51.03	—
3:50	—	—	—	15.5	11.0	394	—	5.59	—		—
3:55	—	—	—	15.6	10.9	389	—	5.57	—	51.12	—
4:00	—	—	—	15.6	10.9	379	—	5.62	—		—
4:05	—	—	—	15.6	11.0	372	—	5.64	—	51.13	—
4:10	—	—	—	15.7	11.0	365	—	5.63	—		—
4:15	—	—	—	15.7	10.9	361	—	5.65	—	51.12	—
4:20	—	—	—	—	—	—	—	—	—	—	—
4:25	—	—	—	—	—	—	—	—	—	—	—
4:30	—	—	—	—	—	—	—	—	—	—	—

Sample Condition Color: clear Odor: none Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: 0.7, Breathing Zone 0

Comments: Turbidity meter not working.
ORP meter not working

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 | Task: 00002 | Well ID: HN-29D
Date: 4/14/05 | Sampled By: JHC/PP
Sampling Time: 10:50 AM | Recorded By: JHC
Weather: Clear, 58°F | Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC | Purge Method: NON-dedicated Bladder/Low Flow
Casing Diameter: 4" | Screen Interval (ft bmp): Top 210 Bottom 220
Sounded Depth (ft bmp): 220 | Pump Intake Depth (ft bmp): 215
Depth to Water (ft bmp): 47.75 | Purge time Start: 9:50 AM Finish: 10:50 AM

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
9:50	—	—	—	14.1	7.89	141.5	-52.8	7.33	—	—	—
9:55	—	—	—	14.8	9.32	156.1	-83.4	6.32	—	47.59	—
10:00	—	—	—	14.8	8.90	154.4	-69.9	5.77	—	—	—
10:05	—	—	—	14.8	8.06	152.4	-37.1	6.18	—	47.37	—
10:10	—	—	—	14.8	7.49	152.8	-18.6	6.01	—	—	—
10:15	—	—	—	14.8	7.50	153.1	-15.2	6.23	—	47.78	—
10:20	—	—	—	14.8	7.43	153.2	-14.1	6.21	—	—	—
10:25	—	—	—	14.8	7.40	153.1	-14.1	5.71	—	47.74	—
10:30	—	—	—	14.8	7.41	153.1	-11.8	5.94	—	—	—
10:35	—	—	—	14.8	7.44	153.0	-11.4	5.72	—	47.70	—
10:40	—	—	—	14.8	7.50	152.8	-7.2	6.07	—	—	—
10:45	—	—	—	14.8	7.52	152.7	-7.1	6.20	—	47.77	—
10:50	—	—	—	14.8	7.55	152.8	-7.0	6.09	clear	—	—

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At Wellhead zero

Comments:

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3/14/05

Site/Well No.: HN-405 | Replicate No.: N/A | Code No.: —

Weather: clear 43° | Sampling Time: Begin 2:33pm End 2:35pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	59
Depth to Water (ft bmp)	50.61
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.39
Casing Diameter/Type	4" (0.65) PVC
Gallons in Well	5.45
Gallons Pumped/Bailed Prior to Sampling	16
Sample Pump Intake Setting (ft bmp)	Q=1 T=16 1V=6
Purge Time	begin 2:15pm end 2:33pm
Pumping Rate (gpm)	1 gpm
Evacuation Method	Redflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	—	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	5.46	5.47	5.44	5.45
Conductivity ~~(mS/cm)~~ (µmhos/cm)	— 89.3	— 118.7	— 146.0	— 170.1
Turbidity (NTU)	—	—	—	25.3
Temperature (°C)	14.6	15.3	15.6	15.3
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	2:15	2:21	2:27	2:33

Sampling Method: 3 well Volume

Remarks: PID not working

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: NY001348.0405
Task: 00002
Well ID: HN-40I
Date: 3/14/05
Sampled By: GW
Sampling Time: 3:35pm
Recorded By: PP
Weather: clear 43°
Coded Replicate No.: N/A

Instrument Identification

Water Quality Meter(s): —
Serial #: —

Purging Information

Casing Material: PVC
Purge Method: Rediflow Pump/Low Flow
Casing Diameter: 4"
Screen Interval (ft bmp): Top 108 Bottom 118
Sounded Depth (ft bmp): 118
Pump Intake Depth (ft bmp): 113
Depth to Water (ft bmp): 51.45
Purge time Start: 2:50pm Finish: 3:35pm

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
2:50	–	–	–	14.5	5.63	194.9	234	7.02	–	51.45	–
2:55	–	–	–	14.1	5.74	197.3	254	6.18	–	–	–
3:00	–	–	–	13.3	5.74	217	258	5.86	–	51.42	–
3:05	–	–	–	12.9	5.74	221	261	6.29	–	–	–
3:10	–	–	–	12.8	5.73	223	263	6.20	–	51.44	–
3:15	–	–	–	13.0	5.74	221	263	6.51	–	–	–
3:20	–	–	–	13.3	5.74	218	263	6.50	–	51.36	–
3:25	–	–	–	13.5	5.74	216	265	6.45	–	–	–
3:30	–	–	–	13.6	5.74	216	266	6.40	–	51.38	–
3:35	–	–	–	13.7	5.73	216	267	6.39	34.5	–	–

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: Not Working

Comments: ~1 m scope

Water Sampling Log

Project: Northrop-Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3/14/05

Site/Well No.: HN-42S | Replicate No.: N/A | Code No.: —

Weather: clear 430 | Sampling Time: Begin 12:53pm End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	60
Depth to Water (ft bmp)	52.92
Water-Level Elevation (ft)	—
Water Column in Well (ft)	7.08
Casing Diameter/Type	4" (0.65) PVC
Gallons in Well	4.6
Gallons Pumped/Bailed Prior to Sampling	+3 14
Sample Pump Intake Setting (ft bmp)	Q=1 T=14 IV=5
Purge Time	begin 12:38pm end 12:53pm
Pumping Rate (gpm)	1gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	cloudy	colorless	colorless	colorless
Odor	—	—	—	—
Appearance	Turbid	clear	clear	clear
pH (s.u.)	7.51	6.12	5.92	5.89
Conductivity ~~(mS/cm)~~ (µmhos/cm)	189.9	197.7	223	235
Turbidity (NTU)	—	—	—	29.4
Temperature (°C)	14.1	15.2	15.3	15.3
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	12:38pm	12:43	12:48	12:53

Sampling Method: 3 well volume

Remarks: PID not working

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GWIPP

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: NY001348.0405 Task: 00002 Well ID: HN-42I
Date: 3/14/05 Sampled By: GW
Sampling Time: 12:20pm Recorded By: PP
Weather: Clear 43° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Rediflow pump/Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 100 Bottom 110
Sounded Depth (ft bmp): 110 Pump Intake Depth (ft bmp): 105
Depth to Water (ft bmp): 53.20 Purge time Start: 11:35 AM Finish: 12:20pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (μS)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
11:35	–	–	–	12.8	11.18	236	-11	5.70	–		–
11:40	–	–	–	12.4	11.19	245	-10	5.51	–	53.24	–
11:45	–	–	–	11.7	11.21	285	-2	5.17	–		–
11:50	–	–	–	11.6	11.13	248	5	5.05	–	53.25	–
11:55	–	–	–	11.8	11.15	225	11	4.89	–		–
12:00	–	–	–	11.7	11.06	219	16	4.99	–	53.23	–
12:05	–	–	–	11.7	10.92	213	22	4.97	–		–
12:10	–	–	–	11.8	10.85	209	24	5.03	–	53.25	–
12:15	–	–	–	12.0	10.81	196.5	25	4.91	–		–
12:20	–	–	–	12.3	10.77	194.0	28	5.17	62.6	53.25	–
12:25	–	–	–	–	–	–	–	–	–	–	–
12:30	–	–	–	–	–	–	–	–	–	–	–
12:35	–	–	–	–	–	–	–	–	–	–	–

Sample Condition Color: Colorless Odor: None Appearance: Clear
Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: Not working

Comments: -1 mscope

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/12/05

Site/Well No.: FW-03 | Replicate No.: N/A | Code No.: —

Weather: Clear 54° | Sampling Time: Begin 2:49 pm End 2:52 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	64
Depth to Water (ft bmp)	57.95
Water-Level Elevation (ft)	/
Water Column in Well (ft)	6.05
Casing Diameter/Type	2" (0.16)
Gallons in Well	.968
Gallons Pumped/Bailed Prior to Sampling	x3 2.9
Sample Pump Intake Setting (ft bmp)	Q=.5 T=6 IV=2
Purge Time	begin 2:41 end 2:49
Pumping Rate (gpm)	.5gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	IV	2V	3V
Color	reddish brown	brown	brown	brown
Odor	moderate	moderate	moderate	moderate
Appearance	turbid	turbid	turbid	turbid
pH (s.u.)	7.61	7.81	7.86	7.86
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	362	388	389	385
Turbidity (NTU)	>200	>200	>200	>200
Temperature (°C)	15.0	16.3	16.7	16.8
Dissolved Oxygen (mg/L)	—	—	—	—
Time / Salinity (%)	2:43	2:45	2:47	2:49

Sampling Method: 3 well volume

Remarks: PID reading at wellhead = 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC/BB

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. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/13/05

Site/Well No.: MW-1 GF | Replicate No.: N/A | Code No.: —

Weather: Partly cloudy 50° | Sampling Time: Begin 3:56 pm | End 3:59 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	58
Depth to Water (ft bmp)	46.42
Water-Level Elevation (ft)	/
Water Column in Well (ft)	11.58
Casing Diameter/Type	4" (0.65) / PVC
Gallons in Well	7.5
Gallons Pumped/Bailed Prior to Sampling	x3 = 23
Sample Pump Intake Setting (ft bmp)	Q=2 T=12 IV=4
Purge Time	begin 3:44 pm end 3:56 pm
Pumping Rate (gpm)	2 gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V	4V
Color	Colorless	colorless	colorless	colorless	—
Odor	None	none	none	None	—
Appearance	Cloudy	cloudy	cloudy	clear	—
pH (s.u.)	6.75	6.80	6.71	6.75	—
Conductivity ~~(mS/cm)~~	—	—	—	—	—
(µmhos/cm)	252	262	287	290	—
Turbidity (NTU)	44.3	38.6	39.8	37.5	—
Temperature (°C)	18.2	18.9	19.0	19.0	—
Dissolved Oxygen (mg/L)	—	—	—	—	—
~~Salinity (%)~~ Time	3:44	3:48	3:52	3:56	4:00

Sampling Method: 3 well volume

Remarks: PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JHC / [illegible]

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	Millisiemens 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 GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman Project No. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, NY Date: 4-13-05

Site/Well No.: MW-2 GF Replicate No.: N/A Code No.: —

Weather: Partly Cloudy 50° Sampling Time: Begin 4:45pm End 4:49pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	59
Depth to Water (ft bmp)	44.77
Water-Level Elevation (ft)	—
Water Column in Well (ft)	14.23
Casing Diameter/Type	4" (0.65)
Gallons in Well	9.25
Gallons Pumped/Bailed Prior to Sampling	x 3 = 28
Sample Pump Intake Setting (ft bmp)	Q=2 T=14 1V=5
Purge Time	begin 4:30pm end 4:45pm
Pumping Rate (gpm)	2gpm
Evacuation Method	Rediflow Pump

Field Parameters

	I	1V	2V	3V
Color		Colorless		
Odor		NONE		
Appearance		CLEAR		
pH (s.u.)	7.41	7.66	7.65	7.67
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	139.4	142.2	139.9	138.9
Turbidity (NTU)	30.9	53.9	37.2	26.2
Temperature (°C)	15.9	15.8	15.8	15.9
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	4:30	4:35	4:40	4:45pm

Sampling Method: 3 well volume

Remarks: PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: TC/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. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, NY Date: 4/13/05

Site/Well No.: MW-3R Replicate No.: N/A Code No.: —

Weather: Partly cloudy 50° Sampling Time: Begin 2:31 End 2:37 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	55
Depth to Water (ft bmp)	34.63
Water-Level Elevation (ft)	—
Water Column in Well (ft)	20.37
Casing Diameter/Type	2" (0.16) / PVC
Gallons in Well	3.26 × 3
Gallons Pumped/Bailed Prior to Sampling	10
Sample Pump Intake Setting (ft bmp)	Q = 1 T = 10 1V = 4
Purge Time	begin 2:15 pm end 2:31 pm
Pumping Rate (gpm)	1 gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I Light Brown	1V light brown	2V grey	3V light grey	4V clear
Color					
Odor	None	none	none	none	none
Appearance	turbid	turbid	turbid	slightly turbid	clear
pH (s.u.)	6.64	6.66	6.67	6.67	6.66 6.67
Conductivity (~~mS/cm~~ µS (~~umhos/cm~~)	117.0	118.9	118.2	118.1	117.
Turbidity (NTU)	>200	344	113	61	36
Temperature (°C)	14.4	14.4	14.5	14.6	14.7
Dissolved Oxygen (mg/L)	—	—	—	—	—
~~Salinity (%)~~ Time	2:15	2:19	2:23	2:27	2:31
Sampling Method	3 well volume				
Remarks	PID reading at wellhead Zero				

Constituents Sampled	Container Description	Number	Preservative
VOC			

Sampling Personnel: JHC/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	Millisiemens 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

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 | Task: 00002 | Well ID: N-10624

Date: 4/16/05 | Sampled By: JHC

Sampling Time: 5:32 pm | Recorded By: PP / JHC

Weather: Clear, 60°F | Coded Replicate No.: N/A

Instrument Identification

Water Quality Meter(s): ______ Serial #: ______

Purging Information

Casing Material: Steel | Purge Method: Non-dedicated Bladder pump

Casing Diameter: 2" | Screen Interval (ft bmp): Top 190 Bottom 194

Sounded Depth (ft bmp): 194 | Pump Intake Depth (ft bmp): 192

Depth to Water (ft bmp): 30.84 | Purge time Start: 4:30 pm Finish: 5:30 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
4:30	–	–	–	15.4	9.32	224	-3	2.69	–	–	–
4:35	–	–	–	14.2	9.29	169.5	-33	2.09	3.81	34.25	–
4:40	–	–	–	14.1	9.31	146.0	-54	2.69	–	–	–
4:45	–	–	–	14.5	9.45	121	-113	1.78	–	36.30	–
4:50	–	–	–	14.3	9.60	117.1	-140	1.68	–	–	–
4:55	–	–	–	14.2	9.65	119.3	-136	1.56	–	41.2	–
5:00	–	–	–	14.1	9.66	118.9	-150	1.68	–	–	–
5:05	–	–	–	14.0	9.74	118.3	-156	1.60	–	35.2	–
5:10	–	–	–	13.9	9.73	118.2	-152	1.62	–	–	–
5:15	–	–	–	13.9	9.74	119.7	-153	1.53	–	46.1	–
5:20	–	–	–	13.8	9.74	120.1	-147	1.45	–	–	–
5:25	–	–	–	13.8	9.73	120.6	-154	1.53	–	47.0	–
5:30	–	–	–	13.8	9.73	120.2	-151	1.48	52.6	–	–

Sample Condition Color: dark brown Odor: None Appearance: slightly turbid

Sample Collection

Parameter:	Container:	No.	Preservative:
COC			

PID Reading: 0.0

Comments: ______

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: N-10627
Date: 4/16/05 Sampled By: JHC/PP
Sampling Time: ~~JHC~~ Recorded By: JHC/PP
Weather: Clear, 63°F 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 290 Bottom 295
Sounded Depth (ft bmp): 295 Pump Intake Depth (ft bmp): 292.5
Depth to Water (ft bmp): 32.18 Purge time Start: 2:50 pm Finish: 3:50 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:50	–	–	–	16.3	6.96	173.7	–	7.37	–	–	–
2:55	–	–	–	16.2	7.38	216	172	4.32	–	33.50	–
3:00	–	–	–	16.0	8.29	264	131	2.10	–	–	–
3:05	–	–	–	16.0	9.17	277	84	1.56	–	33.80	–
3:10	–	–	–	15.6	9.63	285	65	1.19	–	–	–
3:15	–	–	–	15.5	9.71	280	-105	1.04	–	33.84	–
3:20	–	–	–	15.2	9.73	278	-121	.96	–	–	–
3:25	–	–	–	15.2	9.75	279	-128	1.01	–	33.66	–
3:30	–	–	–	15.0	9.75	275	-131	.97	–	–	–
3:35	–	–	–	15.0	9.69	260	-131	.90	–	33.74	–
3:40	–	–	–	14.8	9.64	242	-126	.88	–	–	–
3:45	–	–	–	14.7	9.59	230	-123	.82	–	33.71	–
3:50		–	–	14.7	9.54	224	-117	0.87	62	–	–
~~3:55~~											

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

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: At Wellhead zero

Comments:

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No.: NY001348.0405.0002 | Page 1 of 1

Site Location: Bethpage, New York | Date: 4/16/05

Site/Well No.: N-10631 | Replicate No.: N/A | Code No.: —

Weather: Clear, 55°F | Sampling Time: Begin 12:20 pm | End 12:23 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67
Depth to Water (ft bmp)	38.69
Water-Level Elevation (ft)	✓
Water Column in Well (ft)	28.31
Casing Diameter/Type	2" (0.16) Steel
Gallons in Well	4.53
Gallons Pumped/Bailed Prior to Sampling	x3 14
Sample Pump Intake Setting (ft bmp)	Q=1 T=14 IV=5
Purge Time	begin 12:03 pm end 12:20 pm
Pumping Rate (gpm)	1 gpm
Evacuation Method	Redi-flow Pump

Field Parameters	I	IV	2V	3V
Color	dark grey	dark grey	clear	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	7.52	6.51	6.23	6.33
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	129.3	141.9	138.9	136.9
Turbidity (NTU)	36.5 ~~29.3~~ JC	29.2	12.6	10.0
Temperature (°C)	14.8	15.4	15.8	16.1
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	12:05	12:10	12:15	12:20

Sampling Method: 3 well volume

Remarks: PID Reading = 0.0

Constituents Sampled	Container Description	Number	Preservative
COC			

Sampling Personnel: JHC/PP

Well Casing Volumes

Gal./Ft.: 1-¼" = 0.06; 1-½" = 0.09; 2" = 0.16; 2-½" = 0.26; 3" = 0.37; 3-½" = 0.50; 4" = 0.65; 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 GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/14/05

Site/Well No.: N-10634 | Replicate No.: N/A | Code No.: —

Weather: Clear, 60°F | Sampling Time: Begin 4:24 | End 4:26

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67.5
Depth to Water (ft bmp)	41.27
Water-Level Elevation (ft)	—
Water Column in Well (ft)	26.23
Casing Diameter/Type	2" (0.16) / PVC
Gallons in Well	4.2
Gallons Pumped/Bailed Prior to Sampling	x 3 = 13
Sample Pump Intake Setting (ft bmp)	Q=2 T=7 IV=3
Purge Time	begin 4:15 end 4:24
Pumping Rate (gpm)	2 gpm
Evacuation Method	Rediflow pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	dark brown	brown	grey	clear
Odor	strong	moderate	mild	mild
Appearance	turbid	turbid	slightly turbid	clear
pH (s.u.)	7.20	5.78	5.62	5.62
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	174.1	161.5	161.7	161.8
Turbidity (NTU)	—	—	—	<350
Temperature (°C)	15.1	14.5	14.3	14.3
Dissolved Oxygen (mg/l)	—	—	—	—
~~Salinity (%)~~ Time	4:15	4:18	4:21	4:24

Sampling Method: 3 well Volume

Remarks: PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JHC/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. NY001348.0405.00002 — Page 1 of 1

Site Location: Bethpage, New York — Date: 4-11-05

Site/Well No.: PLT1 MW-04 — Replicate No.: N/A — Code No.: —

Weather: clear 53° — Sampling Time: Begin 6:27 — End 6:28 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	56.5
Depth to Water (ft bmp)	44.51
Water-Level Elevation (ft)	/
Water Column in Well (ft)	11.99
Casing Diameter/Type	2" (0.16)
Gallons in Well	1.92
Gallons Pumped/Bailed Prior to Sampling	6 x 3
Sample Pump Intake Setting (ft bmp)	4=1 T=6 1V=2
Purge Time	begin 6:20 pm end 6:27 pm
Pumping Rate (gpm)	1 gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	6.37	6.50	6.62	6.51
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	417	448	448	452
Turbidity (NTU)	—	18	18	19
Temperature (°C)	14.9	15.2	15.5	15.5
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Time	6:20	6:22	6:24	6:26

Sampling Method: 3 well volume

Remarks: PID reading at wellhead .1 ppm; Breathing Zone = 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC 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

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman — Project No. NY000134B.0405.00002 — Page 1 of 1

Site Location: Bethpage, NY — Date: 4/11/05

Site/Well No.: PLT1 MW-05 — Replicate No.: N/A — Code No.: —

Weather: clear 53° — Sampling Time: Begin 5:11 pm — End 5:12 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	58
Depth to Water (ft bmp)	42.71
Water-Level Elevation (ft)	/
Water Column in Well (ft)	15.29
Casing Diameter/Type	2" (0.16)
Gallons in Well	2.45
Gallons Pumped/Bailed Prior to Sampling	8 x 3
Sample Pump Intake Setting (ft bmp)	Q=1 T=8 1V=3
Purge Time	begin 4:57 end 5:11
Pumping Rate (gpm)	1 gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V	4V
Color	brownish red	brown	light brown	grey	clear
Odor	mild	mild	mild	mild	mild
Appearance	turbid	turbid	turbid	slightly turbid	clear
pH (s.u.)	6.08	6.09	6.14	6.12	6.17
Conductivity ~~(mS/cm)~~	—	—	—	—	—
(µmhos/cm)	184.4	194.4	197.4	199.0	198.6
Turbidity (NTU)	880	700	280	70	17
Temperature (°C)	15.2	15.7	16.3	16.5	16.4
Dissolved Oxygen (mg/L)	—	—	—	—	—
~~Salinity (%)~~ Time	4:57	5:00	5:03	5:06	5:09

Sampling Method: 3 well volume

Remarks: ~~3 well volume~~ PP

PID reading at wellhead: 2 ppm; breathing zone = 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC / 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. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage, NY Date: 4/11/05

Site/Well No.: PLT1 MW-06 Replicate No.: N/A Code No.: —

Weather: clear 56° Sampling Time: Begin 4:28 End 4:30 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	62
Depth to Water (ft bmp)	45.23
Water-Level Elevation (ft)	—
Water Column in Well (ft)	16.77
Casing Diameter/Type	2" (0.16)
Gallons in Well	2.68
Gallons Pumped/Bailed Prior to Sampling	8 x 3
Sample Pump Intake Setting (ft bmp)	Q=1 T=8 1V=3
Purge Time	begin 4:12pm end 4:25pm
Pumping Rate (gpm)	1 gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	1V	2V	3V	4V
Color	brown	greyish brown	grey	light grey	clear
Odor	none	mild	mild	mild	mild
Appearance	turbid	light brown	Slightly turbid	Slightly turbid	clear
pH (s.u.)	5.87	5.95	5.96	5.95	5.9
Conductivity ~~(mS/cm)~~	—	—	—	—	—
(µmhos/cm)	311	318	318	315	315
Turbidity (NTU)	>200	290	90	60	36
Temperature (°C)	15.5	15.5	15.7	15.8	15.9
Dissolved Oxygen (mg/L)	—	—	—	—	—
~~Salinity (%)~~ Time	4:13	4:16	4:19	4:22	4:25

Sampling Method: 3 well Volume

Remarks: PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC 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: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/5/05

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

Weather: clear 68° | Sampling Time: Begin 3:37pm | End 3:45

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
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 3:20 end 3:37pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated submersible pump/packer

Field Parameters

Field Parameters	I	Iv	2v	3v
Color	colorless	colorless	Colorless	colorless
Odor	none	none	none	none
Appearance	Cloudy	clear	clear	clear
pH (s.u.)	5.57	5.29	5.39	5.32
Conductivity ~~(mS/cm)~~ (µmhos/cm)	—	—	—	—
	243.0	242	249	271
Turbidity (NTU)	9.8	7.3	8.1	7.9
Temperature (°C)	17.7	16.9	16.8	14.0
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Depth to water	28.82	28.82	30.1	28.98

Sampling Method: 3 well volume

Remarks: DTW=28.82

169 - 28.82 x .43 + 50 = 120 PSI rounded up

PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC IOP

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

Water Sampling Log

Project: Northrop Grumman Project No. NY001348.0405.00002 Page 1 of 1

Site Location: Bethpage New York Date: 4-5-05

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

Weather: clear 67° Sampling Time: Begin 6:00 pm End 6:05 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	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
Gallons Pumped/Bailed Prior to Sampling	x 3 = 80.00
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 5:50 end 6:00
Pumping Rate (gpm)	—
Evacuation Method	Dedicated submersible pump/packer

Field Parameters

Field Parameters	I	1V	2V	3V
Color	Colorless	light tan	colorless	colorless
Odor	strong odor	slight	none	none
Appearance	clear	cloudy	clear	clear
pH (s.u.)	5.01	5.48	5.23	5.07
Conductivity (mS/cm)	—	—	—	—
~~Salinity (%)~~ (µmhos/cm)	50.6	42.0	55.3	56.0
Turbidity (NTU)	9.7	140	22	12
Temperature (°C)	16.5	15.9	13.8	15.4
Dissolved Oxygen (mg/L)	—	—	—	—
Depth to water	31.3	31.82	31.92	31.73

Sampling Method: 3 well volume

Remarks: DTW = 31.13

294 - 31.13 x .43 + 50 = 170 PSI

PID reading at wellhead = zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC / W

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

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1
Site Location: Bethpage, New York | Date: 4/5/05
Site/Well No.: BPOW 1-3 | Replicate No.: N/A | Code No.: —
Weather: clear 68° | Sampling Time: Begin 12:20 End 12:25

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 11:30 end 12:30
Pumping Rate (gpm)	/
Evacuation Method	Dedicated submersible pump/packer

Field Parameters	I	1V	2V	3V
Color	colorless clear	colorless clear	colorless	colorless
Odor	none	none	none	none
Appearance	clear	clear	cloudy	cloudy
pH (s.u.)	5.56	5.38	5.50	5.55
Conductivity ~~(mS/cm)~~ (µmhos/cm)	158.6	266.0	168.2	135.7
Turbidity (NTU)	17	21	75	140
Temperature (°C)	14.1	12.9	12.7	12.6
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Depth to water	30.70	31.10	30.50	—

Sampling Method: 3 well volume
Remarks: PID reading at wellhead is zero
344 - 30.70 x .43 + 50 = 185 PSI

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JC/BP

Well Casing Volumes

Gal./Ft.: 1-¼" = 0.06; 1-½" = 0.09; 2" = 0.16; 2-½" = 0.26; 3" = 0.37; 3-½" = 0.50; 4" = 0.65; 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: Northrop Grumman | Project No. NY001348.0405.0002 | Page 1 of 1
Site Location: Bethpage, NY | Date: 4/6/05
Site/Well No.: BPOW 2-1 | Replicate No.: N/A | Code No.:
Weather: clear 60° | Sampling Time: Begin 11:17 AM End 11:20 AM

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)
Gallons in Well	58.5
Gallons Pumped/Bailed Prior to Sampling	x3 175.5
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 10:52 end 11:15
Pumping Rate (gpm)	/
Evacuation Method	Dedicated submersible pump/packer

Field Parameters	I	1V	2V	3V
Color	Colorless	colorless	colorless	colorless
Odor	none	none	none	none
Appearance	Clear	clear	clear	clear
pH (s.u.)	3.64	4.15	4.11	4.08
Conductivity ~~(mS/cm)~~ (µmhos/cm)	113.5	174.4	141.9	130.0
Turbidity (NTU)	9.9	15	13	10
Temperature (°C)	15.7	14.5	14.0	14.8
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Depth to water	19.2	19.2	19.2	19.2

Sampling Method: 3 well volume

Remarks: DTW = 19.20
310 - 19.20 x .43 + 50 = 175 PSI
PID reading at wellhead = 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC IDP

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

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/6/05

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

Weather: clear 64° | Sampling Time: Begin 1:15 pm End 1:20 pm

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
Gallons Pumped/Bailed Prior to Sampling	x3 = 148.20
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 12:52 end 1:15 pm
Pumping Rate (gpm)	—
Evacuation Method	Dedicated submersible pump/packer

Field Parameters

Field Parameters	I	1V	2V	3V
Color	Colorless	Yellow	Yellow	Colorless
Odor	none	none	none	none
Appearance	clear	cloudy	cloudy	cloudy
pH (s.u.)	3.83	4.18	4.12	4.17
Conductivity ~~(mS/cm)~~ (µmhos/cm)	—	—	—	—
	76.2	84.4	77.2	77.6
Turbidity (NTU)	19	70	110	36
Temperature (°C)	9.2	14.5	17.7	14.3
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Depth to water	19.30	21.70	21.70	*

Sampling Method: 3 well volume

Remarks: DTW = 19.30

419 - 19.30 x .43 + 50 = 225 PSI

* M-Scope not working

PID reading at wellhead = 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC/DB

Well Casing Volumes

Gal./Ft.: 1-¼" = 0.06 | 1-½" = 0.09 | 2" = 0.16 | 2-½" = 0.26 | 3" = 0.37 | 3-½" = 0.50 | 4" = 0.65 | 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.	NY001348.0405.0002 Page 1 of 1
Site Location	Bethpage, NY	Date	4/8/05
Site/Well No.	BPOW 3-1	Replicate No.	N/A
		Code No.	
Weather	Mostly cloudy 67°	Sampling Time:	Begin 4:04 pm End 4:06pm

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" (0.65)
Gallons in Well	66.3
Gallons Pumped/Bailed Prior to Sampling	X3 198.9
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin — end —
Pumping Rate (gpm)	/
Evacuation Method	Dedicated submersible pump/packer

Field Parameters	I	1V	2V	3V
Color	Clear	Clear	—	colorless
Odor	None	Sulfur	—	None
Appearance	—	—	—	clear
pH (s.u.)	3.64	3.81	3.83	3.92
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	153.1	149.7	147.9	151.3
Turbidity (NTU)	—	—	—	<50
Temperature (°C)	14.2	13.9	14.2	14.2
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Depth to water	NE 25.46	30.00	27.78	28.02

Sampling Method: 3 well volume

Remarks: Static dtw
414 - 25.46 X .43 + 50
= 217 psi (220 psi rounded up)

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: ME / 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. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/8/05

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

Weather: cloudy 55°F | Sampling Time: Begin — End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	647
Depth to Water (ft bmp)	503
Water-Level Elevation (ft)	/
Water Column in Well (ft)	144
Casing Diameter/Type	4" (0.65)
Gallons in Well	93.6 x3
Gallons Pumped/Bailed Prior to Sampling	280
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin — end —
Pumping Rate (gpm)	/
Evacuation Method	Dedicated submersible pump/packer

Field Parameters

	I	IV	2V	3V
Color	Clear	Clear	→	
Odor	(sulfur) yes →		none	Sulfur
Appearance	Clear	Clear	Clear	Clear
pH (s.u.)	4.75	4.19	4.46	3.87
Conductivity (mS/cm)	6.61	—	—	—
(µmhos/cm)	65.9	141.9	74.9	65.7
Turbidity (NTU)	—	—	—	—
Temperature (°C)	14.5	13.3	14.8	13.9
Dissolved Oxygen (mg/L)				
~~Salinity (%)~~ Depth to water	26.46	25.80	27.85	24.65
Sampling Method	3 Well Volume			

Remarks

503 - 26.40 x .43 + 50 = 255 PSI

PID reading at wellhead 40, Breathing zone - zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: ME / 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. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4/7/05

Site/Well No.: BPOW 4-1 | Replicate No.: rep4705 | Code No.: —

Weather: Mostly cloudy, 55°F | Sampling Time: Begin 6:47 pm | End 6:50 pm

Evacuation Data

	Standpipe	Screen
Measuring Point	TOC	
MP Elevation (ft)	—	
Land Surface Elevation (ft)		
Sounded Well Depth (ft bmp)	652	692
Depth to Water (ft bmp)	503	652
Water-Level Elevation (ft)	—	—
Water Column in Well (ft)	149	40
Casing Diameter/Type	4" (0.65)	2" (0.16)
Gallons in Well	96.85 x 3 = 290	6.4 x 3 = 19.2

Gallons Pumped/Bailed Prior to Sampling: 309 (290+19.2)

Sample Pump Intake Setting (ft bmp): —

Purge Time: begin 5:05 pm end 6:45 pm

Pumping Rate (gpm): —

Evacuation Method: Dedicated submersible pump/packer

Field Parameters

	I	IV	2V	3V
Color	Colorless	tan	Colorless	Colorless
Odor	none	none	none	none
Appearance	clear	cloudy	clear	cloudy
pH (s.u.)	5.07	6.15	5.29	5.13
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	48.9	120.7	56.5	51.9
Turbidity (NTU)	28	95	20	45
Temperature (°C)	13.6	13.1	13.1	13.0
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	27.10	29.7	29.1	28.9
Sampling Method	3	well	volume	

Remarks: PSI = 255
DTW = 27.10 bls
PID = 0.0 at wellhead
M-scope not working properly

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC/BB

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

btmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Millisiemens 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 GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 4-7-05

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

Weather: Mostly cloudy, 61°F | Sampling Time: Begin 3:18 End 3:21

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	764
Depth to ~~Water~~ packer (ft bmp)	503
Water-Level Elevation (ft)	/
Water Column in Well (ft)	261
Casing Diameter/Type	4" (0.65)
Gallons in Well	169.65 x 3
Gallons Pumped/Bailed Prior to Sampling	509
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 12:05 end 3:18pm
Pumping Rate (gpm)	/
Evacuation Method	Dedicated packer / Bladder

Field Parameters

Field Parameters	I	1V	2V	3V
Color	colorless	Yellow	tan	colorless
Odor	none	none	none	None
Appearance	clear	cloudy	cloudy	clear
pH (s.u.)	3.69	3.95	3.96	3.81
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	73.7	150.6	68.9	54.0
Turbidity (NTU)	20	>200	85	38
Temperature (°C)	14.7	14.2	15.8	14.8
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ DTW	27.00	25.20	25.30	25.42

Sampling Method: 3 well Volume

Remarks: DTW = 27.00

503 - 27.00 x .43 + 50 = 255 PSI

M-scope not working properly

PID reading at wellhead zero

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC JDP

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 1 of 1

Project Number/Name NYO:[illegible] T2

Project Location _____

Laboratory _____

Project Manager _____

Sampler(s)/Affiliation R. Ed / ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE						Remarks	Total
					X					2:52 pm	3
					X					3:42	3
											2
											2
											1
		ONCT-1				BD					2
											2
											2

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

Total No. of Bottles/ Containers

				Seal Intact?
Relinquished by: _____	Organization: _____	Date 1/14/05	Time _____	
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: Std TAT

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

Project Number/Name NY001248.0405.0000?

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	ANALYSIS / METHOD / SIZE: 40 ml vial VOC [illegible]						Remarks	Total
TB 3-14-05	L	3/14/05		2							2
FB 3-14-05	↓	↓		2							2
HN-42 I	↓	↓		2							2
HN-423	↓	↓		2							2
HN-405	↓	↓		2							2
HN-41 I	↓	↓		2							2

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

Total No. of Bottles/Containers 12

Relinquished by: [illegible]	Organization: Arcadis	Date 3/14/03	Time 4:40pm	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 1 of 1

Project Number/Name [illegible]

Project Location [illegible] NY

Laboratory [illegible]

Project Manager Dave Stern

Sampler(s)/Affiliation [illegible]

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: [illegible]	[illegible]					Remarks	Total
[illegible]	L	[illegible]		[illegible]							[illegible]
GM-15D2	[illegible]			[illegible]							[illegible]
GM-15D	[illegible]			[illegible]							[illegible]
[illegible]	[illegible]			[illegible]	[illegible]						[illegible]
[illegible]											
Note: Severn Trent notified GM-15I also shipped. STL added to COC. (Analysis also VOC) [illegible]											

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

Total No. of Bottles/Containers [illegible]

Relinquished by: [illegible]	Organization: Arcadis	Date 3/16/05	Time [illegible]	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: [illegible]

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 1 of 1

Project Number/Name [illegible]
Project Location Bethpage NY
Laboratory Severn Trent - [illegible]
Project Manager Dan Stern
Sampler(s)/Affiliation [illegible]

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 2000-ASP (Comp)						Remarks	Total
TB[illegible]	L	[illegible]		2							2
GM-21D	↓	↓		2							2
GM-21I	↓	↓		2							2

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

Total No. of Bottles/Containers: 6

Relinquished by: [illegible]	Organization: Arcadis	Date 3/17/05	Time [illegible]	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 + Dan 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

Project Number/Name [illegible]
Project Location Bethpage NY
Laboratory Severn Trent - Shelton
Project Manager Dan [illegible]
Sampler(s)/Affiliation [illegible]

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 8260-ASP (unp)						Remarks	Total
TB 21805	L	2-18-05		2							2
GM-38D	↓	↓		2							2
GM-38I	↓	↓		2							2
GM-18I	↓	↓		2							2
GM-18D	↓	↓		2							2

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

Total No. of Bottles/Containers 10

Relinquished by: [illegible]	Organization: Arcadis	Date 2/18/05	Time [illegible]	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 Dan [illegible]

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: NYork 49.4405.0002

Project Location: Bethpage, NY

Laboratory: Severn Trent - Shelton

Project Manager: Dave Stern

Sampler(s)/Affiliation: PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 2000-ASP (Unp)						Remarks	Total
TB 32205	L	3/22/05		2							2
GM-74 I	↓	↓		2							2
GM-74 D	↓	↓		2							2
GM-74D2	↓	↓		2							2
GM-73 D	↓	↓		6 *							6
GM-73D2	↓	↓		2							2
Rep 32205	↓	↓		2							2

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

Total No. of Bottles/Containers: 18

Relinquished by: Pat Palmer [signature]	Organization: Arcadis	Date 3/22/05	Time 6:00pm	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
* Please use this sample for a MS/MSD QA/QC sample

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

Project Number/Name: NY001348.0005.0000?
Project Location: Bethpage, NY
Laboratory: Severn Trent - Shelton
Project Manager: Dave Stern
Sampler(s)/Affiliation: PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml Vial VOC 8260 - ASP (unp)						Remarks	Total
TB-?-05	L	7/2-?-?		2							2
GM-79I	↓	↓		2							2
GM-79D	↓	↓		2							2
GM-39D	↓	↓		2							2

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

Total No. of Bottles/ Containers: 8

Relinquished by: [illegible]	Organization: Arcadis	Date 7/2?/05	Time 4:30pm	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: [illegible]

Delivery Method: ☐ In Person ☑ Common Carrier [illegible] (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 _____

Project Location _____

Laboratory _____

Project Manager _____

Sampler(s)/Affiliation _____

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE						Remarks	Total
TB	L										
GM-19D											
GM-17D											
GM-17I											
GM-13D											

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

Total No. of Bottles/ Containers: 10

				Seal Intact?
Relinquished by: _____	Organization: Arcadis	Date 2/25/05	Time 6:00 pm	
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 ☐ Lab Courier ☐ Other _____

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001348.0405.00002

Project Location Bethpage NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation PB

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 8260 - ASP (unp)						Remarks	Total
GH-7D2	L	3/28/05		2							2
TB-3805	↓			2							2
GH-35D2	↓	↓		2							2

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

Total No. of Bottles/ Containers 6

Relinquished by: [signature]	Organization: Arcadis	Date 3/28/05	Time 6:30pm	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 1 of 1

Project Number/Name NY001318.0465.0002

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation PF

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: [illegible]						Remarks	Total
TB 3-30-05	L	3/30/05		2							2
GM-36D	↓	↓		6*							6
GM-36D2	↓	↓		2							2
GM-37D	↓	↓		2							2

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

Total No. of Bottles/Containers 12

Relinquished by: [illegible]	Organization: Arcadis	Date 3/30/05	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

[illegible]

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 1 of 1

Project Number/Name [illegible]

Project Location [illegible] New York

Laboratory [illegible]

Project Manager [illegible]

Sampler(s)/Affiliation [illegible]

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	VOA vial VOC [illegible]						Remarks	Total
TB32105	L	3/21/05		2							2
GM-[illegible]D	|	|		2							2
GM-[illegible]D2	↓	↓		2							2

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

Total No. of Bottles/Containers 6

Relinquished by: [illegible]	Organization: Arcadis	Date 3/21/05	Time 6:00pm	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 [illegible]

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 NYCorus.cuo5 ...

Project Location Bethpage NY

Laboratory ... Test shelton

Project Manager Dave Stern

Sampler(s)/Affiliation ...

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml Vial VOC 8260-Asp cool						Remarks	Total
TB 4105	L	4/1/05		2							2
Cw 4105	↓	↓		2							2
GW-77D2	↓	↓		2							2

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

Total No. of Bottles/Containers 6

Relinquished by: ...	Organization: Arcadis	Date 4/1/05	Time 6:00pm	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 _____

Project Location _____

Laboratory _____

Project Manager _____

Sampler(s)/Affiliation _____

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE						Remarks	Total
TB 4505	L	4/05									
										Total No. of Bottles/ Containers	

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

Relinquished by: _____	Organization: _____	Date 4/5/05	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: _____

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

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001348.0465.0000?

Project Location Bethpage, NY

Laboratory Severn-Trent Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation JAC / PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml Vial VOC 502.2 (comp)						Remarks	Total
TB 4-6-05	L	4/6/05		2							2
BP-1-2-1	↓	↓		2							2
BP-1-2-2				2							2

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

Total No. of Bottles/Containers 6

Relinquished by: Pat Cottone?	Organization: Arcadis	Date 4/6/05	Time 6:00pm	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)

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001495.0405,0002

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation JAL / BP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml vial VOC 502.2 (one)						Remarks	Total
TB 4705	L	4/7/05		2							2
Bpw 4-2	L	4/7/05		2							2
BPV 4-1	L	4/7/05		2							2
Rep 4705	L	4/7/05		2							2

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

Total No. of Bottles/ Containers 8

Relinquished by: [illegible]	Organization: Arcadis	Date 4/7/05	Time 6:35 pm	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. outpost

CHAIN-OF-CUSTODY RECORD

Project Number/Name NYOOCUYE.0405.0000

Project Location Bethpage, New York

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation ME PO

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml vial VOC 502.2 (cmp)						Remarks	Total
TG 4/8/05	L	4/8/05		2							2
BPAW 3-2	↓	↓		2							2
BPAW 3-1	↓	↓		2							2
	*	Rush		TAT for BPAW 3-2 & BPAW 3-1							

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

Total No. of Bottles/ Containers 6

Relinquished by: [illegible]	Organization: Arcadis	Date 4/8/05	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

Rush TAT for BPAW 3-1 and BPAW 3-2

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 1 of 1

Project Number/Name [illegible]

Project Location Bethpage, New York

Laboratory Severn Trent Lab Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation JC / PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml vial VOC 8260-ASP (comp)	500 ml plastic Cr only (Hunt)	500 ml plastic total color (Hubb)	500 ml plastic [illegible] color (Hubb)			Remarks	Total
TB 41105	L	4/11/05		2							2
GM-16I	|	|		2							2
GM-16SC	|	|		2		1	1				4
PLT1 MW-06	|	|			1						1
PLT1 MW-05	|	|			1						1
PLT1 MW-04	|	|			1						1
FB 41105	↓	↓		2	1	1					4

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

Total No. of Bottles/Containers 15

Relinquished by: [illegible]	Organization: Arcadis	Date 4 / 11 / 05	Time [illegible]	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 [illegible] (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001248.0405.0000[illegible]

Project Location [illegible] NY

Laboratory [illegible]

Project Manager [illegible]

Sampler(s)/Affiliation [illegible]

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml vial VOC [illegible]						Remarks	Total
TB41105	L	4/12/05		2							
[illegible]	↓	↓		2							
HN-74I				2							2
[illegible]-03				2							2
HN-79I	↓	↓		2							

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

Total No. of Bottles/Containers 10

Relinquished by: [illegible]	Organization: Arcadis	Date 4/12/05	Time 6:30 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: [illegible]

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

Project Number/Name [illegible]

Project Location [illegible], NY

Laboratory [illegible]

Project Manager [illegible]

Sampler(s)/Affiliation [illegible]

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	[illegible] VOC [illegible]	[illegible]	[illegible]				Remarks	Total
TB41305	L	4/13/05		2							2
GM-78 I	↓	↓		2	1	1					4
FB41305				2	1						3
Rep 41305				2	1	1					4
GM-78S				2	1	1					4
MW-3R				2	1	1					4
MW-1GF											2
MW-2GF											2
MW-21S	↓	↓		2							2

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

Total No. of Bottles/Containers 27

				Seal Intact?
Relinquished by: [illegible]	Organization: Arcadis	Date 4/13/05	Time 6:[illegible] 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: [illegible]

Delivery Method: ☐ In Person ☒ Common Carrier [illegible] (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

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

Project Number/Name NY001VB.0405.0000?
Project Location Bethpage New York
Laboratory Severn Trent Lab - Shelton
Project Manager Dan Stern
Sampler(s)/Affiliation JHC/[illegible]

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 2000-ASP (Comp)						Remarks	Total
FB41405	L	4/14/05		2							2
TB41405	↓	↓		2							2
HN-29D	↓	↓		2							2
GM-34D2	↓	↓		2							2
GM-34D	↓	↓		2							2
N-10634	↓	↓		2							2

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

Total No. of Bottles/Containers 12

Relinquished by: [illegible]	Organization: Arcadis	Date 4/14/05	Time 6:00 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: Report to Dan 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. Grumman Quarterly

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001148.0405.0000

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation JHC / PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 2ml-HCl (Comp)	500ml plastic Total Ca/Cr	500ml plastic Dissolved				Remarks	Total
TB 41505	L	4/15/05		2							2
Gd-18s	L	↓		2	1	1					4
FB 41505	L	↓		2	1						3

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

Total No. of Bottles/Containers 9

Relinquished by: [illegible]	Organization: Arcadis	Date 4/15/05	Time [illegible]	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)

ARCADIS

Laboratory Task Order No./P.O. No. Bru... [illegible]

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY... [illegible]

Project Location Bethpage, New York

Laboratory Severn Trent [illegible]

Project Manager Dan Stern

Sampler(s)/Affiliation THC / PF

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 8260-A [illegible] (HCl)	500 ml plastic Total [illegible] (HNO3)	500 ml plastic Dissolved [illegible]				Remarks	Total
TB 41605	L	4/16/05		2							2
FB 41605	↓	↓		2	1						3
N-10631	↓	↓		2	1	1					4
GM-75D2	↓	↓		2							2
GM-17[illegible]	↓	↓		2	1	1					4
GM-[illegible]D	↓	↓		2							2
N-10627	↓	↓		2							
N-10629	↓	↓		2							

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

Total No. of Bottles/Containers 21

Relinquished by: [illegible]	Organization: Arcadis	Date 4/16/05	Time [illegible] pm	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 Dan 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 1 of 1

Project Number/Name _____

Project Location _____

Laboratory _____

Project Manager _____

Sampler(s)/Affiliation _____

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE						Remarks	Total
TB 4HRS	L	4/18/05		2							2
GM-TOP				6 *							6
GM				2	1	1					4
FB 4HR				1	1						3

Total No. of Bottles/ Containers 15

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

Relinquished by: _____	Organization: Arcadis	Date 4/18/05	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: _____

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

AG 05-12/01