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Third Quarter 2005 Groundwater Monitoring Report

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

ARCADIS
Infrastructure, environment, buildings

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Third Quarter 2005 Groundwater Monitoring Report

Operable Unit 2
Northrop Grumman Corporation,
Bethpage, New York
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) and the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M Inc. 2003b) to meet the remedial objectives set forth in the March 2001 OU2 Record of Decision (ROD) (NYSDEC 2001).

This report describes the operational and effectiveness monitoring of the on-site portion of the OU2 groundwater remedy for the period from June 29 through September 30, 2005, which is referred to in this report as the Third Quarter 2005 report period. The Annual Report, which is issued after the completion of each calendar year, includes an evaluation of long-term data trends. 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 sections of this report: 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 report 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; ARCADIS G&M, Inc. 2004a). The complete description of the procedures to collect groundwater samples from outpost wells and evaluate and document the results is provided in the PWSCP (ARCADIS G&M, Inc. 2003b).

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 Third 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 section are the remedial system/well troubleshooting and non-routine maintenance activities performed by ARCADIS and NGC during the Third Quarter 2005.

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 Tower 96 (previously referred to as GP-1) and Tower 102 (previously referred to as ONCT) remedial treatment system air strippers.

TVOC concentrations from the remedial wells ranged from 140.5 micrograms per liter (µg/L) (in Well ONCT-3) to 3,621.5 µg/L (in Well GP-3). A total of approximately 2,399 pounds of VOCs were removed from the aquifer by the remedial wells during the Third Quarter 2005.

NGC's State Pollutant Discharge Elimination System (SPDES) discharge monitoring results (Permit No. NY0096792) are used as the final treated water quality in calculating remedial system treatment efficiency and documenting the quality of water returned to the aquifer. SPDES discharge monitoring data are documented on a monthly basis by NGC to NYSDEC under separate cover in Discharge Monitoring Reports (DMRs) (Northrop Grumman Corporation 2005a; 2005b; and 2005c) and the average VOC concentration entering the two site outfalls this period are provided in

Table 1. NGC Outfalls 005 and 006 represent the termini of the Tower 96 and Tower 102 system effluent water (i.e., inlets to the West Recharge Basins and South Recharge Basins) respectively. Based on the ratio of influent VOC concentrations to the average quarterly VOC concentrations in SPDES discharge monitoring, the efficiencies of the Tower 96 and Tower 102 systems for the Third Quarter 2005 are calculated to be 99.9 percent and greater than 99.9 percent, respectively (Table 1).

3.2 Remedial System Pumpage and Discharge

Table 1 summarizes the remedial well pumpage for the Third Quarter 2005 and comparison to design criteria. Remedial Wells GP-1, GP-3, ONCT-1, ONCT-2, and ONCT-3 collectively pumped approximately 439 million gallons (MG) of groundwater, which is equivalent to 86 percent of the design pumpage volume of groundwater.

On April 14, 2005, the NYSDEC approved the design pumpage rate for Remedial Well GP-3 of 700 gallons per minute (gpm). Additionally, the NYSDEC approved the revised design rate for Remedial Well GP-1 of 800 gpm (NYSDEC 2005; ARCADIS G&M, Inc. 2005). NGC is currently modifying the Well GP-3 pump and controls to meet the new design rate.

Based on weekly measurements collected by ARCADIS, the South Recharge Basins collectively received the treated effluent discharge from the Tower 102 remedial system (approximately 2,376 gallons per minute [gpm]), along with incidental stormwater runoff and contribution from Tower 96 remedial system, totaling an additional 196 gpm, for a total of approximately 2,572 gpm discharged this period.

As approved by NYSDEC, a portion of the treated water from the Tower 96 remedial system is provided to the adjacent Calpine Energy facility's new "peaker unit", dependent, on demand, for consumptive use. The demand rate is controlled by a "Cla-Val" located within a new subsurface transmission pipeline between Tower 96 and the Calpine facility. Based on the "peaker unit" activity, the demand rate is expected to fluctuate between 600 and 1,000 gpm. The actual Calpine demand rate for this report period is currently unavailable since the meter is located on Calpine property in a below grade vault; for the purpose of this report, the minimum demand rate of 600 gpm to Calpine has been assumed for calculating the water balance this period (Table 1). NGC is currently pursuing obtaining records of the demand rate from Calpine; these data will be incorporated into the quarterly reports when they become available.

Assuming a demand rate of 600 gpm, the West Recharge Basins received an average discharge rate from the Tower 96 remedial system of approximately 616 gpm.

3.3 Remedial Wells Specific Capacities

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

3.4 Troubleshooting and non-Routine Maintenance

This section describes the troubleshooting/non-routine maintenance activities that occurred in the Third Quarter 2005.

From June 29 to August 24, 2005, Remedial Well GP-3 was not operational due to ongoing testing, re-development, and pump/control upgrade activities. On August 24, 2005, Well GP-3 re-development and testing were successfully completed and Well GP-3 was returned to service on an interim basis with a temporary submersible pump and pumping at a rate of 425 gpm while the permanent replacement pump and appurtenances were on order. As soon as the permanent replacement pump and controls are received, inspected, installed, and tested, Well GP-3 will be re-started at the NYSDEC-approved design pumping rate of 700 gpm; Well GP-1 pumping rate will then concurrently be changed to the revised design pumping rate of 800 gpm.

On September 6, 2005 Well ONCT-2 was shut down for maintenance activities. The scheduled maintenance activities were as follows: vertical turbine pump was removed and inspected, the well was surged and bailed of settleable solids and the screen was cleaned using a wire brush, and the remedial well casing and screen were inspected. Based on the results of well inspection; it was determined that the screen was successfully cleaned and the remedial well casing and screen were in exceptionally good condition. Based on the pump inspection, it was determined that excessive corrosion had occurred and that a replacement vertical turbine pump was required; a replacement pump with improved resistance to corrosion was then ordered. As soon as the replacement pump is received, inspected, installed, and tested, Well ONCT-2 will be re-started at the design pumping rate of 600 gpm.

Other shorter term periods of well/system downtime occurred during the Third Quarter 2005 (for both the Tower 96 and Tower 102 Systems); these were due to short-term repairs to system components, inspections, and temporary power outages.

4. Groundwater Flow

This report section describes the results of hydraulic monitoring performed during the Third Quarter 2005 (i.e., measured on August 31, 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 Third Quarter 2005 are provided in Table 3. Vertical hydraulic gradients calculated for select well pairs and comparison to model-predicted gradients (see Appendix B of the OU2 Feasibility Study; ARCADIS Geraghty & Miller 2000) was performed (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 upgradient Wells GM-16SR/GM-16I, 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 Third Quarter 2005. The observed mounding extends around and beneath the South Recharge Basins and across the 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 Third 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 Third Quarter 2005 that are specified in and required under the NYSDEC-approved Groundwater Monitoring Plan (ARCADIS G&M, Inc. 2001; 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, based on 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 (SCG) 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 Third 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 current data show no exceedences of SCGs near the NGC site boundary in the shallow and intermediate zones (Tables 5, 6, and 7).

5.1.2 Deep Zone

In general, the water quality data from the deep wells sampled during the Third 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 the NGC site southern boundary and upgradient of the remedial wells (Table 8 and Figure 1), exhibited 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. The remaining three on-site deep wells (GM-15D, GM-17D, and GM-74D) exhibited trace VOC detections and no SCG exceedences.

Three of the four off-site deep wells (N-10627, GM-20D and GM-21D) located 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 a single SCG exceedence this round.

The remaining deep off-site wells (GM-13D, GM-34D, GM-36D, GM-37D, GM-38D and HN-29D) located either upgradient or further downgradient of the hydraulic barrier exhibited TVOC concentrations ranging from 0.6 ug/L to 853.7 ug/L (Table 8). These data are consistent with the expected concentrations in the off-site 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 Third 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, total VOC concentrations were highest in Remedial Well ONCT-1 (564 ug/L) (Table 9). Monitoring Well GM-33D2 (west of ONCT-1) and wells located east of Remedial Well ONCT-1 (Wells GM-73D2, ONCT-2, GM-74D2, ONCT-3 and GM-15D2) exhibited one or more exceedences of SCGs (Table 9); total VOC concentrations in these areas, by comparison to Well ONCT-1, are substantially lower and ranged from 17.9 ug/L (Well GM-74D2) to 167 ug/L (Well ONCT-2). 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.

The eight off-site D2 wells exhibited SCG exceedences with total VOC concentrations ranging from non-detect (Well GM-36D2) to 1,016.9 ug/L (Well GM-38D2). These

data are consistent with the expected concentrations in the off-site portion of the VOC plume in the D2 zone that is not actively remediated.

5.2 Outpost Monitoring

The results of the Third 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 in Outpost Well OW1-3. These wells initially exhibited exceedences of their respective trigger values during the First and Second Quarters of 2004, respectively. The requirements for initial exceedences, as outlined in the PWSCP (ARCADIS G&M, Inc., 2003b), were met at that time. During the Third Quarter 2005, benzene and methyl tert-butyl ether (MTBE) (neither VOC is site-related) were detected in Well OW2-1; the results indicate that the SCG for benzene (0.7 ug/L) was exceeded this round.

5.3 Vinyl Chloride Monomer

Vinyl chloride monomer (VCM) concentrations in groundwater samples collected during the Third Quarter 2005 are provided in Tables 6 through 9. VCM continues to be present in Well GP-3 (270 ug/L during the Third Quarter 2005), but was not detected in the other remedial wells or 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 Occidata Chemical Corporation.

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. Well MW-3R (near former NGC Plant 2) exhibited the only Cd concentration that exceeded the SCG this round (Figure 1 and Table 11). The data indicate that Cr concentrations exceeded the SCG in three of the ten wells sampled this round, with exceedences limited to on-site areas, adjacent to former NGC Plant 1. Comparison of the total/dissolved results indicates that cadmium and chromium are predominantly present in groundwater 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 Third Quarter 2005 are provided in Table 12. Because TIC data is qualitative in nature, ARCADIS will monitor the TIC data; if trends develop to indicate that a TIC is frequently present, ARCADIS will consider petitioning the NYSDEC to add the subject TIC 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 Third Quarter 2005 are summarized below.

1. The remedial system pumpage data show that the OU2 remedial wells pumped approximately 86 percent of the design volume of groundwater. Recharge basins received a collective total of approximately 423.5 MG of treated water this quarter. Remedial Well ONCT-2 was shut down near the end of the quarter for maintenance. Remedial Well GP-3 was successfully redeveloped and is currently operating with a temporary submersible pump at approximately 450 gpm; when the permanent pump is installed, the pumping rate will be increased to the design rate of 700 gpm.

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

3. Approximately 2,399 lbs of VOCs were removed from the aquifer and treated by the on-site portion of the OU2 groundwater remedy.

4. The air stripper efficiencies of both groundwater remedial systems are 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 continue to be detected in Outpost Wells OW1-1, OW1-3, OW2-1 and OW2-2. The remaining outpost wells exhibited no site-related VOC detections.

8. Cd/Cr SCG exceedences are limited to on-site areas.

7. Recommendation

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

Well ONCT-2 will be returned to service as soon as possible.

8. References

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Table 1. Summary of Operational Data and Water Balance for the On-Site Portion of the OU2 Groundwater Remedy, Third 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	986	144.0	129.4	90%	740	886	955
GP-3	425	426	56.9	21.1	37%	3,200	3,621.5	636
ONCT-1	1,000	1,064	133.9	129.7	97%	530	564	609
ONCT-2	600	585	80.4	61.9	77%	150	167	86
ONCT-3	700	727	93.7	96.4	103%	110	140.5	113
Rounded Totals:	**3,800**	**3,788**	**509**	**439**	**86%**	--	--	**2,399**
Recharge Basins [a]			**Treated Water Recharged to Aquifer**					
West Recharge Basins	412	616	55	82.5	114%	--		--
South Recharge Basins	2,231	2,572	298.8	341.0	114%	--	--	--
Rounded Totals:	**2,643**	**3,188**	**354**	**423.5**	**120%**	--	--	--
Treated Water Sent to Calpine								
Calpine Demand	600-1000	600	80-134	78.7	--	--	--	--
Treatment Efficiencies			**Average SPDES Outfall TVOC Concentrations (ug/L) [f]**					
Tower 96 System Efficiency [e]:		**99.9%**		**1.8**				
Tower 102 System Efficiency [e]:		**>99.9%**		**0**				

see footnotes on last page

Table 1. Summary of Operational Data and Water Balance for the On-Site Portion of the OU2 Groundwater Remedy, Third 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). Design pumping and recharge rates were modified in April, 2005 and will be shown herein when procured equipment is installed and the wells returned to service at NYSDEC-approved modified pumping rates. Total recharge includes remedial well pumpage (minus pipe loss) and incidental runoff from precipitation. Current average recharge rates have been determined using the entire 93-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 June 29 to September 30, 2005 (93 days).

- OU2 wells were operational during the Third Quarter 2005, at the following percentages: GP-1 (98%), GP-3 (37%); ONCT-1 (91%), ONCT-2 (79%), and ONCT-3 (99%). The Actual Average Pumping Rates and Rate of treated water sent to Calpine are for when the wells are pumping.

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

(d) - TVOC mass removed is based on the TVOC data given above and the following formula:

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

(e) Air Stripping Efficiency calculated from values above and in Table 9 using the following formula:

$$1 - \left[\frac{\text{Average SPDES TVOC Concentration at Outfall}}{\frac{[(\text{TVOC}_{\text{Well 1}} \times Q_{\text{Well 1}}) + (\text{TVOC}_{\text{Well 2}} \times Q_{\text{Well 2}})]}{(Q_{\text{Well 1}} + Q_{\text{Well 2}})}} \right]$$

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

(f) Towers 96 and 102 outfalls are indentified as Outfalls 005 and 006, respectively (commonly known as the Plant 5 Recharge Basins and South Recharge Basins, respectively). Complete SPDES reporting provided to NYSDEC by NGSC under separate cover.

–	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
SPDES	State Pollutant Discharge Elimination System	Q	Pumping Rate
		NYSDEC	New York State Department of Environmental Conservation

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

	Baseline		Third 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[2] (gpm)	Specific Capacity (gpm/ft)
ONCT-1	44.12	44.03	8/31/2005	--[3]	--[3]	975	--[3]
ONCT-2	50.15	38.09	8/31/2005	68.38	18.23	556	30.5
ONCT-3	49.13	40.12	8/31/2005	67.58	18.45	745	40.4
GP-1	55.75	28.57	8/31/2005	--[3]	--[3]	1,040	--[3]
GP-3	54.4	10.10	8/31/2005	101.22	46.82	425	9.1

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

(3) Depth to water measurements for Wells ONCT-1 and GP-1 due to gauge malfunction.

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, August 31, 2005, Operable Unit 2, 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	57.93	66.37
N-9921	94.23	34.85	59.38
N-10597	109.85	43.22	66.63
N-10600	102.41	40.32	62.09
N-10631	103.47	40.96	62.51
N-10633	103.80	41.65	62.15
N-10634	101.20	41.10	60.10
N-10821	91.58	36.52	55.06
GM-15S	109.44	46.78	62.66
GM-16SR	115.86	50.21	65.65
GM-17SR	115.79	50.56	65.23
GM-18S	107.60	44.02	63.58
GM-19S	109.86	42.38	67.48
GM-21S	105.81	38.63	67.18
GM-78S	104.94	43.53	61.41
GM-79S (N-10628)	100.88	42.49	58.39
HN-24S	--	54.05	--
HN-40S	116.35	50.88	65.47
HN-42S	120.32	52.99	67.33
MW-3R	101.45	37.07	64.38
Intermediate Wells			
N-10624	93.61	34.23	59.38
GM-15I	109.25	46.59	62.66
GM-16I	115.81	49.51	66.30
GM-17I	115.83	50.69	65.14
GM-18I	109.03	45.25	63.78
GM-19I	109.86	45.41	64.45
GM-20I	103.88	38.86	65.02
GM-21I	105.72	40.46	65.26
GM-74I	107.42	42.11	65.31
GM-78I	105.06	43.80	61.26
GM-79I	100.88	42.81	58.07
HN-24I	125.80	57.83	67.97
HN-29I	116.42	48.75	67.67
HN-40I	115.91	50.69	65.22
HN-42I	119.61	52.29	67.32

See notes on last page

Table 3. Water-Level Measurement Data, August 31, 2005, Operable Unit 2, 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	34.74	58.96
GM-13D	113.97	48.12	65.85
GM-15D	109.84	48.82	61.02
GM-17D	115.68	52.42	63.26
GM-18D	108.88	47.79	61.09
GM-20D	103.92	40.92	63.00
GM-21D	105.66	45.42	60.24
GM-34D	71.19	--	--
GM-36D	91.63	37.70	53.93
GM-37D	97.26	41.77	55.49
GM-38D	91.75	41.23	50.52
GM-39D$_A$[(3)]	102.23	41.25	60.98
GM-39D$_B$[(3)]	102.08	44.11	57.97
GM-73D	104.87	46.22	58.65
GM-74D	107.43	47.38	60.05
GM-79D	101.25	44.15	57.10
HN-29D	115.11	48.91	66.20
Deep2 Wells			
GM-15D2	109.78	51.15	58.63
GM-33D2	106.85	51.42	55.43
GM-34D2	71.19	18.85	52.34
GM-35D2	96.28	42.20	54.08
GM-36D2	91.60	40.55	51.05
GM-37D2	97.17	42.58	54.59
GM-38D2	91.56	44.21	47.35
GM-70D2	99.58	43.59	55.99
GM-71D2	98.45	44.28	54.17
GM-73D2	104.62	48.07	56.55
GM-74D2	107.36	53.71	53.65
GM-75D2	93.63	37.71	55.92
GP-1[(1)]	116.78	--	--
GP-3	--	101.22	--
ONCT-1[(2)]	104.10	--	--
ONCT-2	110.00	68.38	41.62
ONCT-3	108.70	67.58	41.12

See notes on last page

Table 3. Water-Level Measurement Data, August 31, 2005, Operable Unit 2, 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	31.83	41.82
BPOW1-2	73.54	33.05	40.49
BPOW1-3	73.37	33.15	40.22
BPOW2-1	60.06	22.80	37.26
BPOW2-2	59.96	22.79	37.17
BPOW3-1	63.19	29.84	33.35
BPOW3-2	63.72	31.36	32.36
BPOW4-1	67.34	29.00	38.34
BPOW4-2	67.18	28.69	38.49

(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.

ft msl feet relative to mean sea level

ft bmp feet below measuring point

-- Not Measured

Table 4. Comparison of August 31, 2005, Vertical Hydraulic Gradients to Model Predicted Gradients, Operable Unit 2, Northrop Grumman Systems 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	62.66			
GM-15I	9.29	62.66	0.00	4.20	-4.20
GM-16SR	66.77	65.65			
GM-16I	-24.19	66.30	-7.15	1.11	-8.26
GM-17SR	50.79	65.23			
GM-17I	5.83	65.14	2.00	4.50	-2.50
GM-19S	59.36	67.48			
GM-19I	-25.14	64.45	35.86	2.44	33.42
GM-21S	40.81	67.18			
GM-21I	-29.28	65.26	27.39	18.44	8.95
GM-78S	39.94	61.41			
GM-78I	5.56	61.26	4.36	8.73	-4.37
GM-79S	35.88	58.39			
GM-79I	-73.91	58.07	2.91	0.91	2.00
Intermediate-Deep Wells					
GM-15I	9.29	62.66			
GM-15D	-227.34	61.02	6.93	6.52	0.41
GM-17I	5.83	65.14			
GM-17D	-172.32	63.26	10.55	7.86	2.69
GM-18I	9.03	63.78			
GM-18D	-186.12	61.09	13.78	7.74	6.04
GM-20I	3.88	65.02			
GM-20D	-117.08	63.00	16.70	18.22	-1.52
GM-21I	-29.28	65.26			
GM-21D	-177.34	60.24	33.91	43.97	-10.06
GM-74I	8.42	65.31			
GM-74D	-192.57	60.05	26.17	20.17	6.00
GM-79I	-73.91	58.07			
GM-79D	-183.75	57.10	8.83	15.48	-6.65

See notes on last page

Table 4. Comparison of August 31, 2005, Vertical Hydraulic Gradients to Model Predicted Gradients, Operable Unit 2, Northrop Grumman Systems 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	61.02			
GM-15D2	-436.41	58.63	11.43	14.19	-2.76
GM-18D	-186.12	61.09			
GM-33D2	-403.15	55.43	26.08	12.30	13.78
GM-36D	-117.37	53.93			
GM-36D2	-443.40	51.05	8.83	2.75	6.08
GM-37D	-154.74	55.49			
GM-37D2	-282.83	54.59	7.03	3.88	3.15
GM-38D	-238.25	50.52			
GM-38D2	-393.44	47.35	20.43	6.08	14.35
GM-39D_A [1]	-169.77	60.98			
GM-39D_B [1]	-312.92	57.97	21.03	13.46	7.57
GM-73D	-301.13	58.65			
GM-73D2	-437.38	56.55	15.41	18.78	-3.37
GM-74D	-192.57	60.05			
GM-74D2	-444.64	53.65	25.39	28.26	-2.87
N-10627	-198.80	58.96			
GM-75D2	-421.37	55.92	13.66	2.25	11.41

(1) Wells GM-39_A and GM-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.

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Table 5. Summary of Total Volatile Organic Compound and Cadmium/Chromium Concentrations and Comparison to SCGs for Select Site Boundary Monitoring Wells, Third Quarter 2005, Operable Unit 2, Northrop Grumman Corporation, Bethpage, New York. [1] [2]

Shallow Zone

Well Identification:	N-10631	GM-17SR	GM-18S	GM-21S	GM-78S	MW-3R
TVOC Concentration (ug/L):	ND	0.7	0.6	ND	ND	2
No. of TVOC SCG Exceedences:	None	None	None	None	None	None
Total Cd Concentration (ug/L):	1.9	ND	ND	NS	ND	26.6
Total Cd SCG Exceedences:	None	None	None	--	None	1
Total Cr Concentration (ug/L):	20	ND	13.8	NS	ND	42.3
Total Cr SCG Exceedences:	None	None	None	--	None	None

Intermediate Zone

Well Identification:	GM-17I	GM-18I	GM-20I	GM-21I	GM-74I	GM-78I	GM-79I
TVOC Concentration (ug/L):	2	ND	ND	ND	ND	2	0.5
No. VOC SCG Exceedences:	None	None	None	None	None	None	None
Total Cd Concentration (ug/L):	NS	NS	NS	NS	NS	ND	NS
Total Cd SCG Exceedences:	--	--	--	--	--	None	--
Total Cr Concentration (ug/L):	NS	NS	NS	NS	NS	2.5	NS
Total Cr SCG Exceedences:	--	--	--	--	--	None	--

Deep Zone

Well Identification:	GM-17D	GM-18D	GM-20D	GM-21D
TVOC Concentration (ug/L):	1.7	9.8	ND	2
No. TVOC 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

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Table 6. Concentrations of Volatile Organic Compounds Detected in Shallow Wells, Third 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 9/8/2005	10634 N-10634 9/20/2005	FW-03 FW-03 9/20/2005	GM-15S GM-15S 8/19/2005	GM-16SR GM-16SR 9/7/2005
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	**3J**	**3J**	**5J**
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	**13**	**3**	**5**

(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, Third 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 9/7/2005	GM-18S GM-18S 9/8/2005	GM-21S GM-21S 8/29/2005	GM-32S GM-32S 9/22/2005	GM-78S GM-78S 9/7/2005
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	**0.6J**	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	**0.6J**	<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		**0.7J**	<5	<5	**6**	<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			**0.7**	**0.6**	0	**6.6**	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.

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, Third 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-40S HN-40S 9/21/2005	HN-42S HN-42S 9/21/2005	MW-03R MW-3R 9/7/2005
Chloromethane	5		<5	<5	<5
Bromomethane	5		<5	<5	<5
Vinyl Chloride	2		<2	<2	<2
Chloroethane	5		<5	<5	<5
Methylene chloride	5		<5	<5	<5
Acetone	50		<10	<10	<10
Carbon disulfide	50		<5	<5	<5
1,1-Dichloroethene	5		<5	<5	<5
1,1-Dichloroethane	5		<5	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5
Chloroform	7		<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5
2-Butanone	50		<10	<10	<10
1,1,1-Trichloroethane	5		<5	<5	<5
Carbon tetrachloride	5		<5	<5	<5
Bromodichloromethane	50		<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5
Trichloroethene	5		<5	<5	**2J**
Dibromochloromethane	5		<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5
Bromoform	50		<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10
2-Hexanone	50		<10	<10	<10
Tetrachloroethene	5		<5	<5	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5
Toluene	5		<5	<5	<5
Chlorobenzene	5		<5	<5	<5
Ethylbenzene	5		<5	<5	<5
Styrene	5		<5	<5	<5
Xylene (total)	5		<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5
Freon-113 *	5		<5	<5	<5
Total VOCs			0	0	**2**

(1) Standards, Criteria, and Guidance (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 7. Concentrations of Volatile Organic Compounds Detected in Intermediate Wells, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	10624 N-10624 9/9/2005	GM-15I GM-15I 8/30/2005	GM-16I GM-16I 8/31/2005	GM-17I GM-17I 9/1/2005	GM-18I GM-18I 9/26/2005
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	**1J**	**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**	**61**	**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	**21**	<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	**6**	**96**	**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.

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, Third 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 8/30/2005	GM-21I GM-21I 8/29/2005	GM-74I GM-74I 8/18/2005	GM-78I GM-78I 9/7/2005	GM-79I GM-79I 9/1/2005
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	**2J**	**0.5J**
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	**2**	**0.5**

(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, Third 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 9/20/2005	HN-24I REP092005 9/20/2005	HN-29I HN-29I 9/20/2005	HN-40I HN-40I 9/21/2005	HN-42I HN-42I 9/21/2005
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		**0.5J**	**0.6J**	<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		**22**	**22**	**1J**	**4J**	**0.4J**
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**	**1J**	**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		**2J**	**2J**	<5	<5	<5
Total VOCs			**25.5**	**25.6**	**2**	**9**	**0.4**

(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.

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

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: / SAMPLE ID: / DATE:	10627 / N-10627 / 9/9/2005	GM-13D / GM-13D / 8/31/2005	GM-15D / GM-15D / 8/19/2005	GM-17D / GM-17D / 9/1/2005	GM-18D / GM-18D / 9/26/2005
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	**47**	**1J**	<5	<5
1,1-Dichloroethane	5		<5	**20**	**2J**	<5	<5
cis-1,2-Dichloroethene	5		<5	**96**	<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	**0.7J**	<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	**22**	<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**	**2J**	**1J**	**9**
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	**500D**	**2J**	<5	**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	**8**	<5	**0.7J**	<5
Total VOCs			**1**	**853.7**	**7**	**1.7**	**9.8**

(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, Third 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 / 8/30/2005	GM-21D / GM-21D / 8/29/2005	GM-34D / GM-34D / 9/22/2005	GM-36D / GM-36D / 8/22/2005	GM-37D / GM-37D / 8/24/2005
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	**0.6J**
1,1-Dichloroethane	5		<5	<5	**1J**	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	**9**	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		<5	<5	**0.7J**	<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	**2J**	**450D**	**7**	<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	**8**	<5	**0.5J**
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	**23**	<5	<5
Total VOCs			0	**2**	**496.7**	**7**	**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.
(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, Third 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 8/23/2005	GM-39D$_A$[2] GM-39D 8/25/2005	GM-39D$_B$[2] GM-39D2 8/25/2005	GM-73D GM-73D 8/18/2005	GM-73D REP081805 8/18/2005
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		**7**	<5	<5	<5	<5
1,1-Dichloroethane	5		**4J**	<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		**4J**	<5	<5	<5	<5
Carbon tetrachloride	5		**0.5J**	<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		**610D**	**9**	**21**	**38**	**39**
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		**0.5J**	<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		**0.9J**	<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		**1J**	<5	<5	<5	<5
Total VOCs			**630.6**	**9**	**21**	**38**	**39**

(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, Third 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-74D GM-74D 8/18/2005	GM-79D GM-79D 9/1/2005	HN-29D HN-29D 9/20/2005
Chloromethane	5		<5	<5	<5
Bromomethane	5		<5	<5	<5
Vinyl Chloride	2		<2	<2	<2
Chloroethane	5		<5	<5	<5
Methylene chloride	5		<5	<5	<5
Acetone	50		<10	<10	<10
Carbon disulfide	50		<5	<5	<5
1,1-Dichloroethene	5		<5	<5	<5
1,1-Dichloroethane	5		<5	<5	<5
cis-1,2-Dichloroethene	5		<5	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5
Chloroform	7		<5	<5	<5
1,2-Dichloroethane	5		<5	<5	<5
2-Butanone	50		<10	<10	<10
1,1,1-Trichloroethane	5		<5	<5	<5
Carbon tetrachloride	5		<5	<5	<5
Bromodichloromethane	50		<5	<5	<5
1,2-Dichloropropane	5		<5	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5
Trichloroethene	5		**3J**	**54**	**0.6J**
Dibromochloromethane	5		<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5
Bromoform	50		<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10
2-Hexanone	50		<10	<10	<10
Tetrachloroethene	5		<5	**1J**	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5
Toluene	5		<5	<5	<5
Chlorobenzene	5		<5	<5	<5
Ethylbenzene	5		<5	<5	<5
Styrene	5		<5	<5	<5
Xylene (total)	5		<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5
Freon-113 *	5		<5	**1J**	<5
Total VOCs			**3**	**56**	**0.6**

(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.

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Table 9. Concentrations of Volatile Organic Compounds Detected in Deep2 Wells and OU2 Groundwater Remedial Treatment Systems, Third 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 / 8/19/2005	GM-33D2 / GM-33D2 / 9/8/2005	GM-34D2 / GM-34D2 / 9/22/2005	GM-35D2 / GM-35D2 / 8/25/2005	GM-36D2 / GM-36D2 / 8/22/2005
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		**1J**	<5	**5**	**2J**	<5
1,1-Dichloroethane	5		<5	<5	**0.8J**	<5	<5
cis-1,2-Dichloroethene	5		<5	**0.6J**	**8**	**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	**0.8J**	<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**	**53**	**350D**	**270D**	<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**	**6**	**12**	**9J**	<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**	**5J**	**11**	**8J**	<5
Total VOCs			**28**	**64.6**	**387.6**	**293**	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, Third 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 8/24/2005	GM-38D2 GM-38D2 8/23/2005	GM-70D2 GM-70D2 8/23/2005	GM-71D2 GM-71D2 8/26/2005	GM-73D2 GM-73D2 8/26/2005
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		**4J**	**3J**	<5	**2J**	**0.6J**
1,1-Dichloroethane	5		**9**	<5	<5	**8**	<5
cis-1,2-Dichloroethene	5		<5	**8**	**0.9J**	**0.8J**	**0.4J**
trans-1,2-Dichloroethene	5		<5	<5	<5	<5	<5
Chloroform	7		**0.3J**	**0.9J**	<5	**1J**	<5
1,2-Dichloroethane	5		<5	<5	<5	<5	<5
2-Butanone	50		<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5		**4J**	<5	<5	**2J**	<5
Carbon tetrachloride	5		<5	<5	<5	**0.6J**	<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		**2J**	**1000D**	**78**	**4J**	**150**
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	**2J**	<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	**8**	<5	**0.9J**
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	**3J**	**2J**	<5	<5
Total VOCs			**19.3**	**1016.9**	**88.9**	**18.4**	**151.9**

[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
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, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL:	GM-74D2	GM-75D2	GP-1	GP-3	ONCT-1
		SAMPLE ID:	GM-74D-2	GM-75D2	GP-1	GP-3	ONCT-1
		DATE:	8/18/2005	9/9/2005	8/31/2005	8/31/2005	8/31/2005
Chloromethane	5		<5	<5	<5	<5	<5
Bromomethane	5		<5	<5	<5	<5	<5
Vinyl Chloride	2		<2	<2	<2	**270D**	<2
Chloroethane	5		<5	<5	<5	**5J**	<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		**0.9J**	**6**	**5**	**28**	**3J**
1,1-Dichloroethane	5		<5	<5	**2J**	**5J**	<5
cis-1,2-Dichloroethene	5		<5	**2J**	**9**	**20**	**4J**
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	**6**	<5
Carbon tetrachloride	5		<5	<5	<5	<5	<5
Bromodichloromethane	50		<5	<5	<5	<5	<5
1,2-Dichloropropane	5		<5	<5	**1J**	<5	<5
cis-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Trichloroethene	5		**9**	**380D**	**740D**	**3200D**	**530D**
Dibromochloromethane	5		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5		<5	<5	<5	<5	<5
Benzene	0.7		<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	5		<5	<5	<5	<5	<5
Bromoform	50		<5	<5	<5	<5	<5
4-Methyl-2-pentanone	50		<10	<10	<10	<10	<10
2-Hexanone	50		<10	<10	<10	<10	<10
Tetrachloroethene	5		**8**	**5J**	**120**	**61**	**17**
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5	<5
Toluene	5		<5	<5	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	**0.5J**	<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	**3J**	**9**	**26**	**10**
Total VOCs			**17.9**	**396**	**886**	**3621.5**	**564**

(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, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria and Guidance Values[1]	WELL: SAMPLE ID: DATE:	ONCT-2 ONCT-2 8/31/2005	ONCT-3 ONCT-3 8/31/2005	EFFL ONCT-EFF 8/31/2005	EFFL GP-1/3-EFF 8/31/2005
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		**4J**	**1J**	<5	<5
1,1-Dichloroethane	5		<5	<5	<5	<5
cis-1,2-Dichloroethene	5		**2J**	**19**	<5	<5
trans-1,2-Dichloroethene	5		<5	<5	<5	<5
Chloroform	7		<5	**0.9J**	<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		**150**	**110**	<5	**1J**
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		**9**	**9**	<5	<5
1,1,2,2-Tetrachloroethane	5		<5	<5	<5	<5
Toluene	5		<5	<5	<5	<5
Chlorobenzene	5		<5	<5	<5	<5
Ethylbenzene	5		<5	<5	<5	<5
Styrene	5		<5	<5	<5	<5
Xylene (total)	5		<5	<5	<5	<5
Vinyl Acetate	NE		<5	<5	<5	<5
Freon-113 *	5		**2J**	**0.6J**	<5	<5
Total VOCs			**167**	**140.5**	0	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.

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Table 10. Concentrations of Site-Related Volatile Organic Compounds Detected in Outpost Wells and Associated Blank Samples, Third 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 9/13/2005	OW 1-2 BPOW 1-2 9/13/2005	OW 1-3 BPOW 1-3 9/13/2005	OW 2-1[6] BPOW 2-1 9/14/2005	OW 2-2 BPOW 2-2 9/14/2005	OW 3-1 BPOW 3-1 9/15/2005	OW3-1 REP091605 9/15/2005	OW 3-2 BPOW 3-2 9/15/2005	OW 4-1 BPOW 4-1 9/15/2005	OW 4-2 BPOW 4-2 9/15/2005
Chlorobenzene	5		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	5		**2.4**	<0.5	**4.1**	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	5		**1.6**	<0.5	**1.9**	**1.3J**	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	7		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5		<0.5	<0.5	<0.5	**1.8J**	**0.91J**	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	5		**4.7**	<0.5	**7.8**	**0.67J**	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	5		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5		**2.5**	<0.5	**1.4**	**1.9J**	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	5		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5		<0.5	<0.5	<0.5	**0.98J**	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
Freon-113 *	5		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0 5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	5		<0.5	<0.5	<0.5	<0.5J	<0.5J	<0.5	<0.5	<0.5	<0.5	<0.5
Total Site-Related VOCs:			**11.2[4]**	**0**	**15.2[4]**	**6.65[5]**	**0.91[5]**	**0**	**0**	**0**	**0**	**0**
TVOC Trigger Value:[3]			**0.6**	**0.6**	**0.6**	**1.5**	**1.5**	**1.5**	**--**	**1.5**	**1.5**	**1.5**

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) TVOC trigger values were established in the PWSCP (ARCADIS G&M, Inc. 2003b).

(4) The TVOC trigger value for Cluster OW-1 was initially exceeded on April 23, 2004; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003b).

(5) The TVOC trigger value for Cluster OW-2 was initially exceeded on May 3, 2004; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003b).

(6) Benzene and Methyl tert-butyl ether (MTBE), which are not site-related VOCs, were detected in Outpost Well OW 2-1 on 9/14/05 at 11 ug/L and 7.3 ug/L, respectively.

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 NYSDEC 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 and Associated Blank Samples, Third 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:	TRIP BLANK TB091305 9/13/2005	TRIP BLANK TB091405 9/14/2005	TRIP BLANK TB091505 9/15/2005	TRIP BLANK TB091605 9/16/2005
Chlorobenzene	5		<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	5		<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	5		<0.5	<0.5	<0.5	<0.5
Chloroform	7		<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5		<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	5		<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	5		<0.5	<0.5	<0.5	<0.5
Trichloroethene	5		<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	5		<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5		<0.5	<0.5	<0.5	<0.5
Freon-113 *	5		<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	5		<0.5	<0.5	<0.5	<0.5
Total Site-Related VOCs:			**0**	**0**	**0**	**0**
TVOC Trigger Value:(3)			–	–	–	–

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) TVOC trigger values were established in the PWSCP (ARCADIS G&M, Inc. 2003b).

(4) The TVOC trigger value for Cluster OW-1 was initially exceeded on April 23, 2004; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003b).

(5) The TVOC trigger value for Cluster OW-2 was initially exceeded on May 3, 2004; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003b).

(6) Benzene and Methyl tert-butyl ether (MTBE), which are not site-related VOCs, were detected in Outpost Well OW 2-1 on 9/14/05 at 11 ug/L and 7.3 ug/L, respectively.

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 NYSDEC 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, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC SCGs [1]	WELL:	10631	GM-15S	GM-16SR	GM-17SR	GM-18S	GM-32S	GM-78S	GM-78I	MW-01GF	MW-02GF
		SAMPLE ID:	N-10631	GM-15S	GM-16SR	GM-17SR	GM-18S	GM-32S	GM-78S	GM-78I	MW-1GF	MW-2GF
		DATE:	9/8/2005	8/19/2005	9/7/2005	9/7/2005	9/8/2005	9/22/2005	9/7/2005	9/7/2005	9/22/2005	9/22/2005
Cadmium	5		**1.9B**	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cadmium (Dissolved)	5		**1.5B**	--	<1.1	<1.1	<1.1	<1.1	--	--	<1.1	<1.1
Chromium	50		**20**	**428**	**3.5B**	<1.3	**13.8**	**50**	<1.3	**2.5B**	<1.3	**29**
Chromium (Dissolved)	50		**16.9**	--	**1.4B**	<1.3	<1.3	**46.2**	--	--	<1.3	**25.6**

(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.

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

ARCADIS

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

CONSTITUENT (Units in ug/L)	NYSDEC SCGs[1]	WELL:	MW-03R	MW-04	MW-05	MW-06	WATER EQ. BLANK	WATER EQ. BLANK	WATER EQ. BLANK	WATER EQ. BLANK
		SAMPLE ID:	MW-3R	PT/MW-04	PT/MW-05	PT/MW-06	FB081905	FB090705	FB090805	FB092205
		DATE:	9/7/2005	8/19/2005	8/19/2005	8/19/2005	8/19/2005	9/7/2005	9/8/2005	9/22/2005
Cadmium	5		**26.6**	--	--	--	<1.1	<1.1	<1.1	<1.1
Cadmium (Dissolved)	5		**25.5**	--	--	--	--	--	--	--
Chromium	50		**42.3**	**1.5B**	**1310**	**248**	<1.3	<1.3	<1.3	<1.3
Chromium (Dissolved)	50		**42**	--	--	--	--	--	--	--

(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 and Blank Samples, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

WELL/BLANK SAMPLE IDENTIFICATION (Units in ug/L)	SAMPLE ID	DATE	Isobutane	1-Butene	Tetrahydrofuran	Isobutylene	Unknown
EQUIP BLANK	FB081905	8/19/2005	12 NJB	--	--	--	--
GM-36D2	GM-36D2	8/22/2005	--	--	--	--	6 J
TRIP BLANK	TB082405	8/24/2005	9 NJB	--	--	--	--
TRIP BLANK	TB082605	8/26/2005	8 NJ	--	--	--	--
TRIP BLANK	TB082905	8/29/2005	8 NJ	--	--	--	--
TRIP BLANK	TB083005	8/30/2005	9 NJ	--	--	--	--
GP-3	GP-3	8/31/2005	--	6 NJ	12 NJ	--	--
TRIP BLANK	TB090105	9/1/2005	6 NJ	--	--	--	--
EQUIP BLANK	FB090705	9/7/2005	6 NJ	--	--	--	--
TRIP BLANK	TB090905	9/9/2005	6 NJ	--	--	--	--
EQUIP BLANK	FB092005	9/20/2005	--	--	--	12 NJ	--
TRIP BLANK	TB092105	9/21/2005	22 NJ	--	--	--	--
TRIP BLANK	TB092205	9/22/2005	22 NJ	--	--	--	--

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

ug/L Micrograms per liter

-- Not Detected

N 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

B Detected in an associated blank sample.

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

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB081805 8/18/2005	TRIP BLANK TB081905 8/19/2005	TRIP BLANK TB082205 8/22/2005	TRIP BLANK TB082305 8/23/2005	TRIP BLANK TB082405 8/24/2005	TRIP BLANK TB082505 8/25/2005
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		**12B**	**11B**	**10B**	**11B**	**3JB**	**9**
Acetone		**5JB**	**5JB**	**5JB**	**4JB**	<10	**5J**
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		**17**	**16**	**15**	**15**	**3**	**14**

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, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB082605 8/26/2005	TRIP BLANK TB082905 8/29/2005	TRIP BLANK TB083005 8/30/2005	TRIP BLANK TB083105 8/31/2005	TRIP BLANK TB090105 9/1/2005	TRIP BLANK TB090705 9/7/2005
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		**3JB**	**3JB**	**2JB**	**10B**	**4JB**	**9B**
Acetone		**4JB**	<10	<10	**4J**	<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		**7**	**3**	**2**	**14**	**4**	**9**

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, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE: / SAMPLE ID: / DATE:	TRIP BLANK TB090805 9/8/2005	TRIP BLANK TB090905 9/9/2005	TRIP BLANK TB092005 9/20/2005	TRIP BLANK TB092105 9/21/2005	TRIP BLANK TB092205 9/22/2005	TRIP BLANK TB092605 9/26/2005
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		**8B**	**2JB**	**10B**	**3JB**	**4JB**	**10B**
Acetone		<10	<10	**4J**	<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	**1J**	<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		**8**	**2**	**14**	**4**	**4**	**14**

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, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

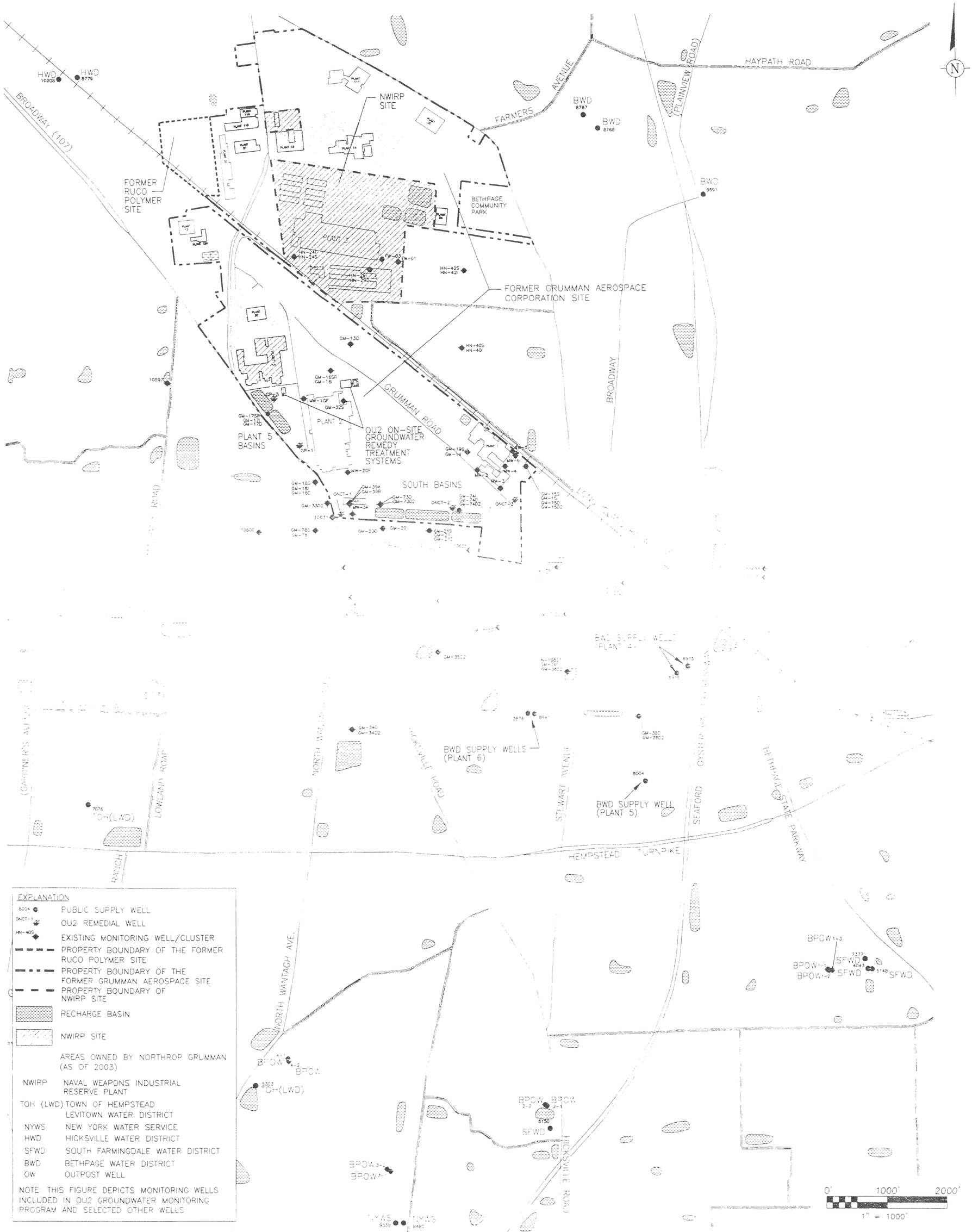
CONSTITUENT (Units in ug/L)	SAMPLE TYPE:	EQUIP BLANK	EQUIP BLANK	EQUIP BLANK	EQUIP BLANK	EQUIP BLANK	EQUIP BLANK
	SAMPLE ID:	FB081905	FB082905	FB090705	FB090805	FB090905	FB092005
	DATE:	8/19/2005	8/29/2005	9/7/2005	9/8/2005	9/9/2005	9/20/2005
Chloromethane		<5	<5	<5	<5	<5	<5
Bromomethane		<5	<5	<5	<5	<5	<5
Vinyl Chloride		<2	<2	<2	<2	<2	<2
Chloroethane		<5	<5	<5	<5	<5	<5
Methylene chloride		**2JB**	**3JB**	<5	**3JB**	**3JB**	**2JB**
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	**2J**
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**	0	**3**	**3**	**4**

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, Third Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SAMPLE TYPE:	EQUIP BLANK	EQUIP BLANK
	SAMPLE ID:	FB092105	FB092205
	DATE:	9/21/2005	9/22/2005
Chloromethane		<5	<5
Bromomethane		<5	<5
Vinyl Chloride		<2	<2
Chloroethane		<5	<5
Methylene chloride		**2JB**	**2JB**
Acetone		**4J**	<10
Carbon disulfide		<5	<5
1,1-Dichloroethene		<5	<5
1,1-Dichloroethane		<5	<5
cis-1,2-Dichloroethene		<5	<5
trans-1,2-Dichloroethene		<5	<5
Chloroform		<5	<5
1,2-Dichloroethane		<5	<5
2-Butanone		**2J**	**3J**
1,1,1-Trichloroethane		<5	<5
Carbon tetrachloride		<5	<5
Bromodichloromethane		<5	<5
1,2-Dichloropropane		<5	<5
cis-1,3-Dichloropropene		<5	<5
Trichloroethene		<5	<5
Dibromochloromethane		<5	<5
1,1,2-Trichloroethane		<5	<5
Benzene		<0.7	<0.7
trans-1,3-Dichloropropene		<5	<5
Bromoform		<5	<5
4-Methyl-2-pentanone		<10	<10
2-Hexanone		<10	<10
Tetrachloroethene		<5	<5
1,1,2,2-Tetrachloroethane		<5	<5
Toluene		<5	**0.3J**
Chlorobenzene		<5	<5
Ethylbenzene		<5	<5
Styrene		<5	<5
Xylene (total)		<5	<5
Vinyl Acetate		<5	<5
Freon-113 *		<5	<5
Total VOCs		**8**	**5.3**

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.



EXPLANATION

- PUBLIC SUPPLY WELL
- OU2 REMEDIAL WELL
- 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

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PROJECT TITLE
OPERABLE UNIT 2
NORTHROP GRUMMAN
CORPORATION
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

CAD/GIS FILE NUMBER	DRAWN BY
00004	E. HUGHES
PROJECT NUMBER	DRAWING NUMBER
NY001348.0405	1

Date\Time : Tue, 14 Feb 2006 2:36pm
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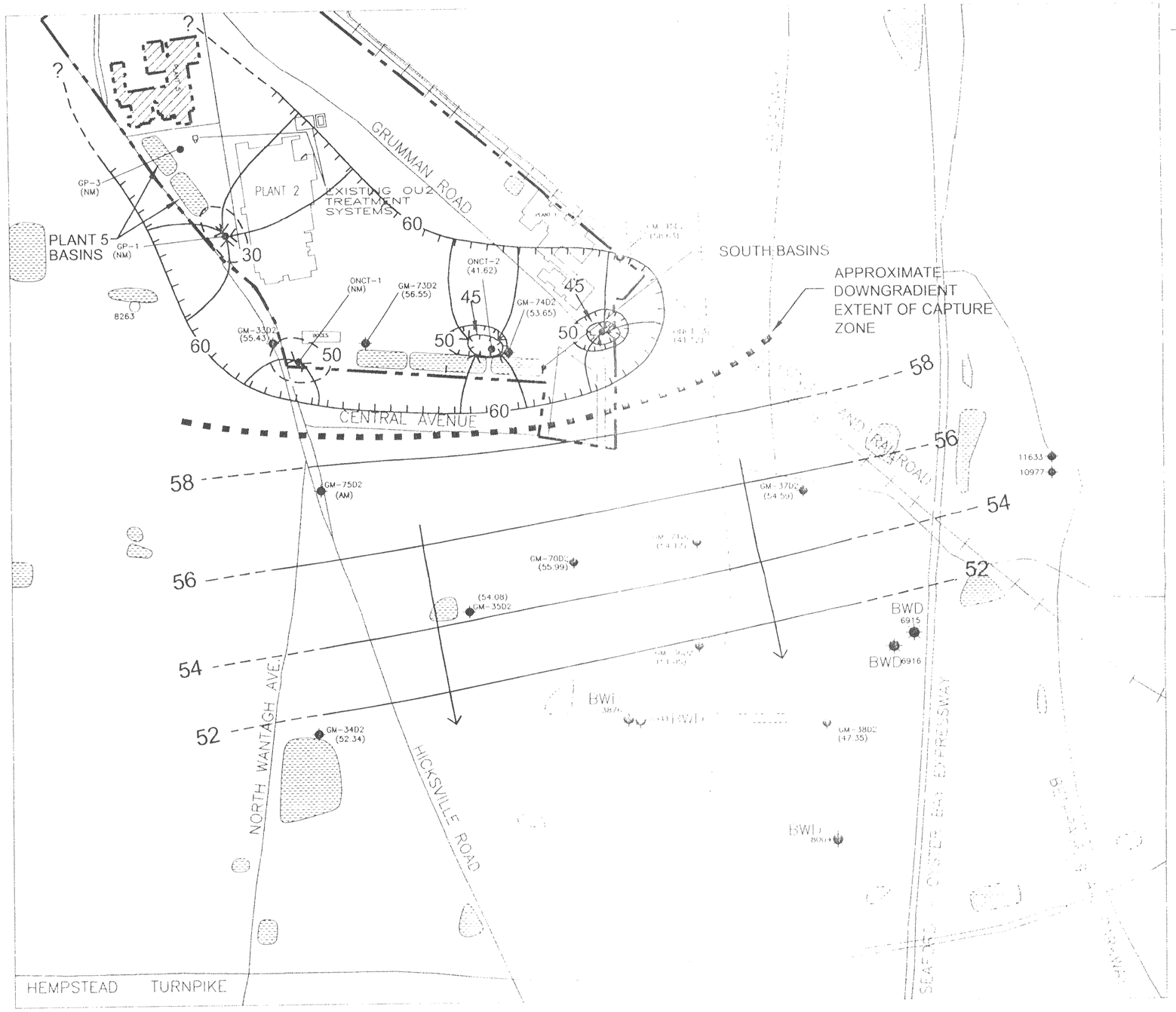

EXPLANATION

- PROPERTY BOUNDARY OF FORMER GRUMMAN AEROSPACE CORPORATION SITE
- RECHARGE BASIN
- GM-15D2 (58.63) — 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 (43.46) — 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 POTENTIOMETRIC SURFACE ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)
- LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION DENOTING A DECREASE IN FEET RELATIVE TO MEAN SEA LEVEL

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 1040 GPM, 425 GPM, 975 GPM, 556 GPM AND 745 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.

Date\Time : Tue, 14 Feb 2006 - 10:33am
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Acad Version : R16.2s (LMS Tech)
User Name : enughes

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REV. ISSUED DATE DESCRIPTION

SEAL

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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 AUGUST 31, 2005

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

800 0 800 1600

SCALE: 1" = 800'

EXPLANATION

- PROPERTY BOUNDARY OF FORMER GRUMMAN AEROSPACE CORPORATION SITE
- PROPERTY BOUNDARY OF THE U.S. NAVY SITE
- RECHARGE BASIN
- GM-15I (62.66) — 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-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 POTENTIOMETRIC SURFACE 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.

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SEAL

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PROJECT TITLE

OPERABLE UNIT 2
NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
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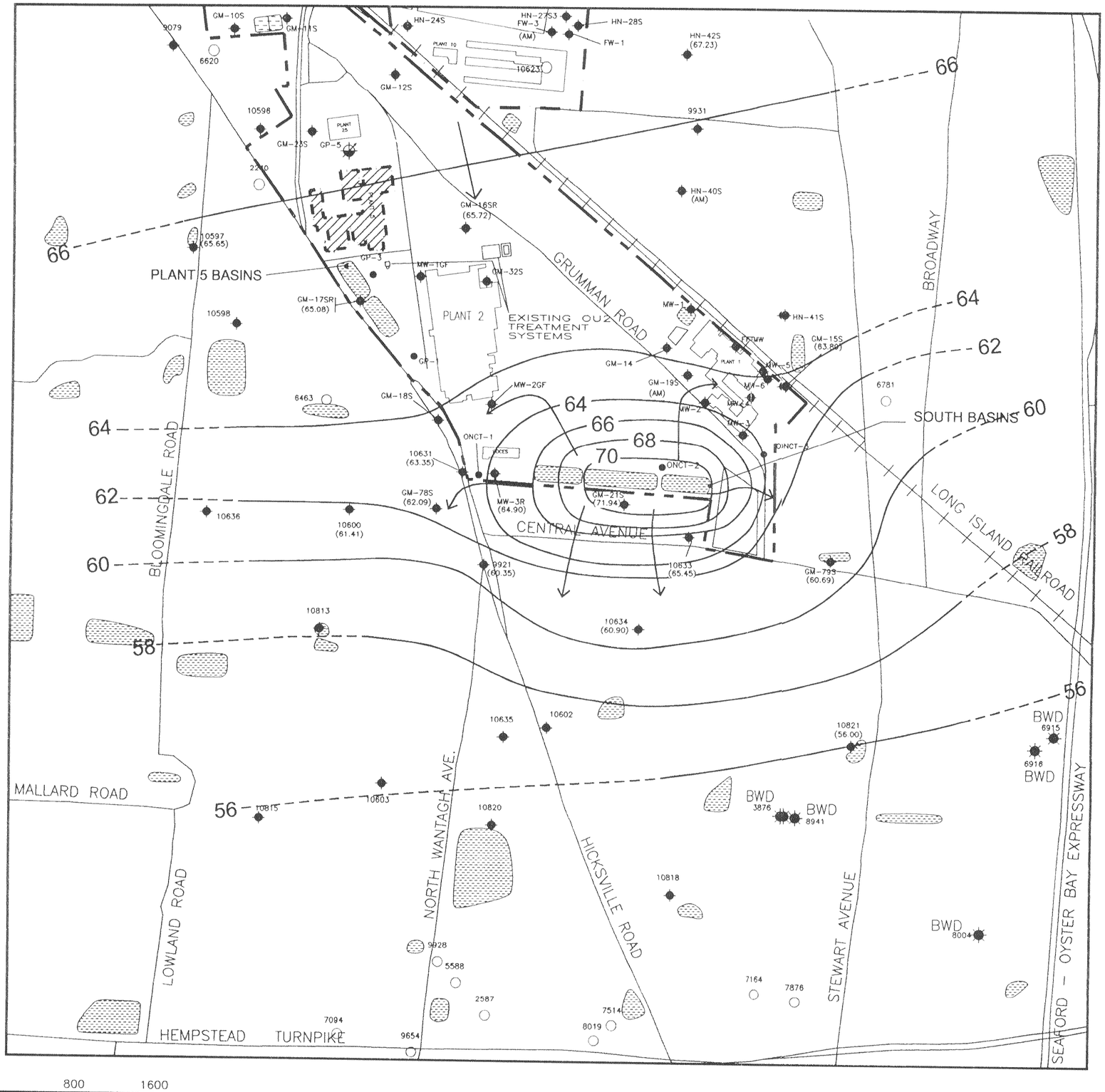
SHEET TITLE

POTENTIOMETRIC SURFACE ELEVATION AND HORIZONTAL GROUNDWATER FLOW DIRECTIONS IN THE INTERMEDIATE ZONE AUGUST 31, 2005

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



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EXPLANATION

- PROPERTY BOUNDARY OF FORMER GRUMMAN AEROSPACE CORPORATION SITE
- PROPERTY BOUNDARY OF THE U.S. NAVY SITE
- RECHARGE BASIN
- GM-15S (63.89) — 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

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.
6. THE NORTHERN WEST RECHARGE BASIN UNDERWENT SCRAPING DURING THE THIRD QUARTER OF 2004 AND RECEIVED LIMITED RECHARGE DURING THIS TIME.

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SEAL

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

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

SHEET TITLE
WATER-TABLE CONFIGURATION AND HORIZONTAL GROUNDWATER FLOW DIRECTIONS IN THE SHALLOW ZONE OCTOBER 26, 2004

TASK/PHASE NUMBER	DRAWN BY
00004	E. HUGHES
PROJECT NUMBER	DRAWING NUMBER
NY001348.0404	2

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Appendix A

Water-Level Measurement Logs

ARCADIS G&M

Page 1 of 2

Water Level Record

Project N400 1348.0405.0002

Date 8-31-05

Well (s)	Depth to Water (ft) (BMP)	Time	Remarks
GM-BD	48.12		
6 WCT-3	07.53		1456.9m
GM-15S	46.78		
GM-15I	46.59		
GM-15D	48.82		
GM-15D2	51.15		
GM-19S	42.38		
GM-19I	45.41		
10597	43.22		Bloomingdale Ave.
FW-03	57.93		
HN-29I	48.75		
HN-29D	48.91		
HN-24S	54.05		
HN-24I	57.83		
GM-34D2	18.85		
GM-34D			Could NOT open
10600	40.32		
GM-16I	49.51		
GM-16SR	50.21		
MW-3R	37.07		
GM-74I	42.11		
GM-74D	47.38		
GM-74D2	53.71		
ONCT-2	68.38		556 GPM
GM-73D2	48.07		
GM-73D	46.22		
GM-39D	41.25		
GM-18I	45.25		
GM-18D	47.79		
GM-17SR	50.56		
GM-17D	52.42		
GM-17I	50.69		
GM-18S	44.02		
GM-75D2	37.71		
10628	34.74		
10624	34.23		
N-1063	40.96		
GM-33D2	51.42		
N-9921	34.85		
GM-78S	43.53		

ARCADIS G&M

Water Level Record

Project NY001348.0405.00002

Date 8-31-05

Well (s)	Depth to Water (ft) (BMP)	Time	Remarks
GM-78I	43.80		
OW-1-1	31.83		
OW-1-2	33.05		
OW-1-3	33.15		
OW-2-1	22.80		
OW-2-2	22.79		
OW-3-1	29.84		
OW-3-2	31.36		
OW-4-1	29.00		
OW-4-2	28.69		
GM-35D2	42.20		
10634	41.10		
GM-71D2	44.28		
GM-70D2	43.59		
10821	36.52		
GM-36D	37.70		
GM-36D2	40.55		
GM-38D	41.23		
GM-38D2	44.21		
GM-37D2	42.58		
GM-37D	41.77		
HM-42S	52.99		
HM-42I	52.29		
HM-40I	50.69		
HM-40S	50.88		
GM-79I	42.81		
GM-79D	44.15		
GM-79S	42.49		
10633	41.65		
GM-21D	45.42		
GM-21I	40.46		
GM-21S	38.63		
GM-20D	40.92		
GM-20I	38.86		
GM-39D2	44.11		
GP-3	101.22		103444000 425 GPM
GP-1			
GP-2			
ONCT-1			HAS NO GUAGE

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Appendix B

Groundwater Sampling Logs

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001378.0405 Task: 00002 Well ID: GM-T3D
Date: 8-18-05 Sampled By: GW
Sampling Time: 5:05pm Recorded By:
Weather: CLEAR 85° Coded Replicate No.: Rep 8-18-05

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

Purging Information
Casing Material: PVC Purge Method: Low flow / Dedicated Bladder
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): 45.95 Purge time Start: 4:05pm Finish: 5:05pm

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
4:05	—	—	—	20.2	4.90	74.5	328	4.22	—	45.95	—
4:10	—	—	—	20.8	4.77	99.3	340	5.41	—	—	—
4:15	—	—	—	20.3	4.77	103.0	344	5.44	—	—	—
4:20	—	—	—	19.5	4.79	104.2	348	6.49	—	—	—
4:25	—	—	—	19.3	4.83	104.2	343	6.81	—	45.95	—
4:30	—	—	—	19.2	4.85	103.2	350	6.96	—	—	—
4:35	—	—	—	19.1	4.85	104.0	352	7.00	—	—	—
4:40	—	—	—	19.1	4.85	104.1	352	7.00	—	—	—
4:45	—	—	—	19.1	4.85	104.1	349	7.10	—	45.97	—
4:50	—	—	—	19.1	4.85	104.1	356	7.42	—	—	—
4:55	—	—	—	19.0	4.84	103.9	352	7.19	—	—	—
5:00	—	—	—	18.9	4.84	104.0	356	7.29	—	—	—
5:05	—	—	—	18.9	4.84	103.9	361	7.35	7.0	—	—

Sample Condition Color: Odor: Appearance:

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-74I
Date: 8-18/05 Sampled By: GW
Sampling Time: 1:25 pm Recorded By: GW
Weather: CLEAR 85° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Low flow / Dedicated Bladder
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): 42.89 Purge time Start: 12:40 Finish: 1:25

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. mS/cm	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:40	—	450mL	—	23.2	5.65	90.3	242	7.51	—	42.89	—
12:45	—	"	—	20.4	5.56	88.1	251	7.15	—	—	—
12:50	—	"	—	19.7	5.50	87.4	249	7.01	—	—	—
12:55	—	"	—	19.6	5.46	87.4	249	6.98	—	41.95	—
1:00	—	"	—	19.6	5.46	87.3	252	7.16	—	—	—
1:05	—	"	—	19.5	5.43	87.1	257	7.08	—	—	—
1:10	—	"	—	19.5	5.43	87.1	259	7.08	—	41.96	—
1:15	—	"	—	19.4	5.42	86.9	260	7.39	—	—	—
1:20	—	"	—	19.3	5.42	87.2	263	7.00	—	—	—
1:25	—	"	—	19.3		87.0	264	6.98	<10	41.95	—

Sample Condition Color: COLORLESS Odor: NONE Appearance: CLEAR

Sample Collection
Parameter: See COC Container: No. Preservative:

PID Reading 0.0

Comments

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

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: N4001348.0405 Task: 00002 Well ID: GM-74D
Date: 8-18-05 Sampled By: GW
Sampling Time: 2:35pm Recorded By: GW
Weather: CLEAR 85° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Low flow / Dedicated Bladder
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): 47.30 Purge time Start: 1:35pm Finish: 2:35 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
1:35	—	450	—	21.1	5.01	84.0	288	6.82	—	47.30	—
1:40	—	"	—	20.9	4.78	84.0	297	5.72			—
1:45	—	"	—	20.1	4.70	81.6	308	5.62	—		—
1:50	—	"	—	—	—	—	—	—	—		—
1:55	—	"	—	—	4.67	—	—	—	—		—
2:00	—	"	—	19.5	4.68	80.2	320	6.18	—	47.29	—
2:05	—	"	—	19.6	4.67	80.3	323	6.18	—		—
2:10	—	"	—	19.6	4.67	80.3	326	6.08	—		—
2:15	—	"	—	19.6	4.67	80.6	329	6.11	—		—
2:20	—	"	—	19.5	4.66	80.7	332	6.15	—	47.29	—
2:25	—	"	—	19.4	4.66	80.9	328	6.17	—	—	—
2:30	—	"	—	19.5	4.65	80.9	334	6.20	—	—	—
2:35	—	"	—	19.5	4.65	81.2	337	6.23	<10	—	—

Sample Condition Color: COLORLESS Odor: NONE Appearance: CLEAR

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: N4001348.0405 Task: 00002 Well ID: GM-740-2
Date: 8-18-05 Sampled By: GW
Sampling Time: 3:45pm Recorded By: GW
Weather: clear 85° Coded Replicate No.: MS/MSD

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

Purging Information
Casing Material: PVC Purge Method: Low flow / Dedicated Bladder
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): 54.44 Purge time Start: 2:45 pm Finish: 3:45pm

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
2:45	—	450	—	20.6	4.87	81.1	321	6.88	—	54.49 53.19	—
2:50	—	"	—	20.8	4.89	76.1	322	5.32	—	—	—
2:55	—	"	—	19.8	4.87	73.0	323	1.99	—	—	—
3:00	—	"	—	19.5	4.90	73.9	320	1.55	—	—	—
3:05	—	"	—	19.4	5.01	75.0	309	2.57	—	53.50	—
3:10	—	"	—	19.3	4.95	71.5	320	2.95	—	—	—
3:15	—	"	—	19.2	4.94	70.4	320	2.96	—	—	—
3:20	—	"	—	19.1	4.86	70.6	330	3.22	—	—	—
3:25	—	"	—	19.2	4.84	71.0	324	3.09	—	—	—
3:30	—	"	—	19.1	4.84	71.8	330	3.12	—	53.45	—
3:35	—	"	—	19.0	4.84	73.2	338	325	—	—	—
3:40	—	"	—	19.0	4.84	73.7	338	329	—	—	—
3:45	—	"	—	19.0	4.82	73.6	332	3.34	8.2	—	—

Sample Condition Color: COLORLESS Odor: NONE Appearance: CLEAR

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☑ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Model YSI 600 XL Serial 02J0183A1	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☑ ORP Meter Model OAKTON ACORN Serial 270569
☑ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton 300 Series Serial 197765	☐ Rental Model Serial

Project # N4001348.0405.00002

Date 8-18-05

Time 11:50

Personnel GW

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero		YES
Span	100	

Parameter D.O.	Calibration Successful
100% Saturated Air	✓
Barometer Adjustment	NO
Elevation Adjustment	NO

ph (si Units)		
4.00		✓
7.00		✓
10.00		

* ORP (Mv)	
Hydroquinone (240) (Black)	✓ 250
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1/month		
84 umhos		✓
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU) N/A		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS

Water Sampling Log

Project: Northrop Grumman NY001348.0405 | Project No.: 00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 08/19/05

Site/Well No.: GM-155 | Replicate No.: N/A | Code No.: —

Weather: — | Sampling Time: Begin 3:12 End —

Evacuation Data

Measuring Point	top of casing (TOC)
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	80 ft
Depth to Water (ft bmp)	46.64
Water-Level Elevation (ft)	—
Water Column in Well (ft)	33.36
Casing Diameter/Type	4" (0.65)
Gallons in Well	33.36 x .65 = 21.7 x3
Gallons Pumped/Bailed Prior to Sampling	65 gallons
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 3:12 end ↓
Pumping Rate (gpm)	Q=2 T=33 W=11 mw
Evacuation Method	Rediflow pump

Field Parameters

Field Parameters	I	1J	2J	3J
Color	grey	clear	clear	
Odor	none	none	none	
Appearance	turbid	clear	clear	
pH (s.u.)	6.11	5.59	5.48	
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	319	339	346	346
Turbidity (NTU)	>200	6.7	5.1	
Temperature (°C)	20.8	17.4	17.2	18.5
Dissolved Oxygen (mg/L)	—	—	✓	—
~~Salinity (ppt)~~	2:39	2:50	3:01	3:12

Sampling Method: 3 well volume

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW JC

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: 400134B.0405 Task: 00002 Well ID: GM-15D
Date: 8-19-05 Sampled By: GW JC
Sampling Time: 12:10pm Recorded By: JC
Weather: 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): 49.10 Purge time Start: 11:10 AM Finish: 12:10

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
11:10	–	450	–	19.5	5.76	149.7	216	4.93	–	–	–
11:15	–	450	–	18.6	4.91	168.8	233	2.54	–	–	–
11:20	–	450	–	18.5	4.48	154.0	246	3.00	–	–	–
11:25	–	450	–	18.3	4.45	154.0	258	3.44	–	49.15	–
11:30	–	450	–	18.1	4.62	153.2	270	3.64	–	–	–
11:35	–	450	–	18.2	4.43	152.1	287	3.84	–	–	–
11:40	–	450	–	18.2	4.43	151.5	297	3.89	–	49.12	–
11:45	–	450	–	18.2	4.45	150.9	308	3.77	–	–	–
11:50	–	450	–	18.2	4.45	149.9	314	3.82	–	–	–
11:55	–	450	–	18.1	4.47	150.1	323	3.82	–	49.17	–
12:00	–	450	–	18.1	4.47	149.6	329	3.80	–	–	–
12:05	–	450	–	18.2	4.47	149.6	335	3.90	–	–	–
12:10	–	450	–	18.1	4.47	149.6	338	3.90	<20	49.12	–

Sample Condition Color: Clear Odor: none Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-15D2
Date: 8-19-05 Sampled By: GW JL
Sampling Time: 1:20 pm Recorded By: JL
Weather: 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): 52.04 Purge time Start: 12:20 pm Finish: 1:20 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:20	–	450	–	19.4	4.67	147.6	333	5.00	–	–	–
12:25	–	450	–	18.6	4.77	83.7	331	3.19	–	–	–
12:30	–	450	–	18.3	4.75	76.8	335	2.69	–	–	–
12:35	–	450	–	18.0	4.75	76.6	338	4.23	–	52.00	–
12:40	–	450	–	17.9	4.78	76.5	335	4.99	–	–	–
12:45	–	450	–	17.7	4.78	75.9	345	5.08	–	–	–
12:50	–	450	–	17.7	4.78	76.2	349	5.31	–	52.04	–
12:55	–	450	–	17.8	4.78	76.1	348	5.37	–	–	–
1:00	–	450	–	17.8	4.78	76.1	353	5.38	–	–	–
1:05	–	450	–	17.8	4.78	76.2	356	5.52	–	51.98	–
1:10	–	450	–	17.7	4.77	76.2	358	5.47	–	–	–
1:15	–	450	–	17.7	4.77	76.4	354	5.46	–	–	–
1:20	–	450	–	17.8	4.77	76.1	354	5.46	8.6	–	–

Sample Condition Color: clear Odor: none Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman NY001348.0405 | Project No.: 00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 08/19/05

Site/Well No.: PLT1MW-04 | Replicate No.: N/A | Code No.: —

Weather: | Sampling Time: Begin 4:17 End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	56.5 ft
Depth to Water (ft bmp)	45.07
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11.43
Casing Diameter/Type	2" (0.16)
Gallons in Well	11.43 X 0.16 = 1.82
Gallons Pumped/Bailed Prior to Sampling	1.82 X 3 = 5.5 gal
Sample Pump Intake Setting (ft bmp)	Q=1 T=6 Iv=2
Purge Time	begin 4:11pm end 4:17pm
Pumping Rate (gpm)	
Evacuation Method	Rediflow Pump

Field Parameters

	4:11 I	4:13 1V	4:15 2V	4:17 3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	5.77	5.82	5.82	5.92
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	347	357	368	371
Turbidity (NTU)	50	20	12	6.6
Temperature (°C)	16.6	16.1	17.5	17.5
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)				

Sampling Method: 3 well volume

Remarks:

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW JC

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 NY001348.0405 | Project No. 00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 8/19/05

Site/Well No.: PLT1MW-05 | Replicate No.: N/A | Code No.: —

Weather: | Sampling Time: Begin | End

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	58 ft
Depth to Water (ft bmp)	44.12
Water-Level Elevation (ft)	
Water Column in Well (ft)	13.88
Casing Diameter/Type	2" (0.16)
Gallons in Well	13.88 x 0.16 = 2.22
Gallons Pumped/Bailed Prior to Sampling	2.22 x 3 = 7 gal
Sample Pump Intake Setting (ft bmp)	Q=1 T=7 min Dr=2.3
Purge Time	begin ____ end ____
Pumping Rate (gpm)	1
Evacuation Method	Rediflow Pump

Field Parameters

	I 3:26	1V 3:28	2V 3:31	3V 3:33
Color	brown	brown	clear	
Odor	none	none	none	none
Appearance	turbid	turbid	clear	clear
pH (s.u.)	5.45	5.63	5.58	5.61
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	141.9	133 to 240	137.7	132.8
Turbidity (NTU)	700		40	17
Temperature (°C)	17.3	17.5	16.9	16.7
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)				
Sampling Method		3 well volume		

Remarks:

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: G.V. JC

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 NY001348.0405 | Project No.: 00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 08/19/05

Site/Well No.: PLT1MW-06 | Replicate No.: N/A | Code No.: —

Weather: | Sampling Time: Begin 3:57 End 3:58

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	62.0
Depth to Water (ft bmp)	46.60
Water-Level Elevation (ft)	—
Water Column in Well (ft)	15.4
Casing Diameter/Type	2" (0.16)
Gallons in Well	15.4 x 0.16 = 2.46 x 3
Gallons Pumped/Bailed Prior to Sampling	7.4 gallons
Sample Pump Intake Setting (ft bmp)	60
Purge Time	begin 3:49 end 3:57
Pumping Rate (gpm)	Q = 1 gpm
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	3:49 I	3:51 1V	3:54 2V	3:57 3V
Color	brown	light brn	light grey	clear
Odor	none	none	none	none
Appearance	turbid	turb.	turb.	clear
pH (s.u.)	5.38	5.37	5.36	5.36 5.42 5.44
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	194.8	233	234	241
Turbidity (NTU)	>200	300	85	45
Temperature (°C)	17.2	16.9	16.9	17.1
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)				
Sampling Method	3 well volume			
Remarks				

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW JC

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

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☑ D.O. Meter Model 55 Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☑ ORP Meter Model Oakton 1Series Serial
☐ PID Model Photovac 2020 Serial	☐ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton Serial	☐ Rental Model Serial

Project # NY001348.0405.0002

Date 8-19-05

Time 10:00

Personnel GW. BTC

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv) Lamp Problem		Calibration Successful
Zero		
Span		

ph (si Units)		
4.00		✓
7.00		✓
10.00		

Conductivity (umhos) Inaccurate		
84 umhos		
1413 uhmos		
Other		

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

Parameter D.O.	Calibration Successful
100% Saturated Air	✓
Barometer Adjustment	ND
Elevation Adjustment	~~ND~~ ND

* ORP (Mv) PROBE CHECK 8-18	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

* No adjustment on some meters just a probe check, others are adjustable

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 8/22/05

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

Weather: Partly cloudy 87° | Sampling Time: Begin 2:34 | End 2:42pm

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 ×3
Gallons Pumped/Bailed Prior to Sampling	24
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 1:29pm end 2:37
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.)	4.86	4.99	5.03	5.04
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	90.9	87.4	87.1	86.4
Turbidity (NTU)	—	—	—	5.9
Temperature (°C)	16.6	16.2	16.3	16.2
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	—	# III	# III	# III

Sampling Method: 3 well volume

Remarks: DTW = 37.75

202 - 37.75 x .43 + 50 = 125 PSI Rounded up

Note! # = 5 gallons

Split sample with Bethpage Water District

PID 0 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	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

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 4/22/05

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

Weather: Mostly cloudy 87° | Sampling Time: Begin 4:53 End 4:56pm

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 3:22 end 4:53
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.)	11.82	11.32	9.90	9.55
Conductivity ~~(mS/cm)~~ (µmhos/cm)	293	252	1470	1360
Turbidity (NTU)	—	—	—	13
Temperature (°C)	16.3	16.4	16.0	15.7
~~Dissolved Oxygen (mg/l)~~ 5 Gallon containers	—	•••	•••	•••
Salinity (%)				

Sampling Method: 3 well volume

Remarks: DTW = 40.88

518 - 40.88 x .43 + 50 = 260 PSI (Rounded up)

Split sample with Bethpage Water District

PID 0

Constituents Sampled

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

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☑ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton 300 Serial 197765	☐ Rental Model Serial

Project # NY001348.0405.00002

Date 4/22/05

Time

Personnel

Check appropriate box for equipment calibrated. ***If two similar items are calibrated, please note two checks under calibration successful***

Parameter PID (ppmv)		Calibration Successful
Zero	✓	Yes
Span	✓	Yes

Parameter D.O. N/A	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00	✓	Yes
7.00	✓	Yes
10.00		

* ORP (Mv) N/A	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

* No adjustment on some meters just a probe check, others are adjustable

Turbidity (NTU) 1/week		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-38D
Date: 8/23/05 Sampled By: PP
Sampling Time: 3:17pm Recorded By: PP
Weather: Partly cloudy 82° 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 / Bottom /
Sounded Depth (ft bmp): 340 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 41.81 Purge time Start: 2:15pm Finish: 3:15pm

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
2:15	—	—	—	18.3	5.49	115.0	200	4.67	—	—	—
2:20	—	—	—	18.9	5.48	114.9	218	4.05	—	41.73	—
2:25	—	—	—	19.3	5.48	114.9	230	3.53	—	—	—
2:30	—	—	—	19.6	5.49	114.8	242	2.74	—	41.72	—
2:35	—	—	—	20.1	5.47	114.9	252	2.22	—	—	—
2:40	—	—	—	20.1	5.47	114.9	255	2.09	—	41.69	—
2:45	—	—	—	19.9	5.47	115.1	261	1.90	—	—	—
2:50	—	—	—	19.8	5.47	115.2	265	1.74	—	41.65	—
2:55	—	—	—	19.4	5.45	115.6	269	1.60	—	—	—
3:00	—	—	—	18.7	5.40	116.1	271	1.33	—	41.60	—
3:05	—	—	—	18.3	5.37	116.9	277	1.22	—	—	—
3:10	—	—	—	18.2	5.37	116.8	279	1.16	—	41.58	—
3:15	—	—	—	18.3	5.35	117.4	282	1.12	3.7	—	—

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

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: 0

Comments: /

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001349.0405 Task: 00002 Well ID: GM-38D2
Date: 9/23/05 Sampled By: PP
Sampling Time: 4:52 pm Recorded By: PP
Weather: 80° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top / Bottom /
Sounded Depth (ft bmp): 49.5 Pump Intake Depth (ft bmp): /
Depth to Water (ft bmp): 44.53 Purge time Start: 3:50 pm Finish: 4:50 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~mS/cm~~ µS	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
3:50	—	—	—	19.0	5.14	74.6	322	6.63	—	—	—
3:55	—	—	—	19.0	5.02	71.9	328	5.40	—	44.42	—
4:00	—	—	—	18.0	4.98	71.5	—	3.40	—	—	—
4:05	—	—	—	17.0	4.91	71.3	341	2.91	—	44.40	—
4:10	—	—	—	16.5	4.89	71.1	333	1.63	—	—	—
4:15	—	—	—	16.5	4.75	71.3	336	1.19	—	44.43	—
4:20	—	—	—	16.4	4.62	70.1	343	.87	—	—	—
4:25	—	—	—	16.4	4.63	69.6	344	.84	—	44.38	—
4:30	—	—	—	16.4	4.65	68.5	336	.82	—	—	—
4:35	—	—	—	16.4	4.65	67.8	340	.80	—	44.35	—
4:40	—	—	—	16.4	4.64	67.8	342	.81	—	—	—
4:45	—	—	—	16.3	4.68	67.6	343	.81	—	44.30	—
4:50	—	—	—	16.3	4.72	67.5	344	.78	4.1	—	—

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

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: 0

Comments: /

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 8/23/05

Site/Well No.: GM-70D2 | Replicate No.: N/A | Code No.: —

Weather: clear 80° | Sampling Time: Begin 1:15pm End 1:18pm

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 12:08pm end 1:13pm
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.)	5.13	4.87	4.87	4.88
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	173.4	104.6	98.9	98.3
Turbidity (NTU)	—	—	—	6.7
Temperature (°C)	17.0	16.6	16.8	16.6
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~	—	•••	•••	•••

Sampling Method: 3 well volume

Remarks: PID: 0

• = 5 gallon container

308 − 43.81 x .43 + 50 = 170 PSI Rounded up

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: [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	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

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☑ D.O. Meter Model 55/25 FT Serial 00H0611	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☑ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton Serial	☐ Rental Model Serial

Project # NY001348.0405.0002

Date 9/23/05

Time —

Personnel PP

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	✓	✓
Span	✓	✓

Parameter D.O.	Calibration Successful
100% Saturated Air	Yes
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00	✓	Yes
7.00	✓	yes
10.00		

* ORP (Mv)	1/per week
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)	1/Month	
84 umhos		
1413 uhmos		
Other		

* No adjustment on some meters just a probe check, others are adjustable

Turbidity (NTU)	1 per week	
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 9/24/05

Site/Well No.: GM-37D | Replicate No.: N/A | Code No.: —

Weather: Partly cloudy 81° | Sampling Time: Begin 4:55 | End 4:59 pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	262
Depth to ~~Water~~ Packer (ft bmp)	240
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 3:03 pm end 4:54
Pumping Rate (gpm)	/
Evacuation Method	Dedicated Bladder/packer

Field Parameters

	I	1 V (colorless)	2 V (colorless)	3 V (colorless)
Color	Colorless			
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	4.77	4.64	4.68	4.67
Conductivity ~~(mS/cm)~~ (µmhos/cm)	182.3	182.9	183.2	190.3
Turbidity (NTU)	/	—	—	3.4
Temperature (°C)	16.4	16.5	16.2	15.7
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon container	—	#	# # #	# # #

Sampling Method: 3 well volume

Remarks: DTW = 41.89

= 5 gallon container

240 − 41.89 x .43 + 50 = 140 psi Rounded up

Split sample for Bethpage Water District

PID 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: RP

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 &

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 8/24/05

Site/Well No.: GM-37D2 | Replicate No.: N/A | Code No.: —

Weather: Partly cloudy 85° | Sampling Time: Begin 2:35 End 2:39

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 11:48 AM end 2:33
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.)	4.49	4.62	4.69	4.72
Conductivity ~~(mS/cm)~~ (µmhos/cm)	141.4	140.1	145.9	149.0
Turbidity (NTU)	—	—	—	5.9
Temperature (°C)	16.7	16.4	16.3	16.0
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	1	1	1

Sampling Method: 3 well volume

Remarks: 1 = 5 gallon container

367 − 43.06 x .43 + 50 = 190 PSI

Split samples for Bethpage Water District

PID 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☑ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Serial 197765	☐ Rental Model Serial

Project # NY001348.0405.0002

Date 8/24/05

Time —

Personnel PP

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	✓	✓
Span	✓	✓

ph (sl Units)		
4.00	✓	
7.00	✓	
10.00		

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

Turbidity (NTU) 1/per week		
1.0 NTU		
10 NTU		
40 NTU		
Other		

Parameter D.O. N/A	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

* ORP (Mv) N/A	
Hydroquinone (240).(Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

* No adjustment on some meters just a probe check, others are adjustable

ARCADIS

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 8/25/05

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

Weather: clear 76° | Sampling Time: Begin 12:24 | End 12:28pm

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
Gallons Pumped/Bailed Prior to Sampling	x3 45
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 10:42 end 12:23
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.)	5.10	5.01	5.08	5.03
Conductivity ~~(mS/cm)~~ (µmhos/cm)	138.4	118.1	116.9	115.9
Turbidity (NTU)	—	—	—	3.5
Temperature (°C)	16.6	16.4	16.6	16.5
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	# # #	# # #	# # #

Sampling Method: 3 well Volume

Remarks: DTW= 43.48

= 5 gallon containers

507 - 43.48 x .43 + 50 = 255 PSI Rounded up

PID 0

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-39D
Date: 8/25/05 Sampled By: PP
Sampling Time: 2:40pm Recorded By: PP
Weather: clear 88° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 262 Bottom 282
Sounded Depth (ft bmp): 282 Pump Intake Depth (ft bmp): 272
Depth to Water (ft bmp): 41.31 Purge time Start: 1:40pm Finish: 2:40pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~uS/cm~~ mS/cm	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
1:40	—	—	—	20.1	5.80	97.7	266	7.76	—	—	—
1:45	—	—	—	18.8	5.60	100.3	273	7.94	—	41.31	—
1:50	—	—	—	20.6	5.49	100.2	270	7.29	—	—	—
1:55	—	—	—	21.1	5.49	100.1	274	7.04	—	41.30	—
2:00	—	—	—	21.3	5.47	99.8	281	7.20	—	—	—
2:05	—	—	—	21.6	5.48	99.6	288	7.39	—	41.30	—
2:10	—	—	—	21.4	5.50	99.9	295	7.24	—	—	—
2:15	—	—	—	21.3	5.49	99.7	299	7.35	—	41.30	—
2:20	—	—	—	21.2	5.49	99.8	304	7.31	—	—	—
2:25	—	—	—	21.3	5.50	99.8	300	7.19	—	41.30	—
2:30	—	—	—	21.3	5.50	99.9	305	7.09	—	—	—
2:35	—	—	—	21.2	5.50	100.1	307	7.13	—	41.29	—
2:40	—	—	—	21.4	5.50	100.1	310	7.23	3.7	—	—

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

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: 0

Comments: ✓

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-39D2
Date: 8/25/05 Sampled By: PP
Sampling Time: 4:50pm Recorded By: PP
Weather: Partly cloudy 86° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 410 Bottom 420
Sounded Depth (ft bmp): 420 Pump Intake Depth (ft bmp): 415
Depth to Water (ft bmp): 44.13 Purge time Start: 3:45pm Finish: 4:50pm

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
3:45	—	—	—	23.2	5.16	106.4	372	7.65	—	—	—
3:50	—	—	—	19.0	5.16	108.1	369	7.29	—	—	—
3:55	—	—	—	19.8	5.16	107.6	366	7.12	—	—	—
4:00	—	—	—	20.2	5.16	107.1	359	7.20	—	44.19	—
4:05	—	—	—	20.3	5.16	107.1	362	7.03	—	—	—
4:10	—	—	—	20.3	5.16	106.8	363	7.31	—	44.13	—
4:15	—	—	—	20.1	5.15	106.8	365	7.08	—	—	—
4:20	—	—	—	20.5	5.13	106.9	355	7.02	—	44.13	—
4:25	—	—	—	20.3	5.13	106.6	361	7.03	—	—	—
4:30	—	—	—	20.1	5.16	106.8	364	7.14	—	44.13	—
4:35	—	—	—	20.1	5.16	106.9	366	7.17	—	—	—
4:40	—	—	—	20.5	5.15	106.6	358	7.03	—	44.12	—
4:45	—	—	—	20.0	5.17	106.9	363	7.22	—	—	—
4:50	—	—	—	19.6	5.16	106.9	366	7.28	3.6	44.13	—

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading 0

Comments —

G:\APROJECT\WHCS Melville\EXD Filor Test\lowflowsampforms.xls-LoFlo-GW-Samp

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☑ D.O. Meter Model 55/25FT Serial 04H0611	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☑ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton Serial	☐ Rental Model Serial

Project # NY001348.0405.00002

Date 8/25/05

Time

Personnel

*Check appropriate box for equipment calibrated. **If two similar items are calibrated, please note two checks under calibration successful***

Parameter PID (ppmv)		Calibration Successful
Zero	✓	✓
Span	✓	✓

ph (s) Units)		
4.00	✓	yes
7.00	✓	yes
10.00		

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

Turbidity (NTU) 1/per Week		
1.0 NTU		
10 NTU		
40 NTU		
Other		

Parameter D.O.	Calibration Successful
100% Saturated Air	Yes
Barometer Adjustment	
Elevation Adjustment	

* ORP (Mv) 1/per week	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

* No adjustment on some meters just a probe check, others are adjustable

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.1405.0002 | Page 1 of 1
Site Location: Bethpage, NY | Date: 8/26/05
Site/Well No.: GM-71D2 | Replicate No.: N/A | Code No.: —
Weather: Mostly cloudy 82° | Sampling Time: Begin 3:50 End 3:54 pm

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 2:29 end 3:50 pm
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.)	5.26	4.75	4.76	4.71
Conductivity ~~(mS/cm)~~ (µmhos/cm)	196.5	181.8	181.7	180.3
Turbidity (NTU)	—	—	—	3.9
Temperature (°C)	16.5	15.7	15.5	15.6
Dissolved Oxygen (mg/L)	—	—	—	—
5 gallon container ~~Salinity (%)~~	—	#	#	#

Sampling Method: 3 well volume

Remarks: # = 5 gallon container
PTW = 45.00
442 - 45.00 x .43 + 50 = 225 PSI
(Split sample with Bethpage Water District) Rounded up

PID 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: 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: NY00 1348.0405 Task: 0002 Well ID: GM-73D2
Date: 8/26/05 Sampled By: PP
Sampling Time: 12:20pm Recorded By: PP
Weather: Mostly cloudy 84° 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 532 Bottom 552
Sounded Depth (ft bmp): 552 Pump Intake Depth (ft bmp): 542
Depth to Water (ft bmp): 48.38 Purge time Start: 11:15 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 ~~(mS/cm)~~	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
11:15	–	–	–	21.7	4.93	152.2	295	9.06	–	–	–
11:20	–	–	–	19.8	4.76	139.2	299	7.10	–	45.62	–
11:25	–	–	–	20.0	4.71	127.8	307	7.02	–	–	–
11:30	–	–	–	20.0	4.63	108.5	315	7.54	–	46.83	–
11:35	–	–	–	20.0	4.59	105.6	317	7.81	–	–	–
11:40	–	–	–	19.9	4.63	104.5	328	7.21	–	47.05	–
11:45	–	–	–	19.7	4.67	104.9	334	7.14	–	–	–
11:50	–	–	–	19.8	4.73	103.5	342	6.75	–	46.97	–
11:55	–	–	–	19.8	4.74	103.4	347	7.04	–	–	–
12:00	–	–	–	19.8	4.74	102.8	353	7.00	–	47.06	–
12:05	–	–	–	19.8	4.76	102.8	357	6.83	–	–	–
12:10	–	–	–	19.7	4.76	102.5	358	7.23	–	47.09	–
12:15	–	–	–	19.6	4.78	102.5	367	7.29	–	–	–
12:20	–	–	–	19.6	4.78	102.3	370	7.40	3.6	–	–

Sample Condition Color: / Odor: / Appearance: /

Sample Collection

Parameter:	Container:	No.	Preservative:
See CoC			

PID Reading 0

Comments /

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☑ D.O. Meter Model 55/25 FT Serial 00H0611	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☑ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton Serial 197765	☐ Rental Model Serial

Project # NY001348.0405.0002

Date 9/26/05

Time

Personnel PP

*Check appropriate box for equipment calibrated. **If two similar items are calibrated, please note two checks under calibration successful***

Parameter PID (ppmv)		Calibration Successful
Zero	✓	yes
Span	✓	yes

ph (si Units)		
4.00	✓	yes
7.00	✓	yes
10.00		

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

Turbidity (NTU) 1 per week		
1.0 NTU		
10 NTU		
40 NTU		
Other		

Parameter D.O.	Calibration Successful
100% Saturated Air	yes
Barometer Adjustment	
Elevation Adjustment	

* ORP (Mv) 1/per week	
Hydroquinone (240).(Black)	
Zobel Solution (237) (yellow)	
Temperature Eased Chart Calibration	
* Adjusted	

* No adjustment on some meters just a probe check, others are adjustable

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0415.00002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 8/29/05

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

Weather: | Sampling Time: Begin 4:4 | End:

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67.0
Depth to Water (ft bmp)	38.31
Water-Level Elevation (ft)	—
Water Column in Well (ft)	28.69
Casing Diameter/Type	2" (0.16) / steel
Gallons in Well	4.59
Gallons Pumped/Bailed Prior to Sampling	x3 14
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 4:40 end
Pumping Rate (gpm)	1GPM
Evacuation Method	Rediflow pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	Colorless	colorless	colorless	colorless
Odor	none	none	none	none
Appearance	Clear	clear	clear	clear
pH (s.u.)	7.66	7.58	7.23	7.07
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	99.3	99.2	98.5	96.9
Turbidity (NTU)	—	—	—	20.0
Temperature (°C)	21.6	21.6	21.6	22.1
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)				

Sampling Method: 3 well Volume

Remarks: very turbid at start

DTW = 38.31

PID reading at wellhead 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: PP JAC

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: NGC | Project No.: NY001348.0405.0002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 8/29/05

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

Weather: Humid, Hot 80° | Sampling Time: Begin 14:45 End 14:50

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	140
Depth to ~~Water~~ (ft bmp)	approx 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 13:30 end 14:45
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.)	9.29	9.90	9.99	9.90
Conductivity ~~(mS/cm)~~	~~1.813~~	—	—	—
(µmhos/cm)	1813	112.8	114.0	111.0
Turbidity (NTU)	—	—	—	3.7
Temperature (°C)	20.1	17.6	17.7	17.3
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 G Containers	—			

Sampling Method: 3 well Volume

Remarks: PID at wellhead 0

DTW = 40.13

(129 - 40.13) x 0.43 PSI = 39 PSI Pump up

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: SAC/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

btmp	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 ~~0002~~ Task: 0000 2 Well ID: GM-21D
Date: 8/29/05 Sampled By: JAC/PP
Sampling Time: 1:00pm Recorded By: JAC
Weather: Humid, Hot 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): 45.25 Purge time Start: 12:00 Finish: 1:00 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
12:00	—	—	—	21.3	4.31	91.5	266	5.01	—	45.25	—
12:05	—	—	—	20.7	4.19	90.2	268	4.64	—	—	—
12:10	—	—	—	20.9	4.07	90.1	275	[illegible]	—	45.25	DO=4.74
12:15	—	—	—	20.4	4.09	88.7	284	5.23	—	—	—
12:20	—	—	—	20.5	4.20	85.9	305	5.28	—	45.29	—
12:25	—	—	—	20.5	4.28	85.6	307	5.32	—	—	—
12:30	—	—	—	20.6	4.19	85.4	322	5.23	—	45.35	—
12:35	—	—	—	20.4	4.22	85.3	336	5.45	—	—	—
12:40	—	—	—	20.5	4.21	85.5	339	5.41	—	45.35	ORP=339
12:45	—	—	—	20.4	4.28	85.2	347	5.38	—	—	—
12:50	—	—	—	20.5	4.29	85.5	352	5.41	—	45.36	—
12:55	—	—	—	20.6	4.33	85.4	361	5.48	—	—	—
13:00	—	—	—	20.4	4.34	85.6	369	5.42	—	45.37	—

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

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading At well head 0

Comments

ARCADIS

Site Activities Tailgate Safety Briefing Sign-in Log

Project Number:	NY001348.0405.T2	Project Name:	N-Grumman
Date:	8/29/05	Time:	—
Briefing Conducted by: Pat Prezorki	Signature: Pat Prezorki	Company: Arcadis	

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

- ☑ General PPE Usage
- ☑ Hearing Conservation
- ☐ Respiratory Protection
- ☑ Personal Hygiene
- ☑ Exposure Guidelines
- ☑ Decon Procedures
- ☑ Emergency Procedures (include route to hospital)
- ☐ Confined Space
- ☑ Slips, Trips, Falls
- ☑ Heat Stress
- ☐ Thermal Stresses
- ☑ Site Control
- ☐ Work Zones
- ☐ Lockout/Tagout
- ☐ Excavation Safety
- ☐ Confined Space
- ☑ Traffic Safety
- ☐ Changes to the HASP
- ☑ Initial Review of Hazard Evaluation
- ☐ Other (specify): Nitrogen Gas
- ☐ Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name
Pat Prezorki	Pat Prezorki	Arcadis
Jen Cherlin	JM Cherlin	Arcadis

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Model YSI 600 XL Serial 02J0183A1	☐ Turbidity Meter Model 2020 Lamotte Serial	☑ D.O. Meter Model 55/25 FT Serial 00H0611	☐ ORP Meter Model Serial
☑ PID Model Photovac 2020 Serial ED HF 358	☑ PID Model Photovac 2020 Serial ED HF358	☑ pH Cond Temp Model Oakton 300 Series Serial 197765	☐ Rental Model Serial

Project # NY001348.0405.00002

Date 8/29/05

Time 11:10am

Personnel JAC / P.P.

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	✓
Span	100.0	✓

Parameter D.O.	Calibration Successful
100% Saturated Air	✓
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00	✓	✓
7.00	✓	✓
10.00		

* ORP (Mv) 1/per week	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU) 1/per week		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 8/30/05

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

Weather: Partly cloudy 89° | Sampling Time: Begin 2106 | End 2109 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)
Gallons in Well	7.15
	x3
Gallons Pumped/Bailed Prior to Sampling	22
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 1110 pm end 2106 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.)	11.06	11.00	10.87	10.89
~~Conductivity (mS/cm)~~ (µmhos/cm)	265 ↓	218	197.4	188.8
Turbidity (NTU)	—	—	—	—
Temperature (°C)	18.3	17.7	17.6	17.6
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 Gallon Container	—	½	½	½

Sampling Method: 3 well volume

Remarks: No turbidity meter

DTW = 38.59

94 - 38.59 x .43 + 50 = 80 PSI Rounded up

½ = 5 gallon container

PID 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: OP

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

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 8/30/05

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

Weather: Mostly cloudy 84° | Sampling Time: Begin 4:26 | End 4:29pm

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 22
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 3:27 end 4:26pm
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.)	5.33	5.30	5.19	5.19
Conductivity ~~(mS/cm)~~ (µmhos/cm)	285	280	275	273
Turbidity (NTU)	—	—	—	—
Temperature (°C)	18.3	17.7	17.4	17.4
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ 5 gallon containers	—	½	½	½

Sampling Method: 3 well volume

Remarks: DTW = 46.74

94 − 46.74 × .43 + 50 = 75 psi Rounded up

PID 0

No Turbidity reader

New lock put on well

½ = 5 gallon containers

Constituents Sampled / Container Description / Number / Preservative

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	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

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 8/30/05

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

Weather: Mostly cloudy 83° | Sampling Time: Begin 12:30 | End 12:33pm

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	226
Depth to 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
	×3
Gallons Pumped/Bailed Prior to Sampling	22
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 11:37AM end 12:30pm
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.)	5.07	5.03	5.07	5.19
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	110.6	101.9	102.0	101.4
Turbidity (NTU)	—	—	—	—
Temperature (°C)	16.4	15.4	15.7	15.5
Dissolved Oxygen (mg/L)	—	—	—	—
5 gallon Containers / ~~Salinity (%)~~	—	#½	½#	#½

Sampling Method: 3 well Volume

Remarks: No turbidity meter

DTW = 40.65

215 − 40.65 × .43 + 50 = 130 PSI Rounded up

= 5 gallon container

P+D O

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: RP

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

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☑ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton Serial	☐ Rental Model Serial

Project # NY001348.0405.00002

Date 8/30/05

Time —

Personnel RP

*Check appropriate box for equipment calibrated. **If two similar items are calibrated, please note two checks under calibration successful***

Parameter PID (ppmv)		Calibration Successful
Zero	✓	✓
Span	✓	✓

Parameter D.O. N/A	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (sI Units)		
4.00	✓	yes
7.00	✓	yes
10.00		

* ORP (Mv) N/A	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

* No adjustment on some meters just a probe check, others are adjustable

Turbidity (NTU) 1/per week		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS

Water Sampling Log

Project: Northrop Grumman NY003BA.0405 | Project No. 00002 | Page 1 of 1

Site Location: BETHPAGE NY | Date: 8-31-05

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

Weather: OVERCAST 75° | Sampling Time: Begin 3:20 End 3:25

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	/
Land Surface Elevation (ft)	/
Sounded Well Depth (ft bmp)	145
Depth to PACKER Water (ft bmp)	134
Water-Level Elevation (ft)	/
Water Column in Well (ft)	11
Casing Diameter/Type	4 (.65)
Gallons in Well	7.15 x3
Gallons Pumped/Bailed Prior to Sampling	226 Act
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 2:15 end 3:15
Pumping Rate (gpm)	/
Evacuation Method	Dedicated packer

Field Parameters

	1	1U	2U	3U
Color	dark reddish brown	dark reddish brown	dark reddish brown	dark reddish brown
Odor	none	none	none	none
Appearance	turbid	turbid	turbid	turbid
pH (s.u.)	5.27	8.75	7.67	7.12
Conductivity (mS/cm) (µmhos/cm)	258	227	213	252
	—	—	—	—
Turbidity (NTU)	—	—	—	150
Temperature (°C)	18.9	19.1	18.7	19.2
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	—	—	—	—
Sampling Method	3 Well Volume			

Remarks: PACKER PRESSURE 90 PSI

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW / JC

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

GM-13D

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: N4081348.0405 Task: Coool Well ID: GM-13D
Date: 8-31-05 Sampled By: GW JC JCh
Sampling Time: 12:10 Recorded By: JC
Weather: Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Low flow / Dedicated Bladder
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): 48.12 Purge time Start: 11:00 Finish: 12:10

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
11:00	–	450	–	25.1	5.50	174.0	251	3.62	–	48.12	–
11:05	–	450	–	24.9	5.54	181.9	255	3.13	–	–	–
11:10	–	450	–	25.8	5.28	175.2	268	2.61	–	–	–
11:15	–	450	–	25.6	5.32	170.2	272	2.46	–	48.16	–
11:20	–	450	–	25.2	5.26	169.3	275	2.34	–	–	–
11:25	–	450	–	24.9	5.28	167.4	275	2.39	–	–	–
11:30	–	450	–	24.9	5.24	167.5	276	2.23	–	48.25	–
11:35	–	450	–	24.9	5.30	167.4	277	2.28	–	–	–
11:40	–	450	–	25.2	5.30	167.9	279	2.26	–	–	–
11:45	–	450	–	25.2	5.29	167.9	274	2.26	–	48.20	–
11:50	–	450	–	25.1	5.29	168.1	276	2.23	–	–	–
11:55	–	450	–	25.1	5.30	167.7	276	2.31	–	–	–
12:00	–	450	–	25.0	5.29	168.0	277	2.16	7.5	48.25	–

Sample Condition Color: Clear Odor: None Appearance: Clear
Sample Collection
Parameter: See COC Container: No. Preservative:

PID Reading

Comments

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

ARCADIS

Site Activities Tailgate Safety Briefing Sign-in Log

Project Number:	NY001348.	Project Name:	NGC
Date:	08/31/05	Time:	10:15

Briefing Conducted by: Gary H. [illegible]	Signature:	Company: Arcadis

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

- [x] General PPE Usage
- [ ] Hearing Conservation
- [x] Respiratory Protection
- [x] Personal Hygiene
- [x] Exposure Guidelines
- [x] Decon Procedures
- [x] Emergency Procedures (include route to hospital)
- [ ] Confined Space
- [x] Slips, Trips, Falls
- [x] Heat Stress
- [ ] Thermal Stresses
- [ ] Site Control
- [x] Work Zones
- [ ] Lockout/Tagout
- [ ] Excavation Safety
- [ ] Confined Space
- [x] Traffic Safety
- [ ] Changes to the HASP
- [ ] Initial Review of Hazard Evaluation
- [ ] Other (specify):
- [ ] Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name
John Corral	John Corral	Arcadis
Gary H. [illegible]	[signature]	Arcadis
Jennifer [illegible]	[signature]	Arcadis

INSTRUMENT CALIBRATION FORM

☑ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Model YSI 600 XL Serial 02J0183A1	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☑ ORP Meter Model OAKTON ACOR Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☐ Rental Model Serial

Project # NYDOT B418.0405.00002

Date 7-31-08

Time

Personnel GVD JC JCh

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv) DRIZZLE	Calibration Successful
Zero	
Span	

Parameter D.O.	Calibration Successful
100% Saturated Air	YES
Barometer Adjustment	NO
Elevation Adjustment	NO

ph (si Units)		
4.00		YES
7.00		YES
10.00		

* ORP (Mv) NO	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1 MONTH	
84 umhos	
1413 uhmos	
Other	

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU) NO	
1.0 NTU	
10 NTU	
40 NTU	
Other	

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0805 Task: 0002 Well ID: GM-17D
Date: 9/11/05 Sampled By: JAC/PP
Sampling Time: 14:09 Recorded By: JAC
Weather: ~~Sunny, 75°F~~ Partly cloudy 87° 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): 52.60 Purge time Start: 12:45 Finish: 13:55

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~mS/cm~~ µS/cm	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:45	—	—	—	20.5	5.04	106.1	326	5.70	—	—	—
12:50	—	—	—	20.0	5.02	106.3	327	5.75	—	—	—
12:55	—	—	—	21.1	5.02	106.4	328	6.00	~~[illegible]~~	52.63	—
13:00	—	—	—	21.4	5.01	105.5	328	6.05	—	—	—
13:05	—	—	—	21.8	4.98	104.8	325	6.08	—	52.65	—
13:10	—	—	—	21.6	4.94	104.3	325	5.99	—	—	—
13:15	—	—	—	22.1	4.94	103.7	327	6.02	—	52.65	—
13:20	—	—	—	22.6	4.96	103.1	329	6.08	—	—	—
13:25	—	—	—	21.9	4.98	103.0	336	6.07	—	52.74	—
13:30	—	—	—	21.8	4.97	102.9	330	6.14	—	—	—
13:35	—	—	—	21.6	4.99	102.9	333	6.10	—	52.74	—
13:40	—	—	—	22.4	4.99	103.9	339	6.11	—	—	—
13:45	—	—	—	22.3	4.99	103.0	341	6.13	—	52.74	—

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

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: PID Not Working
Comments: No Turbidity Meter

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405.00002 Task: 00002 Well ID: GM-17I
Date: 9/1/05 Sampled By: JAC/PP
Sampling Time: 12:35 Recorded By: JAC
Weather: Sunny, 75° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder/Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 100 Bottom 120
Sounded Depth (ft bmp): 120 Pump Intake Depth (ft bmp): 110
Depth to Water (ft bmp): 50.44' Purge time Start: 11:30 Finish: 12:30

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	—	—	—	19.9	5.81	125.9	257	7.43	—	50.44	—
11:35	—	—	—	19.2	5.82	123.8	258	7.32	—	—	—
11:40	—	—	—	19.0	5.85	123.4	258	7.31	—	[illegible]	DTW = [illegible] 51.05
11:45	—	—	—	18.8	5.85	123.1	258	7.30	—	—	—
11:50	—	—	—	19.4	5.87	128.3	259	6.69	—	51.05	DTW = 51.05
11:55	—	—	—	21.7	5.89	125.8	258	6.56	—	—	—
12:00	—	—	—	21.9	5.91	125.1	261	6.41	—	[illegible]	DTW = 51.08
12:05	—	—	—	21.8	5.91	123.7	262	6.46	—	—	—
12:10	—	—	—	21.8	5.93	119.8	263	6.45	—	51.08	—
12:15	—	—	—	21.8	5.94	117.8	262	6.46	—	—	—
12:20	—	—	—	21.8	5.96	115.0	265	6.48	—	51.08	—
12:25	—	—	—	21.8	5.95	116.3	266	6.47	—	—	—
12:30	—	—	—	21.9	5.95	115.3	266	6.45	—	51.09	—

Sample Condition Color: colorless Odor: none Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
see COC			

PID Reading [illegible]

Comments / DID Not Working & NO Turbidity Meter.

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: 4400348.0405 Task: 00002 Well ID: GM-79I
Date: 9/1/05 Sampled By: JAC/PP
Sampling Time: 16:10 Recorded By: JAC
Weather: Sunny, 85° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 170 Bottom 180
Sounded Depth (ft bmp): 180 Pump Intake Depth (ft bmp): 175
Depth to Water (ft bmp): 42.95 Purge time Start: 15:20 Finish: 16:05

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~µS/cm~~ mS/cm	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
15:20	—	—	—	16.15	4.91	103.2	351	6.93	—	—	—
15:25	—	—	—	16.18	4.91	103.2	352	7.05	—	42.98	—
15:30	—	—	—	17.1	4.91	103.1	352	6.73	—	—	—
15:35	—	—	—	18.0	4.89	102.3	355	6.63	—	43.99	—
15:40	—	—	—	17.9	4.89	102.3	354	6.76	—	~~43.99~~	—
15:45	—	—	—	17.8	4.88	102.3	355	6.78	—	43.20	—
15:50	—	—	—	17.7	4.88	102.2	363	6.72	—	—	—
15:55	—	—	—	17.7	4.88	102.2	364	6.71	—	43.20	—
16:00	—	—	—	17.6	4.87	102.3	349	6.68	—	—	—
16:05	—	—	—	17.6	4.86	102.3	344	6.68	—	43.21	—

Sample Condition Color: colorless Odor: none Appearance: clear
Sample Collection

Parameter:	Container:	No.	Preservative:
see COC			

PID Reading: Not working
Comments: NO Turbidity meter

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-79D
Date: 9/1/05 Sampled By: JAC/PP
Sampling Time: 13:30 Recorded By: JAC
Weather: partly cloudy, 85° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder/Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 280 Bottom 290
Sounded Depth (ft bmp): 290 Pump Intake Depth (ft bmp): 285
Depth to Water (ft bmp): 44.51 Purge time Start: ~~16:25~~ 16:25 Finish: 17:25

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. ~~uS/cm~~ mS/cm	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
16:~~25~~	—	/	/	16.4	4.82	95.2	380	4.29	/	/	—
16:30	/	/	/	16.4	4.80	94.6	381	4.28	/	/	—
16:35	/	/	/	16.8	4.80	92.8	387	4.63	/	44.52	—
16:40	/	/	/	17.3	4.79	92.2	389	4.80	/	/	—
16:45	/	/	/	17.3	4.75	92.4	393	4.75	/	~~44.53~~	—
16:50	/	/	/	17.2	4.75	93.6	360	4.79	/	/	—
16:~~55~~	/	/	/	17.2	4.73	93.7	398	4.87	/	44.53	—
17:00	/	/	/	17.1	4.73	93.9	398	4.83	/	/	—
17:05	/	/	/	16.8	4.76	93.4	405	6.60	/	44.53	—
17:10	/	/	/	16.8	4.76	93.3	405	6.89	/	/	—
17:15	/	/	/	16.7	4.76	93.2	406	7.04	/	44.55	—
17:20	/	/	/	16.8	4.78	93.3	411	7.88	/	/	—
17:25	/	/	/	16.5	4.77	93.3	413	7.98	/	44.56	

Sample Condition Color: colorless Odor: none Appearance: clear

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: Not working

Comments: NO Turbidity meter

ARCADIS

Site Activities Tailgate Safety Briefing Sign-in Log

Project Number:	NY001348.0405.T2	Project Name:	N-Grumman
Date:	9/1/05	Time:	—
Briefing Conducted by: Pat Prezorski	Signature: Pat Prezorski	Company: Arcadis	

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

☑ General PPE Usage	☐ Confined Space	☐ Excavation Safety
☑ Hearing Conservation	☑ Slips, Trips, Falls	☐ Confined Space
☐ Respiratory Protection	☑ Heat Stress	☑ Traffic Safety
☑ Personal Hygiene	☐ Thermal Stresses	☐ Changes to the HASP
☐ Exposure Guidelines	☑ Site Control	☑ Initial Review of Hazard Evaluation
☐ Decon Procedures	☐ Work Zones	☐ Other (specify):
☑ Emergency Procedures (include route to hospital)	☐ Lockout/Tagout	☐ Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name
Pat Prezorski	Pat Prezorski	Arcadis
Jen Cherlin	Jen Cherlin	Arcadis

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☐ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton Serial	☐ Rental Model Serial

Project # NY001348.0405.0002

Date 9/1/05

Time

Personnel QP

Check appropriate box for equipment calibrated. ***If two similar items are calibrated, please note two checks under calibration successful***

Parameter PID (ppmv)		Calibration Successful
Zero		
Span		

Not working

Parameter D.O.	Calibration Successful
100% Saturated Air	Y
Barometer Adjustment	
Elevation Adjustment	

ph (sl Units)		
4.00	✓	Y
7.00	✓	Y
10.00		

* ORP (Mv) 1/per week	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

* No adjustment on some meters just a probe check, others are adjustable

Turbidity (NTU) 1/per week		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP GRUMMAN Project No. NY001348.0405.0000 Page 1 of 1

Site Location: Bethpage, NY Date: 9/7/05

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

Weather: Clear, 70°F Sampling Time: Begin 11:25 AM End —

Evacuation Data	
Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	55
Depth to Water (ft bmp)	37.4
Water-Level Elevation (ft)	—
Water Column in Well (ft)	17.6
Casing Diameter/Type	2" (.16) / PVC
Gallons in Well	3
Gallons Pumped/Bailed Prior to Sampling	15
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 11:10 end 11:25
Pumping Rate (gpm)	
Evacuation Method	Rediflow pump

Field Parameters	I	1J	2J	3J	4J	5J
	brown	brown	11:16	11:19	11:22	11:25
Color	11:10	11:13	cloudy	cloudy	clear	clear
Odor	none	none	none	none	none	none
Appearance	turbid	turbid	slightly turbid	slightly turbid	clear	clear
pH (s.u.)	6.10	5.75	5.64	5.63	5.69	5.63
Conductivity ~~(mS/cm)~~ µS	419	129.7	119.2	110.7	111.6	106.7
(µmhos/cm)	—	—	—	—	—	—
Turbidity (NTU)	>200	362	53.8	35.4	17.9	16.5
Temperature (°C)	16.5	16.0	16.0	15.0	15.1	15.2
Dissolved Oxygen (mg/L)	—	—	—	—	—	—
Salinity (%)	—	—	—	—	—	—
Sampling Method						

Remarks

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW / JC

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

Water Sampling Log

Project: NGC Sampling | Project No.: NY001348.0405.0002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 9/7/05

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

Weather: 75° | Sampling Time: Begin 3:50 | End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	70
Depth to Water (ft bmp)	50.48
Water-Level Elevation (ft)	19.52
Water Column in Well (ft)	19.52
Casing Diameter/Type	4" (0.65)
Gallons in Well	19.52 x .65 = 12.7 x3
Gallons Pumped/Bailed Prior to Sampling	39 gallons
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 3:30 end 3:50
Pumping Rate (gpm)	2
Evacuation Method	Rediflow pump

Field Parameters

	I 3:30	1V 3:37	2V 3:44	3V 3:50
Color	Slightly cloudy	clear	clear	clear
Odor	none	none	none	none
Appearance	Slightly cloudy	clear	clear	clear
pH (s.u.)	6.27	5.37	5.21	5.27
Conductivity (mS/cm) ~~uS~~	448	132.8	130.3	127.7
(µmhos/cm)	—	—	—	—
Turbidity (NTU)	34.0	26.7	8.91	8.50
Temperature (°C)	19.1	17.0	16.6	16.7
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)				
Sampling Method		3	well	volume

Remarks:

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW JC

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 Date: 9-7-05

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

Weather: CLEAR 75° Sampling Time: Begin 4:56 End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	70.
Depth to Water (ft bmp)	50.52
Water-Level Elevation (ft)	—
Water Column in Well (ft)	20
Casing Diameter/Type	4 (0.65)
Gallons in Well	13
Gallons Pumped/Bailed Prior to Sampling	39
Sample Pump Intake Setting (ft bmp)	Q=2 T=19.5 IV=7
Purge Time	begin 4:35 pm end 4:55 pm
Pumping Rate (gpm)	2
Evacuation Method	Rediflow pump

Field Parameters

Field Parameters	I 4:35	W 4:42	2W 4:49	3W 4:55
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	6.66	6.11	5.8	5.84
Conductivity (~~mS/cm~~) µS	323	130.9	123.6	119.6
(µmhos/cm)	—	—	—	—
Turbidity (NTU)	12.4	9.21	7.74	7.55
Temperature (°C)	23.0	22.8	22.9	22.8
Dissolved Oxygen (mg/L)				
Salinity (%)				

Sampling Method: 3 well Volume

Remarks:

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW JC

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: NGC Sampling — Project No. NY001348.0405.2 — Page 1 of 1

Site Location: Bethpage, NY — Date: 9/7/05

Site/Well No.: GM-78S — Replicate No.: N/A — Code No.: —

Weather: Clear, 75°F — Sampling Time: Begin 2:25 pm — End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	70 ft
Depth to Water (ft bmp)	43.75
Water-Level Elevation (ft)	~~25.25~~
Water Column in Well (ft)	~~26.25~~ 26.25
Casing Diameter/Type	4 (.65)
Gallons in Well	~~17.06~~ 17.06
Gallons Pumped/Bailed Prior to Sampling	x3 = ~~51~~ 51
Sample Pump Intake Setting (ft bmp)	48
Purge Time	begin 2:00 end 2:25 pm
Pumping Rate (gpm)	2
Evacuation Method	Rediflow Pump

Field Parameters

	1 2:00	1V 2:08	2V 2:17	3V 2:25
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	6.25	5.70	5.70	5.54
Conductivity ~~(mS/cm)~~ µS	543	*	*	
(µmhos/cm)	—	—	—	—
Turbidity (NTU)	11.4	26.7	10.02	7.68
Temperature (°C)	18.4	17.1	17.4	17.0
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)				
Sampling Method	3 well volume			

Remarks: * Conductivity meter not working giving measurement of 0's

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: QP / JC

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: NY001348.0405.02 Task: 0002 Well ID: GM-78I
Date: 9-7-05 Sampled By: GW JC
Sampling Time: 1:20 Recorded By: JC
Weather: Clear, 75°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): 44.08 Purge time Start: 12:00 Finish: 1:15

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORF (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:00	—	300	—	18.4	5.47	140.7	260	5.39	10.64	44.02	—
12:05	—	300	—	21.7	5.63	141.4	260	4.56	9.74	—	—
12:10	—	300	—	21.4	5.67	142.2	258	4.28	9.08	—	—
12:15	—	300	—	21.1	5.67	141.9	249	4.16	8.49	44.01	—
12:20	—	300	—	21.2	5.70	142.0	250	4.19	7.00	—	—
12:25	—	300	—	21.2	5.70	141.3	249	4.17	7.55	—	—
12:30	—	300	—	22.2	5.72	141.5	273	3.97	7.50	44.02	—
12:35	—	300	—	22.4	5.71	141.6	266	3.81	7.05	—	—
12:40	—	300	—	23.0	5.71	141.3	273	3.67	6.87	[illegible]	—
12:45	—	300	—	22.9	5.71	141.2	270	3.71	6.53	44.03	—
12:50	—	300		23.2	5.72	141.2	268	3.59	7.81	—	—
12:55	—	300	—	22.9	5.80	141.3	240	4.23	7.08	44.02	—
1:00	—	300	—	21.2	5.78	143.1	267	3.94	7.94	—	—
1:05	—	300	—	22.0	5.78	143.7	269	3.76	6.77	44.03	—
1:10	—	300	—	22.4	5.77	143.3	271	3.61	6.12	—	—
1:15	—	300	—	22.7	5.77	143.3	275	3.51	7.84	—	—

Sample Condition Color: Clear Odor: none Appearance: Clear

Sample Collection
Parameter: See COC Container: No. Preservative:

PID Reading

Comments

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

INSTRUMENT CALIBRATION FORM

[X] Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	[ ] Turbidity Meter Model 2020 Lamotte Serial	[ ] D.O. Meter Model Serial	[ ] ORP Meter Model Serial
[ ] Multiprobe Model YSI 600 XL Serial	[X] Turbidity Meter Model 2020 Lamotte Serial	[ ] D.O. Meter Model Serial	[ ] ORP Meter Model Serial
[ ] PID Model Photovac 2020 Serial	[ ] PID Model Photovac 2020 Serial	[ ] pH Cond Temp Model Oakton Serial	[ ] Rental Model Serial

Project # N400134804O5.0002

Date 9-7-05

Time 10:30

Personnel GW JC

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero		
Span		

Parameter D.O.	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00		4.03
7.00		4.03
10.00		

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)	1/month	
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU)	NO	
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 9/8/05

Site/Well No.: 5M-18S | Replicate No.: N/A | Code No.: —

Weather: clear 85° | Sampling Time: Begin 4:47 pm, End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67.0
Depth to Water (ft bmp)	44.0
Water-Level Elevation (ft)	23.0
Water Column in Well (ft)	23.0 X .16 = 3.7
Casing Diameter/Type	2" (0.16)
Gallons in Well	3.7
Gallons Pumped/Bailed Prior to Sampling	11 gallons
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin ____ end 4:46 pm
Pumping Rate (gpm)	1
Evacuation Method	Redi flow pump

Field Parameters

	I	1V	2V	3V
Color	grey	grey	clear	—
Odor	none	none	none	—
Appearance	turbid.	slightly turbid	clear	clear
pH (s.u.)	6.09	6.26	6.23	6.02
Conductivity (mS/cm) µS	238	199.3	197.0	194.8
(µmhos/cm)	—	—	—	—
Turbidity (NTU)	SS	25.9	21.2	18.9
Temperature (°C)	21.2	18.2	17.7	17.7
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	—	—	—	—
Sampling Method	3 well volume			

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW JC

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: 6MW-33D-2
Date: 9-8-05 Sampled By: GWJC
Sampling Time: 3:35 Recorded By: JC
Weather: CLEAR 85° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Lowflow / Dedicated Bladder
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): 53.42 Purge time Start: Finish:

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
1:15	–	450	–	21.7	6.03	90.5	351	6.57	–	53.42	–
1:20	–	450	–	22.9	6.15	90.6	347	5.93	–	–	–
1:25	–	450	–	23.1	6.18	90.6	345	5.98	–	–	–
1:30	–	450	–	23.2	6.21	90.6	340	5.48	–	53.33	–
1:35	–	450	–	23.1	6.36	91.8	336	5.56	–	–	–
1:40	–	450	–	23.0	6.47	92.6	301	5.49	–	–	–
1:45	–	450	–	23.1	6.50	94.0	331	5.65	–	53.37	–
1:50	–	450	–	23.2	6.51	94.8	331	5.71	–	–	–
1:55	–	450	–	23.3	6.59	95.3	330	5.76	–	–	–
2:00	–	450	–	23.0	6.60	96.5	327	5.74	–	53.30	–
2:05	–	450	–	23.0	6.59	95.4	335	6.09	–	–	–
2:10	–	450	–	23.2	6.34	92.4	349	6.08	–	–	–
2:15	–	450	–	23.3	6.15	99.7	356	6.29	8.13	53.30	–
2:20	–	450	–	23.3	5.66	88.1	370	6.38	–	–	–
3:15	–	450	–	24.7	5.45	90.4	335	5.79	–	53.30	–
3:20	–	450	–	26.7	5.13	86.6	379	6.31	–	–	–
3:25	–	450	–	24.7	5.08	86.4	382	6.53	–	–	–
3:30	–	450	–	23.7	5.02	86.7	387	6.30	–	53.30	–
3:35	–	450		23.3	5.02	86.3	377	6.32	[illegible]		8.26 (turbidity)

Sample Condition Color: Odor: Appearance:

Sample Collection
Parameter: See COC Container: No. Preservative:

PID Reading

Comments * Generator ~~stopped~~ stopped working needed to get replacement ~~generator~~ compressor BP (compressor) before restarting sampling.

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

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop-Grumman Project No.: NY001348.0705.00002 Page: 1 of 1

Site Location: BETHPAGE Date: 9-8-05

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

Weather: CLEAR 85° Sampling Time: Begin 12:46 pm End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67.0
Depth to Water (ft bmp)	41.26
Water-Level Elevation (ft)	—
Water Column in Well (ft)	25.74
Casing Diameter/Type	2 (.16)
Gallons in Well	4.11 x3
Gallons Pumped/Bailed Prior to Sampling	12
Sample Pump Intake Setting (ft bmp)	Q=1 T=12 IV=4
Purge Time	begin 12:13 pm end 12:46
Pumping Rate (gpm)	1
Evacuation Method	Rediflow Pump

Field Parameters

	1	2	3	4
	12:30	12:34	12:38	12:42	12:48
Color	black	grey	clear	clear	clear
Odor	mod	mod	mod	mod	mod
Appearance	turbid	turbid	clear	clear	clear
pH (s.u.)	6.28	6.04	5.95	5.86	5.83
Conductivity (~~mS/cm~~) uS	242	191.2	133.8	126.3	125.1
(~~umhos/cm~~)	—	—	—	—	—
Turbidity (NTU)	>200	36.6	14.9	15.1	13.4
Temperature (°C)	17.4	16.1	15.3	15.2	15.3
Dissolved Oxygen (mg/L)	—	—	—	—	—
Salinity (%)	—	—	—	—	—

Sampling Method: 3 well Volume

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW JC

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

Site Activities Tailgate Safety Briefing Sign-in Log

Project Number:	NY001348.0405.0000	Project Name:	NGC Sampling
Date:	09/08/05 4-9-05	Time:	9:10:00
Briefing Conducted by: Gary Williams	Signature: [signature]	Company: Arcadis	

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

[X] General PPE Usage	[ ] Confined Space	[ ] Excavation Safety
[X] Hearing Conservation	[X] Slips, Trips, Falls	[ ] Confined Space
[X] Respiratory Protection	[X] Heat Stress	[X] Traffic Safety
[X] Personal Hygiene	[ ] Thermal Stresses	[ ] Changes to the HASP
[X] Exposure Guidelines	[ ] Site Control	[ ] Initial Review of Hazard Evaluation
[X] Decon Procedures	[X] Work Zones	[ ] Other (specify):
[X] Emergency Procedures (include route to hospital)	[ ] Lockout/Tagout	[ ] Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name
John Corral	John Corral	Arcadis
GARY HUBERT	[signature]	ARCADIS

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405.00002 Task: 00002 Well ID: GM-75D2
Date: 09/09/2005 Sampled By: John Corral
Sampling Time: 3:00 Recorded By: John Corral
Weather: Mostly Sunny, 75°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): Purge time Start: 2:00 Finish: 3:80

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
2:00	—	400	—	23.9	9.77	95.8	-121	2.73	—	38.72	—
2:05	—	430	—	24.6	9.64	95.7	-129	2.44	—	—	—
2:10	—	450	—	25.3	9.63	94.8	-1	3.43	—	38.68	—
2:15	—	450	—	25.3	7.58	95.0	51	3.76	—	—	—
2:20	—	450	—	25.2	6.61	95.8	143	4.31	—	—	—
2:25	—	450	—	25.2	6.11	98.3	186	4.50	—	38.60	—
2:30	—	450	—	25.2	6.10	99.7	203	4.53	—	—	—
2:35	—	450	—	25.1	5.70	102.5	215	4.66	—	—	—
2:40	—	450	—	25.1	5.68	105.7	226	4.57	—	38.64	—
2:45	—	450	—	25.1	5.39	107.7	235	4.57	—	—	—
2:50	—	450	—	25.3	5.38	110.6	244	4.51	—	—	—
2:55	—	460	—	25.4	5.23	111.8	245	4.46	—	38.65	—
3:00	—	450	✓	25.3	~~5.17~~	113.0	~~-249~~ -249	4.66	14.3	—	—
					5.17						

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405.00002 Task: 00002 Well ID: N-10624
Date: 09/09/05 Sampled By:
Sampling Time: 1135 Recorded By:
Weather: 75° 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): 36.36 Purge time Start: 1220 Finish: 1135

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:20	—	—	—	20.4	9.87	200	-143	2.23	—	36.30	—
12:25	—	—	—	20.8	9.52	182.6	-118	4.48	—	36.70	—
12:30	—	—	—	18.8	9.99	110.4	-250	0.81	—	—	—
12:35	—	—	—	18.1	10.05	103.2	-235	1.16	—	—	—
12:40	—	—	—	17.9	10.05	101.4	-225	1.18	—	64.00	—
12:45	—	—	—	17.8	9.99	99.0	-234	1.12	—	—	—
12:50	—	—	—	18.1	9.98	97.0	-236	1.04	—	—	—
12:55	—	—	—	18.4	9.96	96.9	-235	1.04	—	70.06	—
1:00	—	—	—	18.3	9.95	96.3	-231	1.00	—	70.85	—
1:05	—	—	—	20.0	9.93	95.8	-230	1.02	—	70.70	—
1:10	—	—	—	20.8	9.87	95.0	-216	1.27	—	70.67	—
1:15	—	—	—	22.0	9.83	95.4	-205	1.52	—	70.82	—
1:20	—	—	—	22.8	9.82	95.3	-202	1.58	—	71.15	—
1:25	—	—	—	24.0	9.78	95.0	-199	1.58	—	71.0	—
1:30	—	—	—	24.3	9.77	94.5	-199	1.58	—	70.86	—
1:35	—	—	—	24.6	9.75	94.8	-197	1.56	43.6	71.02	—

Sample Condition Color: dark grey Odor: none Appearance: some fine dark/black silt in sample
Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405.00002 Task: 00002 Well ID: N-10627
Date: 09/09/05 Sampled By: JHC/GW
Sampling Time: 12:05 Recorded By: JHC
Weather: Mostly Cloudy, 75°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): 37~~48~~.93 Purge time Start: 11:05 Finish: 12:05

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
11:05	—	—	—	21.3	7.10	~~10~~170.2	150	2.91	—	~~48~~.93	—
11:10	—	—	—	21.0	7.57	480	134	2.51	—	—	—
11:15	—	—	—	20.6	8.46	392	~~8~~117	2.24	—	—	—
11:20	—	—	—	20.6	9.61	269	-111	—	—	36.24	—
11:25	—	—	—	20.5	9.55	240	-166	1.71	—	—	—
11:30	—	—	—	20.6	9.92	236	-193	1.70	—	—	—
11:35	—	—	—	20.4	9.94	223	-199	1.75	—	36.28	—
11:40	—	—	—	20.0	10.03	222	-203	1.72	—	—	—
11:45	—	—	—	20.0	10.04	222	-203	1.73	—	—	—
11:50	—	—	—	20.1	10.02	223	-204	1.66	—	36.80	—
11:55	—	—	—	20.4	9.98	220	-200	1.57	—	—	—
12:00	—	—	—	20.4	9.95	216	-195	1.61	—	—	—
12:05	—	—	—	20.3	9.91	212	-191	1.71	—	36.62	—
									56		

Sample Condition Color: / Odor: — Appearance: /

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

Water Sampling Log

Project: Northrop Grumman | Project No.: NY001348.0466.0002 | Page: 1 of 1

Site Location: Bethpage, New York | Date: 9/13/05

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

Weather: clear, 90° | Sampling Time: Begin 15:55 End 16:00

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	419
Depth to Water (ft bmp)	344
Water-Level Elevation (ft)	—
Water Column in Well (ft)	75
Casing Diameter/Type	4" (0.65)
Gallons in Well	48.75
Gallons Pumped/Bailed Prior to Sampling	x 3 = 146.25
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 15:00 end 15:50
Pumping Rate (gpm)	—
Evacuation Method	Dedicated submersible pump/ packer

Field Parameters

	I	1 V	2 V	3 V
Color	Colorless	colorless	colorless	Colorless
Odor	odor	odor	odor	odor
Appearance	clear	clear	clear	clear
pH (s.u.)	4.79	4.73	4.67	4.60
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	375	272	187.8	179.2
Turbidity (NTU)	—	—	—	—
Temperature (°C)	17°	13.6	13.2	12.8
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity~~ (%)	DTW 34.98	34.98	34.99	34.99

Sampling Method: 3 well Volume

Remarks: DTW = 35.27' bls
344 − 35.27 × .43 + 50 = 185 PSI
* PID not working, no turbidity meter.

Constituents Sampled	Container Description	Number	Preservative
See CoC			

Sampling Personnel: SC/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

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.002 | Page 1 of 1

Site Location: Bethpage, NY | Date: 9/13/05

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

Weather: Clear, 90° | Sampling Time: Begin 17:45 | End 17:50

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	335
Depth to Water (ft bmp)	294
Water-Level Elevation (ft)	—
Water Column in Well (ft)	41
Casing Diameter/Type	4" (0.65)
Gallons in Well	26.65 × 3
Gallons Pumped/Bailed Prior to Sampling	80.00
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 17:20 end 17:40
Pumping Rate (gpm)	—
Evacuation Method	Dedicated pump / packer

Field Parameters

Field Parameters	T	1V	2V	3V
Color	colorless	colorless	colorless	Colorless
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	4.75	5.01	4.37	4.31
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	66.8	74.2	65.3	65.7
Turbidity (NTU)	—	—	—	—
Temperature (°C)	15.1	15.8	12.9	12.9
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	DTW 34.98	35.38	35.68	35.68

Sampling Method: 3 well Volume

Remarks: DTW = 32.48 ~ 6/5

294 − 32.48 × 0.43 = 50 = 165 psi

* PID not working = 0.0

turbidity meter.

(pH checked with 2nd meter)

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

* Designated Pressure Gauge not working properly. (165 psi + 50 psi). used.

Water Sampling Log

Project: Northrop Grumman | Project No. NY001348.0405.0000 | Page 1 of 1

Site Location: Bethpage, NY | Date: 9/13/05

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

Weather: Clear 95° | Sampling Time: Begin — End 11:50 AM

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	241
Depth to ~~Water~~ pacv (ft bmp)	169
Water-Level Elevation (ft)	—
Water Column in Well (ft)	72
Casing Diameter/Type	4" (0.65)
Gallons in Well	46.8 ×3
Gallons Pumped/Bailed Prior to Sampling	140
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 11:24 AM end —
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Submersible pump/parmer meter

Field Parameters

	I	V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	4.44	4.45	4.47	4.49
Conductivity ~~(mS/cm)~~ (umhos/cm)	149.8	209	209	214
Turbidity (NTU)	—	—	—	—
Temperature (°C)	15.2	14.7	14.1	13.6
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity~~ (%) DTW	32.38	32.42	32.38	32.38

Sampling Method: 3 well Volume

Remarks: DTW=32.52' bTOC
169 − 32.52 × .43 + 50 = 110 PSI
PID not working & NO turbidity

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: SC/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

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☐ PID Model Photovac 2020 Serial	☒ pH Cond Temp Model Oakton Serial 121686	☐ Rental Model Serial

Project # NY001348.0405.00002

Date 9/13/05

Time ✓

Personnel JAC/PP

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero		
Span		

Not working

Parameter D.O.		Calibration Successful
100% Saturated Air	N/A	
Barometer Adjustment		
Elevation Adjustment		

ph (sI Units)		
4.00	4.00	✓
7.00	7.00	✓
10.00		

* ORP (Mv)	N/A	
Hydroquinone (240) (Black)		
Zobel Solution (237) (yellow)		
Temperature Based Chart Calibration		
* Adjusted		

Conductivity (umhos)	1/Month	
84 umhos		
1413 uhmos		
Other		

Turbidity (NTU)	N/A	
1.0 NTU		
10 NTU		
40 NTU		
Other		

* No adjustment on some meters just a probe check, others are adjustable

ARCADIS

Site Activities Tailgate Safety Briefing Sign-in Log

Project Number:	NY001348.0405.T2	Project Name:	N - Grumman
Date:	9/13/05 - 9/16/05	Time:	—

Briefing Conducted by:	Signature:	Company:
Pat Prezgorski	Pat Prezgorski	Arcadis

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

- ☑ General PPE Usage
- ☑ Hearing Conservation
- ☐ Respiratory Protection
- ☑ Personal Hygiene
- ☑ Exposure Guidelines
- ☑ Decon Procedures
- ☑ Emergency Procedures (include route to hospital)
- ☐ Confined Space
- ☑ Slips, Trips, Falls
- ☑ Heat Stress
- ☐ Thermal Stresses
- ☑ Site Control
- ☑ Work Zones
- ☐ Lockout/Tagout
- ☐ Excavation Safety
- ☐ Confined Space
- ☑ Traffic Safety
- ☐ Changes to the HASP
- ☑ Initial Review of Hazard Evaluation
- ☑ Other (specify): N_2 Gas
- ☐ Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name
Pat Prezgorski	Pat Prezgorski	Arcadis
Jennifer Chesla	Jennifer Chesla	Arcadis

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 9/14/05

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

Weather: Cloudy, 80° | Sampling Time: Begin 13:30 End 15:35

Evacuation Data	
Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	495
Depth to Water (ft bmp)	~~Page~~ 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	148.20 (×3)
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 14:40 end 15:25
Pumping Rate (gpm)	—
Evacuation Method	Dedicated submersible pump/packer

Field Parameters	+	1V	2V	3V
Color	colorless	Yellow	Yellow	colorless
Odor	none	Slight	Slight	none
Appearance	clear	Clear	Clear	Clear
pH (s.u.)	4.2	4.49	4.41	4.48
Conductivity (mS/cm)	—	—	—	—
(umhos/cm)	~~78.8~~	144.3	102.0	94.0
Turbidity (NTU)	—	—	—	—
Temperature (°C)	16.2	14.9	14.6	15.8
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	DTW 27.1	27.1	27.1	25.2
Sampling Method		3 well volume		

Remarks: DTW = 24.24' b/s

PSD = 4.0 @ well head | 0.0 = breathing zone.

No turbidity meter

419 − 24.24 × 0.43 + 50 = 225 PSI

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: SAC/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" = 0.25	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

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 9/14/05

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

Weather: Cloudy, 80° | Sampling Time: Begin ____ End ____

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	400
Depth to ~~Water~~ Product (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	175.5 x 3
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 16:40 end ____
Pumping Rate (gpm)	____
Evacuation Method	Dedicated submersible pump/purge

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	Colorless	Colorless
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	4.38	4.55	4.55	4.53
Conductivity (~~mS/cm~~)	—	—	—	—
(µmhos/cm)	120.6	155.9	139.8	131.1
Turbidity (NTU)	—	—	—	—
Temperature (°C)	18.3	14.9	14.0	14.1
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity~~ (%) DTW	24.55	24.25	24.27	23.59
Sampling Method	3 well volume			

Remarks: DTW = 24.10

310 − 24.10 × 0.43 + 50 = 175 PSI

No turbidity meter. PID = 0.0 at wellhead.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC/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

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☑ PID Model Photovac 2020 Serial ED HF 358	☑ pH Cond Temp Model Oakton Serial 121686	☐ Rental Model Serial

Project # NY001348.0405.00002

Date 9/14/05

Time

Personnel JAC/PP

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	✓
Span	100.0	✓

Parameter D.O.		Calibration Successful
100% Saturated Air	N/A	
Barometer Adjustment		
Elevation Adjustment		

ph (si Units)		
4.00	4.00	✓
7.00	7.00	✓
10.00		

* ORP (Mv)	N/A	
Hydroquinone (240) (Black)		
Zobel Solution (237) (yellow)		
Temperature Based Chart Calibration		
* Adjusted		

Conductivity (umhos)	1/Month	
84 umhos		
1413 uhmos		
Other		

Turbidity (NTU)	N/A	
1.0 NTU		
10 NTU		
40 NTU		
Other		

* No adjustment on some meters just a probe check, others are adjustable

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY — Date: 9/15/05

Site/Well No.: BPOW 4-1 — Replicate No.: N/A — Code No.: —

Weather: scattered Showers, 80° — Sampling Time: Begin 17:30 — End 17:35

Evacuation Data

	Standpipe	Screen
Measuring Point	TOC	
MP Elevation (ft)	—	
Land Surface Elevation (ft)		
Sounded Well Depth (ft bmp)	652	692
Depth to Packer Water (ft bmp)	503	652
Water-Level Elevation (ft)		
Water Column in Well (ft)	149	40
Casing Diameter/Type	4" Ce. (.65)	2" (0.16)
Gallons in Well	96.85 x 3	6.4 x 3
Gallons Pumped/Bailed Prior to Sampling	290	19.2
Sample Pump Intake Setting (ft bmp)	309 (290.19.2)	
Purge Time	begin 15:40 end 17:30	
Pumping Rate (gpm)	—	
Evacuation Method	Dedicated submersable pump/packer	

Field Parameters

	I	1V	2V	3V
Color	colorless	Cloudy	colorless	colorless
Odor	none	none	none	none
Appearance	Clear	Cloudy	cloudy	cloudy
pH (s.u.)	5.22	5.42	5.48	5.29
Conductivity ~~(mS/cm)~~ (µmhos/cm)	47.8	94.4	63.6	57.0
Turbidity (NTU)	—	—	—	—
Temperature (°C)	17.2	17.1	16.3	14.8
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ DTW	29.4	29.5	29.5	29.5

Sampling Method: 3 well Volume

Remarks: DTW = 29.8 lbs PSI = 255# * No PID due to rain/high humidity. No turbidity meter.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC / 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. NY001348.0405.0007 | Page 1 of 1

Site Location: Bethpage, NY | Date: 9/15/05

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

Weather: Scattered Showers, 80° | Sampling Time: Begin 15:20 End 15:25

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 ×3
Gallons Pumped/Bailed Prior to Sampling	509
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 12:10 end 15:15
Pumping Rate (gpm)	—
Evacuation Method	Dedicated Packer/Bladder

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	tan	colorless
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	3.81	3.99	4.37	4.24
Conductivity ~~(mS/cm)~~ (µmhos/cm)	89.6	149.5	95.8	81.4
Turbidity (NTU)	—	—	—	—
Temperature (°C)	16.6	15.6	16.1	14.4
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ DTW	29.5	29.3	29.15	29.11

Sampling Method: 3 well Volume

Remarks: DTW = 30.1

503 − 30.1 × 0.43 + 50 = 255 PSI

* No PID due to rain/high humidity. No turbidity meter.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC/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

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☐ PID Model Photovac 2020 Serial	☑ pH Cond Temp Model Oakton Serial	☐ Rental Model Serial

Project # NY001348.0405.00002

Date 9/15/05

Time

Personnel QP

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero		
Span		
	Rain	

Parameter D.O. N/A	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00	✓	yes
7.00	✓	yes
10.00		

* ORP (Mv) N/A	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

* No adjustment on some meters just a probe check, others are adjustable

Turbidity (NTU) N/A		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: Northrop Grumman
Project No.: NY001348.0405.00002
Page 1 of 1
Site Location: Bethpage, NY
Date: 9/16/05
Site/Well No.: BPOW 3-1
Replicate No.: REP091605
Code No.: —
Weather: Partly Cloudy, 84°F
Sampling Time: Begin 13:45 End 13:50

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 ×3
Gallons Pumped/Bailed Prior to Sampling	198.9
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 13:00 end 13:40
Pumping Rate (gpm)	—
Evacuation Method	Dedicated submersible pump/packer

Field Parameters	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	moderate	slight	slight	slight
Appearance	clear	clear	clear	clear
pH (s.u.)	4.07	3.77	3.81	3.87
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	157.1	130.2	128.2	129.7
Turbidity (NTU)	—	—	—	—
Temperature (°C)	20.5	16.1	15.9	15.0
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ DTW	29.15	29.20	29.21	29.20

Sampling Method: 3 Well Volume

Remarks: DTW = 29.25 b/s
414 − 29.25 × 0.43 + 50 = 220 PSI
No turbidity meter. PID = 0.6 ppm at wellhead and 0.0 ppm for breathing zone.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC/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

* Some sand/gravel on the surface of the annulus has eroded away. *

ARCADIS GERAGHTY & MILLER

Water Sampling Log

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

Site Location: Bethpage, NY | Date: 9/16/05

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

Weather: Partly Cloudy, 80°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~~ pacer (ft bmp)	503
Water-Level Elevation (ft)	/
Water Column in Well (ft)	144
Casing Diameter/Type	4" (0.65)
Gallons in Well	93.6 ×3
Gallons Pumped/Bailed Prior to Sampling	280
Sample Pump Intake Setting (ft bmp)	/
Purge Time	begin 15:15 end _____
Pumping Rate (gpm)	/
Evacuation Method	Dedicated submersible pump/pacer

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	colorless	~~color~~ colorless
Odor	Strong	slight	none	None
Appearance	Clear	clear	clear	clear
pH (s.u.)	4.72	4.62	4.83	4.87
Conductivity ~~(mS/cm)~~ (µmhos/cm)	63.5	124.5	80.4	67.2
~~Turbidity (NTU)~~	—	—	—	—
Temperature (°C)	15.7	15.1	15.8	14.4
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~ Depth to water	30.15	29.61	29.50	28.27

Sampling Method: 3 well Volume

Remarks: DTW = 30.25' bTS

503 − 30.25 × 0.43 + 50 = 255 PSI

No turbidity meter. PID = 0.0 ppm at wellhead.

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: JAC / 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

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ Multiprobe Model YSI 600 XL Serial	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial	☐ PID Model Photovac 2020 Serial ED HF358	☑ pH Cond Temp Model Oakton Serial 121686	☐ Rental Model Serial

Project # NY00134.0405.T2

Date 9/16/05

Time

Personnel AM

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	✓	Yes
Span	✓	Yes

Parameter D.O. N/A	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00	✓	Yes
7.00	✓	Yes
10.00		

* ORP (Mv) N/A	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos) 1/Month		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU) N/A		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348-0405 Task: 00002 Well ID: HN-24I
Date: 9/20/05 Sampled By: GW/DZ
Sampling Time: 2135 Recorded By: DZ
Weather: overcast 75-80° Coded Replicate No.: Replicate 9/20/05 & MS/MSD

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

Purging Information
Casing Material: PVC Purge Method: Low Flow / Rediflow Pump
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): 58.60 Purge time Start: 1:50 pm Finish: 2:35

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
1:50	—	—	—	21.3	5.57	369	308	6.28	—	58.58	—
1:55	—	—	—	21.1	5.51	391	317	6.18	—	—	—
2:00	—	—	—	22.1	5.49	406	323	5.96	—	58.48	—
2:05	—	—	—	23.3	5.49	413	328	5.62	—	—	—
2:10	—	—	—	23.7	5.43	418	330	5.40	—	58.48	—
2:15	—	—	—	24.0	5.41	418	330	5.32	—	—	—
2:20	—	—	—	23.9	5.41	420	329	5.32	—	58.46	—
2:25	—	—	—	23.5	5.42	420	332	5.45	—	—	—
2:30	—	—	—	23.5	5.42	418	332	5.38	—	—	—
2:35	—	—	—	23.5	5.42	416	332	5.34	—	58.46	—
									20.20		

Sample Condition Color: Odor: Appearance:

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: N4001348.0405 Task: 00002 Well ID: HW-29I
Date: 9-20-05 Sampled By: GW DZ
Sampling Time: 12:05pm Recorded By: DZ
Weather: Coded Replicate No.: ~~[illegible]~~ DZ N/A

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

Purging Information
Casing Material: PVC Purge Method: Low Flow / Rediflow Pump
Casing Diameter: 4" Screen Interval (ft bmp): Top 120 Bottom 130
Sounded Depth (ft bmp): ~~[illegible]~~ 130 Pump Intake Depth (ft bmp): 125
Depth to Water (ft bmp): 50.80 Purge time Start: 11:20 AM Finish: 12:05pm

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
11:20				18.6	11.59	289	30	5.54		50.80	
11:26	6:00			19.0	11.57	237	25	5.75		" "	
11:31	5:00			20.0	11.53	390	21	5.82		50.45	
11:32	6:00			20.4	11.58	337	21	5.61		" "	
11:38	-	-	-	-	-	-	-	-	-	-	-
11:43				20.6	11.60	365	26	5.51		50.23	
11:50				20.7	11.60	367	28	5.33			
11:55				20.7	11.60	407	30	5.67			
12:00				19.7	11.64	421	31	5.65		50.40	
12:05				20.1	11.63	400	32	5.61			
									25.6		

Sample Condition Color: COLORLESS Odor: NONE Appearance: CLEAR

Sample Collection
Parameter: See COC Container: No. Preservative:

PID Reading 0.0

Comments

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

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: MW-29D
Date: 9-20-05 Sampled By: GW 02
Sampling Time: 1120 pm Recorded By: 02
Weather: OVERCAST 75° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Low flow / Non-dedicated Bladder
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): 49.60 Purge time Start: 12:20 pm Finish: 1:20 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:20	—	—	—	22.7	11.07	273	58	6.36	—	49.60	—
12:25	—	—	—	21.6	9.66	153.5	134	6.32	—	—	—
12:30	—	—	—	21.4	8.20	138.2	215	6.14	—	49.55	—
12:35	—	—	—	21.5	7.88	139.2	217	6.19	—	—	—
12:40	—	—	—	21.6	7.47	135.5	240	6.21	—	49.55	—
12:45	—	—	—	21.2	7.01	131.4	248	6.51	—	—	—
12:50	—	—	—	21.2	6.83	131.0	253	6.56	—	49.50	—
12:55	—	—	—	21.2	6.68	129.4	258	6.64	—	—	—
1:00	—	—	—	21.4	6.49	128.6	258	6.57	—	49.47	—
1:05	—	—	—	21.4	6.39	128.9	256	6.40	—	—	—
1:10	—	—	—	21.5	6.34	127.0	254	6.35	—	49.49	—
1:15	—	—	—	21.7	6.28	128.4	253	6.35	—	—	—
1:20	—	—	—	21.9	6.27	127.6	252	6.25	—	49.48	—

Sample Condition Color: / Odor: / Appearance: /

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading 0.0

Comments

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP (GRUMMAN) | Project No. NY000348-0405.00002 | Page 1 of 1

Site Location: BETHPAGE NY | Date: 9-20-05

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

Weather: OVERCAST 75° | Sampling Time: Begin 4:06 pm | End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	67.00
Depth to Water (ft bmp)	42.76
Water-Level Elevation (ft)	
Water Column in Well (ft)	24.24
Casing Diameter/Type	2" (0.16)
Gallons in Well	3.8
Gallons Pumped/Bailed Prior to Sampling	12 x3
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 3:54 end 4:06
Pumping Rate (gpm)	Q=1 T=12 V=4
Evacuation Method	Redi Flow Pump

Field Parameters

Field Parameters	1	2	2s	3
Color	BROWN	CLEAR	—	COLORLESS
Odor	—	—	—	NONE
Appearance	—	—	—	CLOUDY
pH (s.u.)	9.32	7.32	6.59	6.14
Conductivity ~~(mS/cm)~~ (µmhos/cm)	1056	1061	1102	1091
Turbidity (NTU)	—	—	—	37.4
Temperature (°C)	18.2	16.7	15.7	15.5
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity~~ TDS (%)	3:54	3:58	4:02	4:06

Sampling Method: 3 well volume

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW-07

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

Site Activities Tailgate Safety Briefing Sign-in Log

Project Number:	NY000134804S.0002	**Project Name:**	NORTHROP GRUMMAN
Date:	9-20-05	**Time:**	

Briefing Conducted by:	Signature:	Company:
GARY HOLLOWAY		ARCADIS

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

☒ General PPE Usage	☐ Confined Space	☐ Excavation Safety
☐ Hearing Conservation	☒ Slips, Trips, Falls	☐ Confined Space
☐ Respiratory Protection	☒ Heat Stress	☐ Traffic Safety
☐ Personal Hygiene	☐ Thermal Stresses	☐ Changes to the HASP
☒ Exposure Guidelines	☐ Site Control	☐ Initial Review of Hazard Evaluation
☐ Decon Procedures	☐ Work Zones	☐ Other (specify):
☒ Emergency Procedures (include route to hospital)	☐ Lockout/Tagout	☐ Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name
GARY HOLLOWAY		ARCADIS
Daniel Zack	Daniel Zack	Arcadis

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP-Grumman | Project No. NY001348.0405.0007 | Page 1 of 1

Site Location: BETHPAGE NY | Date: 9-21-05

Site/Well No.: HW-40S | Replicate No.: N/A | Code No.: —

Weather: CLEAR 80° | Sampling Time: Begin 1:18 pm | End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	59
Depth to Water (ft bmp)	51.55
Water-Level Elevation (ft)	—
Water Column in Well (ft)	7.45
Casing Diameter/Type	4" (0.65)
Gallons in Well	4.8 x3
Gallons Pumped/Bailed Prior to Sampling	15
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1:03 end 1:18
Pumping Rate (gpm)	Q=1T=15/25
Evacuation Method	Redi Flow Pump

Field Parameters

	I	15	25	35
Color	—	—	—	BLUE/GRS
Odor	—	—	—	NONE
Appearance	—	—	—	CLEAR
pH (s.u.)	5.24	6.18	5.11	5.11
Conductivity (mS/cm)	—	—	—	—
(µmhos/cm)	98.6	102.6	104.3	105.9
Turbidity (NTU)	—	—	—	—
Temperature (°C)	20.1	17.9	18.1	18.5
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	1:03	1:08	1:13	1:18

Sampling Method: 3 WELL VOLUMES

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW

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: HN-42I
Date: 9/21/05 Sampled By: GW/DZ
Sampling Time: ~~2:15~~ 3:00 pm Recorded By: DZ
Weather: Sunny 80+° 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): 52.91 Purge time Start: 2:15pm Finish: 3:00 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
2:15	—	—	—	22.3	11.20	224	78	6.93	—	52.91	—
2:20	—	—	—	21.0	11.34	205	69	6.65	—	—	—
2:25	—	—	—	21.0	11.28	171.3	66	6.67	—	—	—
2:30	—	—	—	21.7	11.26	172.9	69	6.42	—	—	—
2:35	—	—	—	22.7	11.13	169.5	65	6.09	—	52.89	—
2:40	—	—	—	23.4	10.99	172.3	67	5.66	—	—	—
2:45	—	—	—	24.1	10.93	165.5	72	5.40	—	—	—
2:50	—	—	—	24.0	10.85	165.5	74	5.45	—	—	—
2:55	—	—	—	24.2	10.81	169.7	76	5.74	—	—	—
3:00	—	—	—	24.5	10.77	165.6	79	5.21	—	—	—
									32.4	—	—

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

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

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

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: HN-40I
Date: 9/21/05 Sampled By: LW/DB
Sampling Time: 12:45 pm Recorded By: DZ
Weather: Clear 75-80° 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): 51.55 Purge time Start: 12:00 Finish: 12:45 pm

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:00	—	—	—	19.6	5.23	196.9	326	7.54	—	51.55	—
12:05	—	—	—	20.4	5.21	222	328	7.58	—	—	—
12:10	—	—	—	21.4	5.14	224	333	7.10	—	—	—
12:15	—	—	—	22.1	5.10	227	328	7.15	—	—	—
12:20	—	—	—	22.0	5.15	229	324	6.87	—	—	—
12:25	—	—	—	22.0	5.14	230	323	7.13	—	51.46	—
12:30	—	—	—	22.1	5.14	232	322	7.23	—	—	—
12:35	—	—	—	22.9	5.14	229	320	6.74	—	—	—
12:40	—	—	—	23.5	5.15	229	314	6.43	—	—	—
12:45	—	—	—	24.0	5.15	230	318	6.33	—	—	—

Sample Condition Color: _____ Odor: _____ Appearance: _____

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading _____

Comments _____

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP-GRUMMAN Project No.: NY 80134B.0405.00002 Page: 1 of 1

Site Location: BETHPAGE NY Date: 9-21-05

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

Weather: CLEAR 80° Sampling Time: Begin 3:32 pm End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	60.00
Depth to Water (ft bmp)	53.65
Water-Level Elevation (ft)	~~6.35~~
Water Column in Well (ft)	6.35
Casing Diameter/Type	4" (0.65)
Gallons in Well	4.12 x 3
Gallons Pumped/Bailed Prior to Sampling	~~12~~ 13
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 3:20 end 3:32
Pumping Rate (gpm)	Q=1 T=13 D=4
Evacuation Method	Redi-Flow Pump

Field Parameters

	I	1J	2J	3J
Color	—	—	—	COLORLESS
Odor	—	—	—	NONE
Appearance	—	—	—	CLEAR
pH (s.u.)	6.48	5.76	5.43	5.42
Conductivity ~~(mS/cm)~~ (µmhos/cm)	264	293	292	~~[illegible]~~ 3
Turbidity (NTU)	—	—	—	359
Temperature (°C)	20.3	18.1	17.8	18.1
Dissolved Oxygen (mg/L)	—	—	—	—
~~Salinity (%)~~	3:20	3:24	3:28	3:32

Sampling Method: 3 well Volume

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: G.W. D7

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. 30013480005.0000 Page 1 of 1

Site Location: BETHPAGE NY Date: 9.22.05

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

Weather: — Sampling Time: Begin — End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	51.00
Depth to Water (ft bmp)	44.64
Water-Level Elevation (ft)	~~51.00~~ —
Water Column in Well (ft)	6.36
Casing Diameter/Type	4" (0.65)
Gallons in Well	4.1 ×3
Gallons Pumped/Bailed Prior to Sampling	13
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	Q=1 T=1B 10=4
Evacuation Method	Rediflow pump

Field Parameters

Field Parameters	I	1V	2V	3V
Color	—	—	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	6.80	6.89	5.73	5.64
Conductivity ~~(mS/cm)~~ (µmhos/cm)	588	497	574	516
Turbidity (NTU)	94	—	31.4	20.4
Temperature (°C)	20.1	18.4	18.0	18.3
Dissolved Oxygen (mg/L)	—	—	—	—
~~PPM~~ Salinity (%)	2.9	2:43	2:44	2:48

Sampling Method: 3 well Volume

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
See COC	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Sampling Personnel: GW

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. [illegible] Page 1 of 1

Site Location: BETHPAGE NY Date: 9-22-05

Site/Well No.: MW-[illegible]6f Replicate No.: N/A Code No.: —

Weather: CLEAR 75° Sampling Time: Begin ____ End ____

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	58
Depth to Water (ft bmp)	[illegible]
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin ____ end ____
Pumping Rate (gpm)	Q=
Evacuation Method	Rediflow Pump

Field Parameters

Field Parameters	I	10	20	30
Color				
Odor				
Appearance				
pH (s.u.)	5.78	5.73	5.32	5.37
Conductivity (mS/cm)			203	
(µmhos/cm)	269	282	275	271
Turbidity (NTU)			203	21.2
Temperature (°C)	19.7	20.2	20.3	20.3
Dissolved Oxygen (mg/L)				
Salinity (%)				
Sampling Method		3 well Volume		
Remarks				

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW

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

MW-26

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: NORTHROP GRUMMAN
Project No. [illegible] 1248.0405.00002
Page 1 of 1
Site Location: BETHPAGE NY
Date: 9-22-05
Site/Well No.: 26f
Replicate No.: N/A
Code No.: —
Weather: CLEAR 75°
Sampling Time: Begin 3:40pm End —

Evacuation Data	
Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	59.
Depth to Water (ft bmp)	47.59
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11.41
Casing Diameter/Type	4 (.65)
Gallons in Well	2.3
Gallons Pumped/Bailed Prior to Sampling	21.00
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 3:15 end 3:40pm
Pumping Rate (gpm)	Q=1 T=21 V=7
Evacuation Method	Rediflow Pump

Field Parameters	I	1V	2V	3V
Color	—	—	—	—
Odor	—	—	—	—
Appearance	—	—	—	—
pH (s.u.)	5.62	6.33	6.41	6.42
Conductivity ~~(mS/cm)~~	—	—	—	—
(µmhos/cm)	215	217	183.6	183.4
Turbidity (NTU)	—	—	33.1	24.1
Temperature (°C)	17.8	17.4	18.9	17.8
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	3:15	3:22	3:31	3:40
Sampling Method	3 Well Volume			
Remarks	—			

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: GW

Well Casing Volumes

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

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

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 00002 Well ID: GM-34D
Date: 9/22/05 Sampled By: GW/DE
Sampling Time: 1:10 pm Recorded By: DE
Weather: Clear 80's° 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): 17.83 Purge time Start: 12:10 Finish: 1:10 pm

Field Parameter Measurements Taken During Purging

Time PM	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
12:10	—	—	—	24.8	6.14	97.5	42	2.42	—	17.83	—
12:15	—	—	—	25.1	7.07	134.9	-15	2.00	—	—	—
12:20	—	—	—	23.5	7.99	154.4	-20	1.87	—	17.66	—
12:25	—	—	—	23.1	8.17	158.1	-12	1.63	—	—	—
12:30	—	—	—	23.0	8.65	167.4	-82	2.39	—	17.79	—
12:35	—	—	—	23.0	9.29	148.9	-216	1.25	—	—	—
12:40	—	—	—	23.1	9.23	145.1	-212	1.15	—	17.66	—
12:45	—	—	—	23.2	8.74	159.4	-135	1.51	—	—	—
12:50	—	—	—	23.1	8.20	166.5	-94	1.46	—	17.81	—
12:55	—	—	—	23.2	7.70	1068	-84	1.90	—	—	—
1:00	—	—	—	23.3	7.30	167.5	-80	1.83	—	17.67	—
1:05	—	—	—	23.4	6.94	169.2	-65	2.56	—	—	—
1:10	—	—	—	23.6	6.72	169.7	-54	1.81	36.9	—	—

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

GM-34D2

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 Task: 0002 Well ID: GM-34D2
Date: 9/22/05 Sampled By: GW/DZ
Sampling Time: Recorded By: DZ
Weather: Clear- 80° 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): 20.37 Purge time Start: 11:15 AM Finish: 12:00pm

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
11:15 AM	–	–	–	18.2	8.23	87.9	207	1.53	–	20.37	–
11:20	–	–	–	18.2	8.33	83.3	213	1.91	–	–	–
11:25	–	–	–	18.1	6.84	82.3	-51	2.60	–	20.31	–
11:30	–	–	–	19.8	6.40	109.3	-62	1.70	–	–	–
11:35	–	–	–	21.0	6.34	109.1	-76	1.98	–	20.29	–
11:40	–	–	–	21.2	6.27	105.2	-52	1.68	–	–	–
11:45	–	–	–	21.4	6.17	100.2	-7	1.72	–	20.30	–
11:50	–	–	–	21.4	6.09	97.1	125	2.08	–	–	–
11:55	–	–	–	21.3	6.05	95.2	45	3.34	–	20.25	–
12:00pm	–	–	–	21.5	6.01	93.4	57	2.18	162	–	–

Sample Condition Color: – Odor: – Appearance: –

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading

Comments

ARCADIS GERAGHTY & MILLER

Water Sampling Log

Project: N. Tonawanda | Project No.: NY001346.0405.0002 | Page: 1 of 1

Site Location: Batavia, NY | Date: 9/26/05

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

Weather: Overcast 75° | Sampling Time: Begin 12:46 pm | End —

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	94
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11
Casing Diameter/Type	4" / PVC (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 11:25 end 12:45
Pumping Rate (gpm)	—
Evacuation Method	Dedicated bladder Pump/peristaltic

Field Parameters

	11:25 I	11:45 IV	12:10 2V	12:45 3V
Color	Light Brown	"	Reddish Brown	—
Odor	None	"	"	—
Appearance	turbid	"	"	—
pH (s.u.)	6.47	6.14	5.93	5.73
Conductivity (mS/cm)	123.4	127.2	128.4	128.4
(µmhos/cm)	—	—	—	—
Turbidity (NTU)	—	—	—	13.6
Temperature (°C)	16.5	17.6	17.5	19.0
Dissolved Oxygen (mg/L)	—	—	—	—
Salinity (%)	—	—	—	—
Sampling Method	Bladder	"	"	—

Remarks: PID: 35.10 TW: 45.60 Well casing has been raised & concrete added around well

PID reading at wellhead 3.5ppm; Breathing zone 0

Constituents Sampled	Container Description	Number	Preservative
See COC			

Sampling Personnel: DZ/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

8.13
0.40
45.6
48.4 x .43 +50

2
x 1
48.4
.43
19.36

19.36
14.52
33.88 +50 = 83.88 PSI

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001348.0405 BP Task: 00002 Well ID: GA-18D
Date: 9/28/05 Sampled By: DZ
Sampling Time: ~~0P +.30~~ 2:25 pm Recorded By: DZ
Weather: Overcast 75° Coded Replicate No.: N/A

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

Purging Information
Casing Material: PVC Purge Method: Dedicated Bladder/ Low Flow
Casing Diameter: 4" Screen Interval (ft bmp): Top 290 Bottom 300
Sounded Depth (ft bmp): 300 Pump Intake Depth (ft bmp): 295
Depth to Water (ft bmp): 48.22 Purge time Start: 1:25 pm Finish: 2:25

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
1:25	—	—	—	21.3	6.78	264	147	7.30	—	48.22	—
1:30	—	—	—	19.4	6.08	176.7	157	6.94	—	—	—
1:35	—	—	—	19.5	6.80	[redacted]	179	6.90	—	48.20	—
1:40	—	—	—	19.4	5.66	109.9	196	6.85	—	—	—
1:45	—	—	—	19.4	5.71	108.9	215	6.92	—	48.25	—
1:50	—	—	—	19.4	5.61	108.4	225	6.94	—	—	—
1:55	—	—	—	19.4	5.59	108.2	234	7.01	—	48.28	—
2:00	—	—	—	19.5	5.57	108.0	244	7.03	—	—	—
2:05	—	—	—	19.5	5.57	107.70	249	7.10	—	48.29	—
2:10	—	—	—	19.7	5.57	107.6	254	6.81	—	—	—
2:15	—	—	—	19.6	5.56	107.6	259	6.88	—	48.35	—
2:20	—	—	—	19.6	5.62	107.4	261	6.88	—	—	—
2:25	—	—	—	19.3	5.53	107.1	274	6.81	3.65	48.33	—

Sample Condition Color: — Odor: — Appearance: —

Sample Collection

Parameter:	Container:	No.	Preservative:
See COC			

PID Reading: 13.2 ppm at well head; Breathing Zone 0
Comments: ~~13.2 ppm on Air Quality~~ BP

G:\AFROJECT\WHCS Melville\ERD Pilot Test\lowflowsamplorms.xls-LoFlo-GW-Samp

ARCADIS

Site Activities Tailgate Safety Briefing Sign-in Log

Project Number:	NY001348.0405.00002	Project Name:	Grumman
Date:	9/26/05	Time:	well set-up
Briefing Conducted by: Pat Prezoski	Signature: Pat Prezoski	Company: Arcadis	

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

- ☑ General PPE Usage
- ☑ Hearing Conservation
- ☐ Respiratory Protection
- ☑ Personal Hygiene
- ☑ Exposure Guidelines
- ☑ Decon Procedures
- ☑ Emergency Procedures (include route to hospital)
- ☐ Confined Space
- ☑ Slips, Trips, Falls
- ☑ Heat Stress
- ☐ Thermal Stresses
- ☐ Site Control
- ☐ Work Zones
- ☐ Lockout/Tagout
- ☐ Excavation Safety
- ☐ Confined Space
- ☑ Traffic Safety
- ☐ Changes to the HASP
- ☑ Initial Review of Hazard Evaluation
- ☑ Other (specify): N_2 Gas
- ☐ Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name
Pat Prezoski	Pat Prezoski	Arcadis
Dan Zuk	Dan Zuk	Arcadis

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Model YSI 600 XL Serial 02J0183A1	☐ Turbidity Meter Model 2020 Lamotte Serial	☑ D.O. Meter Model 55/25 FT Serial 00H0611	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☑ PID Model Photovac 2020 Serial EDHF358	☑ pH Cond Temp Model Oakton 300 Series Serial 197765	☐ Rental Model Serial

Project # NY001348.0405.0002

Date 9/26/05

Time 1:15 PM

Personnel PP/DE

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	✓	Yes
Span	✓	Yes

Parameter D.O.	Calibration Successful
100% Saturated Air	Yes
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00	✓	Yes
7.00	✓	Yes
10.00		

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

ARCADIS

Appendix C

Chain Of Custody Records

ARCADIS

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

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 PP JAC

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml Vial VOC 2 ASP CHCl						Remarks	Total
TB090105	L	9/1/05		2							2
GM-17 I	↓	↓		2							2
GM-17 D	↓	↓		2							2
GM-79 I	↓	↓		2							2
GM-79 D	↓	↓		2							2

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

Total No. of Bottles/Containers 10

Relinquished by: [signature]	Organization: Arcadis	Date 9/1/05	Time Gimp	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. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NY001348.0405.00002 / NGC

Project Location Bethpage, NY

Laboratory STL CT

Project Manager Dave Stern

Sampler(s)/Affiliation John Corral + Gary Williams / Arcadis

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VOA VOC 8260 ASP (HCl)	500ml PLASTIC TOTAL Cd/Cr (HNO3)	500ml PLASTIC DISSOLVED Cd/Cr (HNO3)				Remarks	Total
GM-17SR	L	09/07/05		2	1	1					4
GM-16SR	L	09/07/05		2	1	1					4
GM-7BS	L	09/07/05		2	1						3
GM-7BI	L	09/07/05		2	1						3
MW-3R	L	09/07/05		2	1	1					4
FB090705	L	09/07/05		2	1						3
TB090705	L	09/07/05		2							2

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

Total No. of Bottles/ Containers: 23

Relinquished by: [signature]	Organization: ARCADIS	Date 9/7/05	Time 5:40	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 MELISSA SAURER.

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

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name: NY001348.0405.00002

Project Location: BETHPAGE NY.

Laboratory: SEVERN-TRENT LABS SHELTON

Project Manager: CARLO SAN GIOVANNI

Sampler(s)/Affiliation: GW. JC.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 8260 ASP (HCl)	500ml PLASTIC TOTAL Cd/Cr (HNO3)	500ml PLASTIC DISSOLVED Cd/Cr (HNO3)				Remarks	Total
N-10631	L	9-8-05		2	1	1					4
GM-18S				2	1	1					4
GM-33D-2				2							2
FB-9-8-05				2	1	1					4
TB-9-8-05	↓	↓		2							2

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

Total No. of Bottles/ Containers: 16

Relinquished by: V. H. W	Organization: ARCADIS	Date 9/8/05	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: REPORT TO MELISSA SAURBORN

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. 04-2

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001348.0405.00002

Project Location Bethpage, NY

Laboratory STL, CT

Project Manager Dave Stern

Sampler(s)/Affiliation John Corral + Gary Williams (Arcadis)

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml VOA VIALS ASP Method 2000 VOC	ANALYSIS / METHOD / SIZE					Remarks	Total
GM-7502	L	09/09/05		2							2
N-10624	L	09/09/05		2							2
N-10627	L	09/09/05		2		2	Week	TAT			2
FB090905	L	09/09/05		2							2
TB090905	L	09/09/05		2							2

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

Total No. of Bottles/ Containers: 10

Relinquished by: John Corral	Organization: Arcadis	Date 09/09/05	Time 4:00PM	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: Please send results to David 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. Common Outpost

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001348.0405.0002

Project Location Bethpage, NY

Laboratory Severn Trent - Chelton

Project Manager Dave Stern

Sampler(s)/Affiliation JAC / [illegible]

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml Vial VOC 502.2	40ml Vial VOC 502.2 (HCL)					Remarks	Total
TB091305	L	9/13/05		[illegible]	1						1
BP04-1-1	↓	↓		2							2
BP01-1-2	↓	↓		2							2
BP01-1-3	↓	↓		2							2

Note: Analysis VOC 502.2

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

Total No. of Bottles/Containers 7

Relinquished by: [signature]	Organization: Arcadis	Date 9/13/05	Time 7:45pm	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

Please Note: only 1 Trip Blank due to breakage & trip blank is unpreserved

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 outpost

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 JAC / PP

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 502.2 (HCl)						Remarks	Total
TB091405	L	9/14/05		2							2
BPOW 2-1	↓	↓		2							2
BPOW 2-2	↓	↓		6*							6
			Note:	VOC	analysis	502.2					

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

Total No. of Bottles/ Containers: 10

Relinquished by: Cat Profant	Organization: Arcadis	Date 9/14/05	Time 7:00pm	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)

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name: NY001348.0405.0002

Project Location: Bethpage, NY

Laboratory: Severn Trent - Shelton

Project Manager: Dave Stern

Sampler(s)/Affiliation: JAC PG

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 502.2 (HCL)						Remarks	Total
TB091505	L	9/15/05		2							2
BPOU 4-1	↓	↓		2							2
BPOU 4-2	↓	↓		2							2
			Note:	Analysis		VOC	502.2				

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

Total No. of Bottles/ Containers: 6

Relinquished by: Cat Profumi	Organization: Arcadis	Date 9/15/05	Time 7:15pm	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. Grumman outpost

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001349.0405.00002

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation JAC IR

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml V.O.A. VOC 502.2 (HCl)	Remarks	Total
TB091605	L	9/16/05		2		2
RB091605	↓	↓		2		2
BP011 3-1				2		2
BP011 3-2				2		2
					Note: Analysis VOC 502.2	

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

Total No. of Bottles/ Containers: 8

					Seal Intact?
Relinquished by: Pat Orefice	Organization: Arcadis	Date 9/16/05	Time 7:15pm		
Received by:	Organization:	Date / /	Time		Yes No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks: Report to Dave Stern

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

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001318.0405.00002

Project Location BETHPAGE N.Y.

Laboratory SEVERN-TRENT SHELTON

Project Manager CARLO SAN GIOVANNI

Sampler(s)/Affiliation G.W. D.Z.

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VIAL VOC 2000 ASP (HCl)						Remarks	Total
HW-03	L	9-20-05		2							2
HW-29I	↓			2							2
HW-29D	↓			2							2
HW-24I	↓			6*							6*
N-10634	↓			2							2
REP-9-20-05	↓			2							2
FB-9-20-05	↓			2							2
TB-9-20-05	↓			2							2

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

Total No. of Bottles/Containers 20

Relinquished by: [signature]	Organization: ARCADIS	Date 9/20/05	Time 3:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

REPORT TO METESSA SAURBORN

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

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

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001348.0405.0002

Project Location BETHPAGE NY

Laboratory SEVERN-TRENT SHELTON

Project Manager CARLO SAN GIOVANNI

Sampler(s)/Affiliation GW, DZ

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA @ 2000 ASP HCl						Remarks	Total
MW-40S	L	9.21.05		2							2
MW-40I				2							2
MW-42S				2							2
MW-42I				2							2
FB 9.21.05				2							2
TB 9.21.05				2							2

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

Total No. of Bottles/ Containers 12

Relinquished by: [signature]	Organization: ARCADIS	Date 9/21/05	Time 5:00	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: REPORT TO ~~DG~~ MELISSA SAURMAN

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. Gemini Quarterly

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001348.0405.0002

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml Vial VOC 2mL ASP (HCL)						Remarks	Total
TB082305	L	8/23/05		2							2
GM-70D2	↓	↓		2							2
GM-38D	↓	↓		2							2
GM-38D2	↓	↓		2							2

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

Total No. of Bottles/Containers 8

Relinquished by: [signature]	Organization: Arcadis	Date 8/23/05	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:

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. Groundwater

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name: Bethpage Water District

Project Location: Bethpage, NY

Laboratory: H2M

Project Manager:

Sampler(s)/Affiliation: PA

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: Target VOC (Analyte List)						Remarks	Total
GM-70D2	L	8/2/05		2		1:15pm					2
GM-38D	↓	↓		2		3:17pm					2
GM-38D2	↓	↓		2		4:53pm					2

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

Total No. of Bottles/ Containers: 6

						Seal Intact?
Relinquished by: Pat Pagano	Organization: Arcadis	Date 8/23/05	Time 5:35pm			
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 ☐ Lab Courier ☐ Other

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

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

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 PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 2000 ASP (HCL)						Remarks	Total
TB082405	L	8/24/05		2							2
GM-37D2	↓	↓		2							2
GM-37D				2							2

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

Total No. of Bottles/Containers 6

Relinquished by: Pat Prezenski	Organization: Arcadis	Date 8/24/05	Time 6:45pm	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. Gumma

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name Bethpage Water District

Project Location Bethpage NY

Laboratory H2M

Project Manager

Sampler(s)/Affiliation PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC (Ascorbic Acid + HCl)						Remarks	Total
GM-37D2	L	8/24/05		2		2:35pm					2
GM-37D	↓	↓		2		4:55pm					2

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

Total No. of Bottles/Containers 4

Relinquished by: [signature]	Organization: Arcadis	Date 8/24/05	Time 5:42pm	Seal Intact?
Received by: [signature]	Organization:	Date 8/24/05	Time 17:40	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 Quarterly

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001346.04.5002

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: 40 ml Vial VOC + 250 ASP (HCL)						Remarks	Total
TB082505	L	8/25/05		2							2
GM-35D2	↓	↓		2							2
GM-39D	↓	↓		2							2
GM-39D2	↓	↓		2							2

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

Total No. of Bottles/ Containers: 8

Relinquished by: [signature]	Organization: Arcadis	Date 8/25/05	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. Grumman

CHAIN-OF-CUSTODY RECORD

Project Number/Name: Bethpage Water District

Project Location: Bethpage, NY

Laboratory: H2M

Project Manager:

Sampler(s)/Affiliation: PB

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml Vial VOC (Acrolein, Acrylonitrile)					Remarks	Total
GM-35D2	L	8/25/05		2		12:24 pm				2

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

Total No. of Bottles/ Containers: 2

Relinquished by: Pat Crofonki	Organization: Arcadis	Date 8/25/05	Time 18.00	Seal Intact? Yes No N/A
Received by: [illegible]	Organization: UPS	Date 8/25/05	Time [illegible]	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:

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

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name Bethpage Water District

Project Location Bethpage, NY

Laboratory H2M

Project Manager

Sampler(s)/Affiliation PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml vial VOC	(Acrolein, Acrylic)					Remarks	Total
GM-71D2	L	8/26/05		2		3:52pm					2

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

Total No. of Bottles/Containers 2

Relinquished by: Pat Prefrank	Organization: Arcadis	Date 8/26/05	Time 5:32pm	Seal Intact?
Received by: S. Weck	Organization: H2M	Date 8/26/05	Time 5:32 PM	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 Quarterly

CHAIN-OF-CUSTODY RECORD

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Project Number/Name NY001348.0405.00002

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 2000 ASP (HCL)						Remarks	Total
TB082605	L	8/26/05		2							2
GM-73D2	↓	↓		2							2
GM-71D2	↓	↓		2							2

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

Total No. of Bottles/Containers 6

Relinquished by: Pat Prezzanti	Organization: Arcadis	Date 8/26/05	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 + 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. Grumman Quarterly

CHAIN-OF-CUSTODY RECORD

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Project Number/Name NY001348.0405.0002

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation PP JAC

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 200m ASP (HCL)						Remarks	Total
TB082905	L	8/29/05		2							2
GM-21D	↓	↓		2							2
GM-21I	↓	↓		2							2
GM-21S	↓	↓		2							2
FB082905	↓	↓		2							2

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

Total No. of Bottles/Containers 10

Relinquished by: [signature]	Organization: Arcadis	Date 8/29/05	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)

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ARCADIS

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

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 PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml Vial VOC 2000 ASP (HCL)						Remarks	Total
TB083005	L	8/30/05		2							2
GM-20D	↓	↓		2							2
GM-20I	↓	↓		2							2
GM-15I	↓	↓		2							2

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

Total No. of Bottles/Containers 8

Relinquished by: Pat Prejanski	Organization: Arcadis	Date 8/30/05	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. NGC OU2 **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name NY001348.0405.0002 / NGC

Project Location Bethpage, NY

Laboratory STL, Co CT

Project Manager David Stern

Sampler(s)/Affiliation John Corral / Dennis McClafferty Arcadis

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VIAL 2000 ASP VOC						Remarks	Total
ONCT-1	L	08/31/05		2							2
ONCT-2	L	08/31/05		2							2
ONCT-3	L	08/31/05		2							2
ONCT-INF	L	08/31/05		5	* Please use as MS MSD						5
ONCT-EFF	L	08/31/05		2						Normal	2
GP-113-INF	L	08/31/05		2							2
GP-113-EFF	L	08/31/05		2						T.A.T.	2
GP-1	L	08/31/05		2							2
GP-3	L	08/31/05		2							2
GM-13D	L	08/31/05		2							2
GM-16I	L	08/31/05		2							2
REP083105	L	08/31/05		2							2
TB083105	L	08/31/05		2							2

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

Total No. of Bottles/ Containers 29

Relinquished by: John Corral	Organization: Arcadis	Date 08/31/05	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: Please use ONCT-INF as MSMSD, Send Results To David Stern

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

AG 05-12/01

1603

CHAIN - OF - CUSTODY RECORD

Phone: (412) 826-5245 | **Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238** | Fax No. : (412) 826-3433

Company : ARCADIS
Co. Address : 88 DUKE RD MELVILLE NJ
Proj. Manager: CARLO SALVATORE
Proj. Location: BETHPAGE NY
Proj. Number: NY001348.0402.00002
Phone # : 631-249-7600 **Fax # :** 631-249-7610

Sampler's signature :

Parameters Requested

601/602

Results to : MITESH SAVLA
88 DUKE RD.
MELVILLE NJ 11747

Invoice to : MITESH SAVLA
AS ABOVE

Cooler ID	Cooler Temp.

Sample ID	Sample Description	Date	Time	Comp.	Grab	# Cont.	Remarks
INFLUENT	AQ	9/22/05				2	
EFFLUENT	AQ	9/22/05				2	

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
	ARCADIS	9/22/05					
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Accompany Samples YELLOW COPY : Laboratory File PINK COPY : Submitter

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001348.0405 [illegible]

Project Location Bethpage, NY

Laboratory Severn Trent - Shelton

Project Manager Dave Stern

Sampler(s)/Affiliation DZ

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml VIA VOC 200 AXP (HCL)						Remarks	Total
TB 9-26-05	L	9/26/05		2							2
GM-18 I	↓	↓		2							2
GM-18D	↓	↓		2							2

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

Total No. of Bottles/Containers 6

Relinquished by: Daniel Zuck	Organization: Arcadis	Date 9/26/05	Time 5:30pm	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

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Project Number/Name: NY001378.0405.00002

Project Location: BOTHELL NY

Laboratory: SEVERN-TRENT SHELTON

Project Manager: CARLO SAN GIOVANNI

Sampler(s)/Affiliation: G.W

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC ASP 2000 (HCl)						Remarks	Total
GM-74I	L	8-18-05		2							2
GM-74O				2							2
GM-74O-2				6*							6*
GM-73D				2							2
RNR 8-18-05				2							2
TB-8-18-05				2							2

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

Total No. of Bottles/Containers: 16

Relinquished by:	Organization: ARCADIS	Date 8/18/05	Time 5:30	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks:

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

REPORT TO DAVE STARN

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

AG 05-12/01

ARCADIS

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

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name N4001358.0405.00002

Project Location BETHPAGE NY.

Laboratory SEVERN - TRENT SHELTON

Project Manager CAROLYN GIOVANNONE

Sampler(s)/Affiliation G.W. J.C

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml VOA VOC 2000 ASP	500ml PLASTIC TOTAL Cd/Cr (HNO3)	500ml PLASTIC TOTAL Cd/Cr (HNO3)				Remarks	Total
				ANALYSIS / METHOD / SIZE							
MW-15D	L	8-19-05		2							2
MW-15D-2				2							2
MW-15S				2	1						3
MW PT/MW-04						1					1
PT/MW-05						1					1
PT/MW-06						1					1
FB 8-19-05				2	1						3
TB 8-19-05				2							2

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

Total No. of Bottles/ Containers: 15

					Seal Intact?
Relinquished by:	Organization: ARCADIS	Date 8/19/05	Time 4:00		
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 SEVERN

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name Bethpage Water District

Project Location Bethpage, NY

Laboratory H2M

Project Manager

Sampler(s)/Affiliation PP

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml vial VOC (Bacteria [illegible])						Remarks	Total
GM-36D	L	8/22/05		2		2:39pm					2
GM-36D2	↓	↓		2		4:15pm					2

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

Total No. of Bottles/Containers 4

Relinquished by: Pat Palumbo	Organization: Arcadis	Date 8/22/05	Time 5:46pm	Seal Intact?
Received by: [illegible]	Organization:	Date / /	Time [illegible]	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

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

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ARCADIS

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

Project Number/Name NY001349.0405.00002

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: 40 ml vial VOC 2oz Amb (HCl)						Remarks	Total
TB092205	L	9/22/05		2							2
GM-36D	↓	↓		2							2
GM-36D2	↓	↓		2							2

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

Total No. of Bottles/ Containers: 6

Relinquished by: Pat Ragan	Organization: Arcadis	Date 9/23/05	Time 6:15pm	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A

Special Instructions/Remarks: Report to Dave Stern

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

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