NORTHROP GRUMMAN

Town of Oyster Bay
Bethpage Community Park
Investigation Sampling Program

Field Report

December 2003

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

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NORTHROP GRUMMAN
Integrated Systems

Northrop Grumman Corporation
Airborne Early Warning and
Electronic Warfare Systems
South Oyster Bay Road
Bethpage, NY 11714-3581

December 23, 2003
ESH&M-03L-158

Mr. Edwin Dassatti, Director
Bureau of Solid Waste and Corrective Action
Division of Solid and Hazardous Materials
New York State Department of Environmental Conservation
625 Broadway – 9th Floor
Albany, NY 12233-7258

Re: Town of Oyster Bay
Bethpage Community Park
Investigation Sampling Program

Dear Mr. Dassatti:

Enclosed please find three copies of the document entitled:

"Town of Oyster Bay Bethpage Community Park
Investigation Sampling Program
Field Report"

By copy of this letter, the enclosed report is being submitted to the individuals listed below. If you have any questions or comments regarding the enclosed report, please do not hesitate to give me a call at (516) 575-2333.

Very truly yours,

NORTHROP GRUMMAN CORPORATION

Larry L. Leskovjan
Manager
Environmental, Safety, Health & Medical

Enclosure

cc: H. Wilkie (NYSDEC)
L. Rosenmann (NYSDEC)
S. Hamilton (NYSDED)
A. Cava (NYSDEC)
R. Fedigan (NYSDOH)
I. Ushe (NYSDOH)
J. Colter (US Navy)
J. Kaminski (US Navy)

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM

Field Report

Prepared for:

NORTHROP GRUMMAN SYSTEMS CORPORATION
Bethpage, New York

Prepared by:

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
Woodbury, New York

DECEMBER 2003

FIELD REPORT
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM

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1.0 INTRODUCTION

The purpose of this report is to document the field activities and present a discussion of the findings and conclusions of the analytical results associated with the Investigation Sampling Program undertaken within the Town of Oyster Bay Bethpage Community Park by Dvirka and Bartilucci Consulting Engineers (D&B) on behalf of Northrop Grumman Systems Corporation (NGSC). This program was undertaken in accordance with the document entitled, "Town of Oyster Bay Bethpage Community Park, Investigation Sampling Program, Bethpage, New York, Site-Specific Work Plan" dated April 2003, which was reviewed and approved by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH).

The objectives of the Investigation Sampling Program, as presented in the Site-Specific Work Plan, are as follows:

- Identify the limits of contamination above levels of concern.
- Define the areas of highest contamination within the park.
- Provide sufficient information to allow evaluation of various remedial alternatives.
- Determine whether the soil contamination previously detected within the park is currently impacting groundwater quality.

In order to achieve the objectives presented above, the field program was implemented as specified in the Site-Specific Work Plan.

Section 2.0 of this report provides a description of the park property and presents a brief summary of the site history and previous investigation programs. A description of the field activities and overall scope of the Investigation Sampling Program is presented in Section 3.0. Section 4.0 provides a summary of analytical results of the environmental samples collected during the Investigation Sampling Program and presents the findings of the program.

Conclusions drawn as a result of undertaking the Investigation Sampling Program are presented in Section 5.0 of this report.

Appendix A of this report presents monitoring well construction logs for the three groundwater monitoring wells installed during the Investigation Sampling Program. Laboratory analysis summary tables presenting results for the soil and groundwater samples collected and analyzed during the Investigation Sampling Program are provided in Appendix B. Appendix C presents data validation documentation for the laboratory analyses performed on the soil and groundwater samples collected during the Investigation Sampling Program. Boring logs prepared for all soil borings advanced during the Investigation Sampling Program are provided in Appendix D.

2.0 SITE BACKGROUND

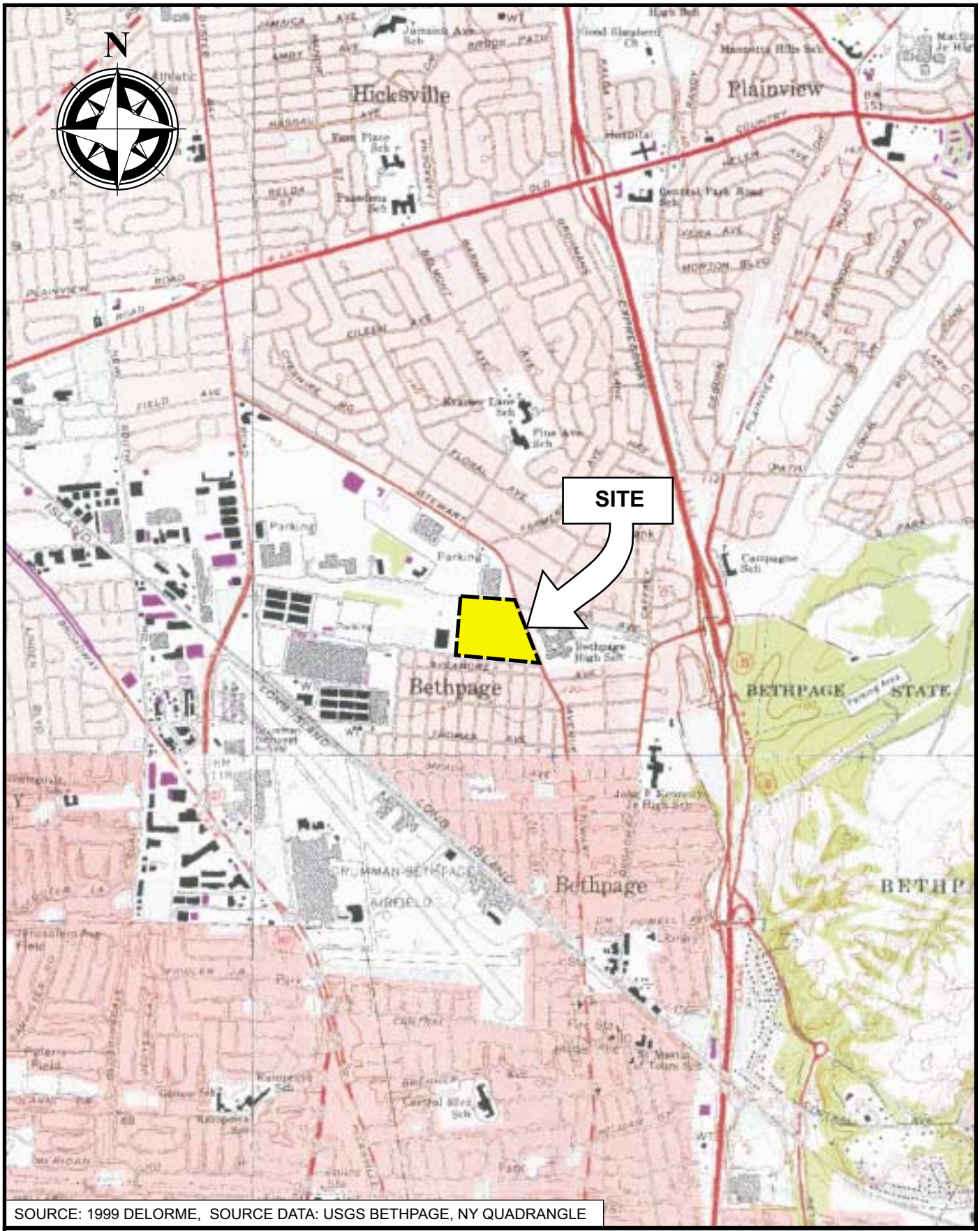
This section provides a general description of the Town of Oyster Bay Bethpage Community Park ("Park property") and surrounding areas and presents a brief summary of site history and historic investigation programs conducted on the property.

2.1 Site Description

The Town of Oyster Bay Bethpage Community Park is located on Stewart Avenue in Bethpage, Nassau County, New York and is situated adjacent to the northeastern portion of the Northrop Grumman Systems Corporation (NGSC) Bethpage Facility. A figure showing the location of the property in relation to the surrounding areas is provided as Figure 2-1.

The entire Park property is comprised of approximately 18 acres and is currently owned by the Town of Oyster Bay. The site is bordered by the Cherry Avenue Extension and the Robert Plan Company building (formerly NGSC's Plant 30) to the north, Stewart Avenue and a high school to the east, the Plant 24 access road to the south, and a second Robert Plan Company building (formerly NGSC's Plant 24) and the McKay Field property, ball fields and former nursery areas (currently owned by NGSC) to the west. The Park is available to community residents year round. The major features and structures located on the Park property include the following:

- Tennis courts
- Paddleball courts
- Covered picnic area
- Two playground areas
- Baseball field
- Two swimming pools
- Covered ice skating rink
- Shuffleboard courts
- Basketball court
- Horseshoe courts
- Park offices
- Parking lot
- Bicycle rack area
- Storm water recharge basin



SOURCE: 1999 DELORME, SOURCE DATA: USGS BETHPAGE, NY QUADRANGLE

RLA/MAPS/NORTHROP1965(01/07/03)

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

SITE LOCATION MAP

FIGURE 2-1

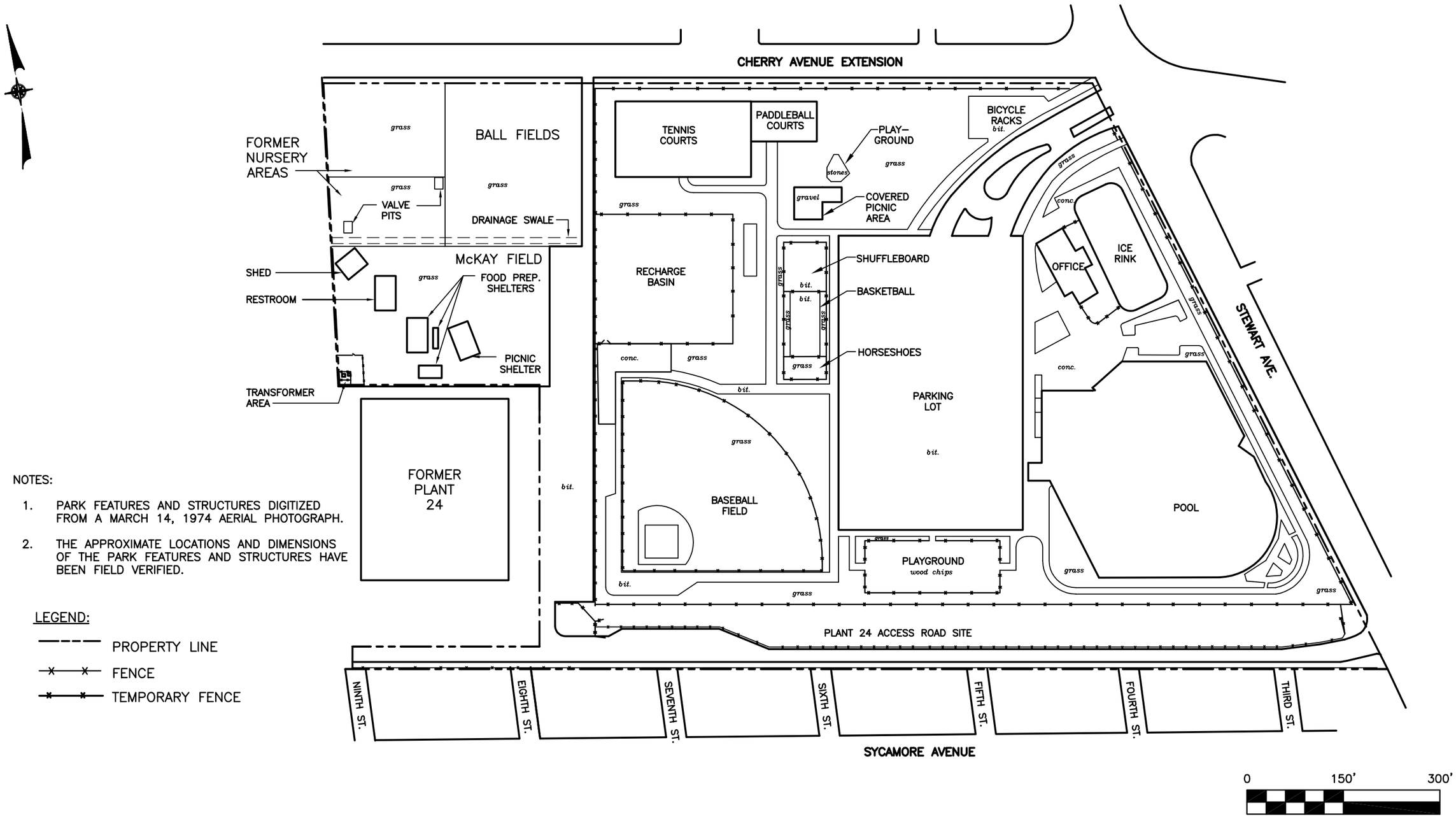
A site plan for the Park property is provided as Figure 2-2. The site is generally level with good drainage. Ground elevation is approximately 120 feet above mean sea level and the depth from ground surface to the upper glacial aquifer is approximately 58 feet. The Soil Conservation Service classifies the site as Urban Land (Ug). Urban Land is defined as an area with at least 85 percent asphalt, concrete, or other impervious building materials, with most of the remaining small areas of soil being well drained Riverhead, Hempstead or Enfield soils, or excessively drained Udipsaments. Udipsaments are defined as manmade fills or borrow areas, most of which are grassed with 0 to 60 percent slopes, which consist of very deep soils that are excessively drained to well-drained.

2.2 Site History

The area comprising what is now the Town of Oyster Bay Bethpage Community Park was primarily farmland until the 1940s. Around that time, the property was purchased by Grumman Aircraft Engineering Corporation, a predecessor company of Northrop Grumman Systems Corporation, as part of the Bethpage Facility. The site was not involved with any of the manufacturing operations undertaken at the Bethpage Facility, and no buildings or structures were ever erected on the property by Grumman Aircraft Engineering Corporation.

According to Northrop Grumman Systems Corporation records, the property comprising the park was donated by Grumman Aircraft Engineering Corporation to the Town of Oyster Bay on October 17, 1962. Shortly thereafter, the park as it appears now was constructed on the property.

Aerial photographs of the Grumman Aircraft Engineering Corporation Bethpage Facility dated from before the transfer of property show the site as undeveloped and indicate some earth disturbances. Northrop Grumman Systems Corporation conducted an investigation which produced the following information:



NOTES:

1. PARK FEATURES AND STRUCTURES DIGITIZED FROM A MARCH 14, 1974 AERIAL PHOTOGRAPH.
2. THE APPROXIMATE LOCATIONS AND DIMENSIONS OF THE PARK FEATURES AND STRUCTURES HAVE BEEN FIELD VERIFIED.

LEGEND:

- PROPERTY LINE
- FENCE
- TEMPORARY FENCE

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

SITE PLAN AND SURROUNDING AREAS

FIGURE 2–2

- Wastewater treatment sludge generated at the Grumman Aircraft Engineering Corporation Plant 2 Industrial Wastewater Treatment Facility was transported to the Park property and placed in one of two sludge drying beds. The wastewater treated at the Plant 2 Industrial Wastewater Treatment Facility resulted from metal finishing operations conducted at both Plant 2 and Plant 3 at the Naval Weapons Industrial Reserve Plant.

- The area where the sludge drying beds were located was enclosed by a chain-link fence, which was secured by a locked gate. This fenced area is visible in available aerial photographs dated between the 1950s and 1962, when the property was transferred to the Town of Oyster Bay.

- Spent rags generated during the wipe-down of a paint booth water curtain located in Plant 2 were transported to the fenced-in area of the Park property where they were emptied into a pit located on the property. In addition, used oil may have been discarded in this pit.

- The southeastern portion of the current park property was utilized as a fire training area where waste oil and jet fuel were ignited and extinguished. The requirement to develop, operate and maintain an on-site fire fighting force ("Crash Crew"), including a fire training program, was imposed on Grumman Aircraft Engineering Corporation by the U.S. Navy.

Northrop Grumman Systems Corporation does not have any information regarding the operations conducted by the Town of Oyster Bay subsequent to the property transfer.

2.3 Previous Investigations

Three previous investigations programs were conducted which included soil sampling within the Park property. The following sections provide a brief description of each program.

2.3.1 November 1994

On November 16 and 17, 1994, an investigation was conducted by Halliburton NUS Corporation on behalf of the U.S. Department of the Navy to determine whether polychlorinated biphenyl (PCB) contamination from the Naval Weapons Industrial Reserve Plant (NWIRP) Site 1 had migrated and impacted downwind off-site locations. Of the 17 locations sampled during this investigation, one was located on the Bethpage Community Park property adjacent to

the basketball court. A soil sample was collected in this location from the 0 to 6-inch depth interval below grade and analyzed for PCBs.

The analytical results of this sample indicated that PCBs were not present at concentrations exceeding the New York State Department of Environmental Conservation's Technical and Administrative Guidance Memorandum (TAGM) No. 4046 Recommended Soil Cleanup Objective. The results of the program were summarized in the report entitled, "Off-site Soil Sampling and PCB Analysis Report, NWIRP, Bethpage, New York - CTO 0089." The report did not recommend additional sampling since PCB concentrations in excess of the TAGM criteria were not detected.

2.3.2 April 1998

In April 1998, the Town of Oyster Bay retained EDER Associates (EDER) to conduct a surface soil sampling program within the Bethpage Community Park to determine whether PCBs were present in the surface soil. As part of this program, EDER collected surface soil samples from five locations within the park including the picnic area (two locations), the baseball field (two locations) and the area between the ice rink and the pool along Stewart Avenue (one location). Soil samples were collected from the surface at each location and analyzed for PCBs.

The analytical results of the surface soil samples indicated that PCBs were not present at concentrations exceeding the NYSDEC's TAGM 4046 Recommended Soil Cleanup Objective. The results of the program were summarized in the letter report entitled, "Soil Sampling - Polychlorinated Biphenyls, Bethpage Community Park," dated April 27, 1998. Recommendations for additional sampling were not presented in the letter report since PCB concentrations in excess of the TAGM criteria were not detected.

2.3.3 March 2002

In March 2002, as a result of detecting PCB concentrations in excess of the NYSDEC TAGM 4064 Recommended Soil Cleanup Objectives on an adjacent property, Northrop

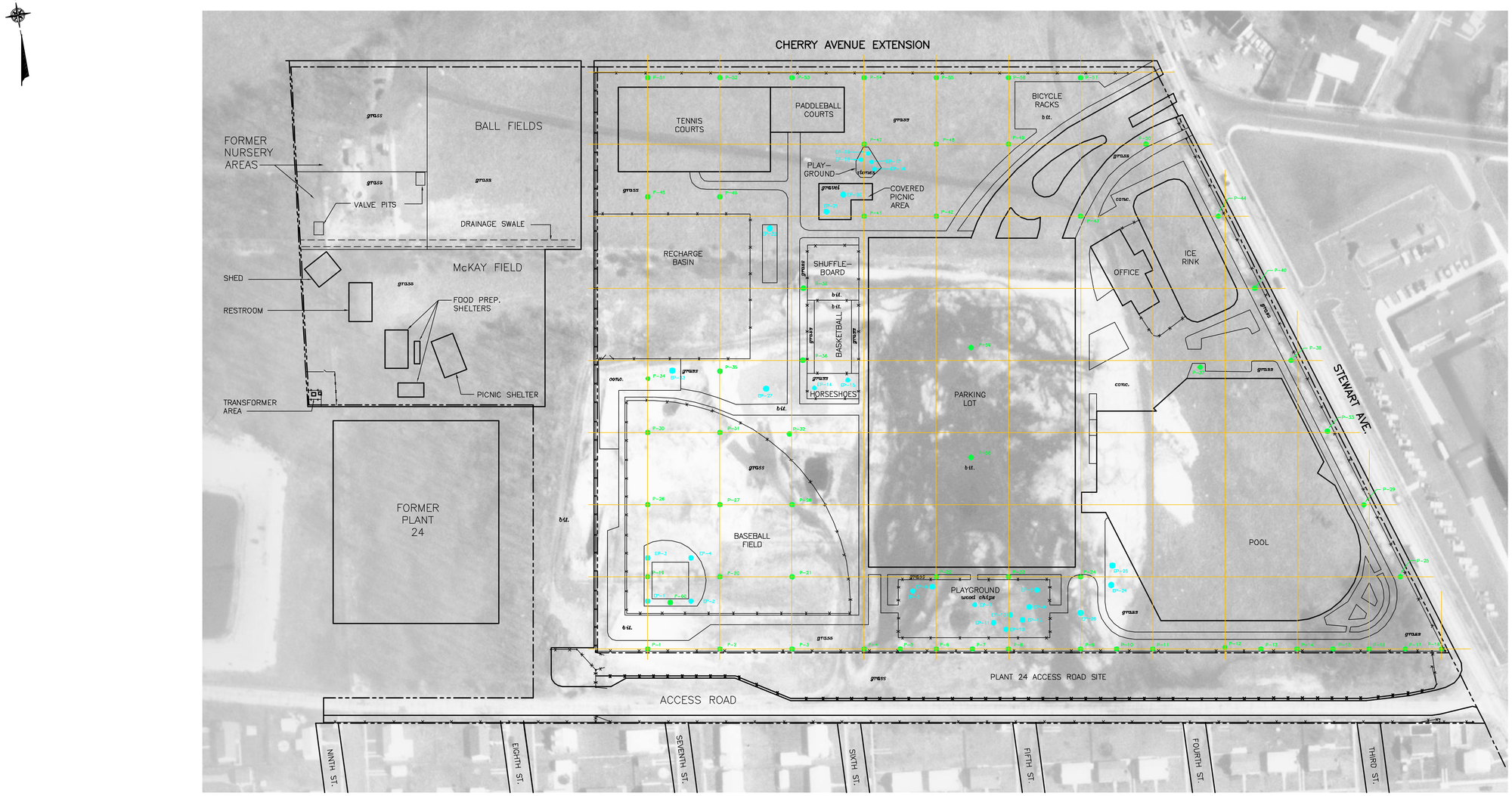
Grumman Systems Corporation retained Dvirka and Bartilucci Consulting Engineers to conduct a soil sampling program within the Bethpage Community Park. The program consisted of advancing 60 soil probes on a 100-foot grid to a depth of 8 feet below grade. Soil samples were collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval and at 2-foot intervals from that point until the total depth of each boring was reached (a total of 5 soil samples per probe). In addition, surface soil samples were collected from 19 "exposure point locations." All soil samples collected were analyzed for PCBs and Resource Conservation and Recovery Act (RCRA) metals. The analytical results of the soil samples indicated that PCBs and some RCRA metals were present at some locations in the park at concentrations exceeding the NYSDEC's TAGM 4046 Recommended Soil Cleanup Objectives. The results of the program were summarized in the report entitled, "Town of Oyster Bay Bethpage Community Park, Soil Sampling Program, Report of Findings," dated June 2002. Subsequent to this soil sampling program, in May 2002, the Town of Oyster Bay closed the Bethpage Community Park. Following installation of a fence to prevent access to the grass areas, the park partially reopened in November 2002.

The grid and sampling locations utilized during the March 2002 soil sampling program has been overlain on an April 10, 1962 aerial photograph and provided as Figure 2-3.

Table 2-1 presents the concentrations of PCBs and RCRA metals detected in soil probe samples in excess of the NYSDEC's TAGM 4046 Recommended Soil Cleanup Objectives. The table presents each soil sample by probe location and depth, and is organized by general location within the Bethpage Community Park. It should be noted that only constituent concentrations in excess of the TAGM 4046 Recommended Soil Cleanup Objectives are presented on the table; if the soil sample did not exhibit any TAGM 4046 exceedances, then "none" is noted in the table cell corresponding to that soil sample.

2.3.4 May 2002

Subsequent to the March 2002 soil sampling program, NYSDOH inspected the park and requested that Northrop Grumman Systems Corporation collect additional exposure point



NOTES:

1. PARK FEATURES AND STRUCTURES DIGITIZED FROM A MARCH 14, 1974 AERIAL PHOTOGRAPH.

2. THE APPROXIMATE LOCATIONS AND DIMENSIONS OF THE PARK FEATURES AND STRUCTURES HAVE BEEN FIELD VERIFIED.

LEGEND:

- PROPERTY LINE
- FENCE
- TEMPORARY FENCE
- SOIL PROBE LOCATION (ADVANCED TO A DEPTH OF 8 FEET BELOW GRADE)
- EXPOSURE POINT SAMPLING LOCATION (COLLECTED FROM THE 0-2" DEPTH INTERVAL)

75 0 75
SCALE IN FEET

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM

APRIL 10, 1962 AERIAL PHOTOGRAPH OVERLAY

FIGURE 2-3

Table 2-1

TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
MARCH 2002 SOIL SAMPLING PROGRAM
SUMMARY OF DETECTED CONTAMINATION

Baseball Field Area (extending from the south fence line to the recharge basin)

Probe	Sample Depth				
	0 – 2"	**2" – 2'**	**2' – 4'**	**4' – 6'**	**6' – 8'**
P-1	None	Cr (58.3)	Cr (102), Hg (0.21)	As (33), Cd (46), Cr (11,800), Hg (0.34), Se (5)	Cr (69.5)
P-2	Cr (86), Hg (0.21), PCBs (1.01)	Cr (147)	Cr (262)	Cr (162)	None
P-3	None	Cr (476), Hg (0.25)	Hg (0.24)	None	None
P-4	Cr (126)	Cr (101), PCBs (1.61)	None	None	None
P-19	None	None	None	None	Cr (155), PCBs (23)
P-20	None	None	Cr (98.6)	Cr (149), PCBs (59)	None
P-21	None	None	Hg (0.54)	None	None
P-26	Hg (0.22)	Hg (0.23)	Cr (126)	Cr (76.3), PCBs (11)	Cr (185), PCBs (31)
P-27	None	None	As (12.2), Cr (64.6), Hg (0.23)	Cr (87.9)	Cr (142), PCBs (41)
P-28	None	None	None	Cr (93.5), PCBs (31)	Cr (186), PCBs (20)
P-30	Cr (123)	Cr (378), PCBs (6.3)	Cr (339), PCBs (16)	Cr (293)	Cr (91.5)
P-31	Cr (364), PCBs (23)	Cr (75.1), Hg (0.26), PCBs (1.14)	Cr (214), PCBs (550)	Cr (222), PCBs (880)	Cd (11.4), Cr (531), PCBs (16)
P-32	Cr (57.3), Hg (0.22)	Cr (112), PCBs (1.3)	Cr (364)	Cr (160)	Cr (52.2)
P-34	Cr (51.3)	Cr (170), PCBs (6.2)	Cr (54)	Cd (10.8), Cr (431), PCBs (17)	Cd (13.7), Cr (760), PCBs (14)
P-35	Cr (277), PCBs (3.62)	Cr (131), PCBs (4.9)	Cr (967)	Cr (858)	Cr (157)
P-36	None	Cd (21.5), Cr (857), Hg (0.29), PCBs (19.2)	Cr (141), PCBs (14)	Cr (180)	Cr (50.3)
P-39	None	None	None	None	None
P-60	None	None	Cr (78.5)	Cr (82.5), PCBs (11)	Cr (121), Hg (0.28), PCBs (11)

Table 2-1 (continued)

TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
MARCH 2002 SOIL SAMPLING PROGRAM
SUMMARY OF DETECTED CONTAMINATION

Area South of Tennis Courts

	Sample Depth				
Probe	**0 – 2"**	**2" – 2'**	**2' – 4'**	**4' – 6'**	**6' – 8'**
P-45	None	Cr (117)	Cr (97.3)	None	None
P-46	None	Cr (68)	Cr (59.1)	Cr (176)	Cr (83.5)

South Playground Area

	Sample Depth				
Probe	**0 – 2"**	**2" – 2'**	**2' – 4'**	**4' – 6'**	**6' – 8'**
P-5	None	None	Cr (971)	As (472), Ba (5,470), Cd (56.3), Cr (124,000), Pb (1,410), Hg (18.5)	Cr (136)
P-6	None	None	None	None	None
P-7	None	Cr (151), Pb (594)	None	None	None
P-8	None	Hg (0.36)	None	None	None
P-9	None	PCBs (3.7)	PCBs (55)	None	None
P-22	None	None	As (15.7), Cr (204), Hg (0.22), PCBs (26)	As (14.5), Cr (76.6), Pb (584)	None
P-23	None	None	None	None	None
P-24	PCBs (1.75)	PCBs (3.8)	None	None	None

Southeast Fence Line

	Sample Depth				
Probe	**0 – 2"**	**2" – 2'**	**2' – 4'**	**4' – 6'**	**6' – 8'**
P-10	None	None	None	None	None
P-11	None	None	None	None	None
P-12	Hg (0.23), PCBs (1.04)	None	None	None	None
P-13	As (13.7), Hg (0.25)	Hg (0.44)	None	None	None
P-14	Hg (0.25), PCBs (1.8)	None	None	Cr (76.4)	Cr (90.9)

Table 2-1 (continued)

TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
MARCH 2002 SOIL SAMPLING PROGRAM
SUMMARY OF DETECTED CONTAMINATION

Southeast Fence Line (continued)

	Sample Depth				
Probe	**0 – 2"**	**2" – 2'**	**2' – 4'**	**4' – 6'**	**6' – 8'**
P-15	PCBs (1.5)	None	None	None	None
P-16	None	None	None	None	None
P-17	None	None	None	None	None
P-18	As (16.9)	As (13.3), Hg (0.52)	None	None	None

Eastern Side of Park

	Sample Depth				
Probe	**0 – 2"**	**2" – 2'**	**2' – 4'**	**4' – 6'**	**6' – 8'**
P-25	PCBs (2)	Cr (645)	Cr (208)	None	None
P-29	Hg (0.29), PCBs (3.4)	None	Cr (79.5)	None	None
P-33	As (13.4), Hg (0.23), PCBs (2.3)	Cr (201)	Cr (70)	None	None
P-37	PCBs (1.7)	Hg (0.25)	None	None	None
P-38	None	None	None	None	None
P-40	None	None	Cr (62.5)	Cr (320)	None
P-43	As (14.2)	None	None	None	None
P-44	Cr (107), Hg (0.31)	None	Cr (85)	None	None
P-50	Hg (0.21)	None	None	None	None

North Area

	Sample Depth				
Probe	**0 – 2"**	**2" – 2'**	**2' – 4'**	**4' – 6'**	**6' – 8'**
P-41	Hg (0.23)	None	None	None	None
P-42	Hg (0.25), PCBs (1.75)	None	None	None	None
P-47	PCBs (2.9)	Cr (51.5), PCBs (1.16)	None	PCBs (44)	None
P-48	Hg (0.23)	PCBs (4.2)	None	Hg (0.23)	Hg (0.3)
P-49	Hg (0.24)	None	Hg (0.22)	Hg (0.31)	None

Table 2-1 (continued)

TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
MARCH 2002 SOIL SAMPLING PROGRAM
SUMMARY OF DETECTED CONTAMINATION

North Fence Line

	Sample Depth				
Probe	**0 – 2”**	**2” – 2’**	**2’ – 4’**	**4’ – 6’**	**6’ – 8’**
P-51	As (16), Hg (0.28)	As (12.6)	None	None	None
P-52	As (16.4), Hg (0.31)	None	None	None	None
P-53	As (16.2), Hg (0.27)	As (15.4), Hg (0.37)	None	None	None
P-54	Hg (0.29)	Hg (0.23)	None	None	None
P-55	As (14.4), Hg (0.26)	As (24.3), Hg (0.3)	None	None	None
P-56	As (13.9), Hg (0.24)	Hg (0.47)	None	None	None
P-57	Hg (0.23)	Hg (0.23)	Hg (0.22)	None	None

Parking Lot

	Sample Depth				
Probe	**0 – 2”**	**2” – 2’**	**2’ – 4’**	**4’ – 6’**	**6’ – 8’**
P-58	--	None	None	None	None
P-59	--	None	As (15.7)	None	None

Notes:

1. All analytical results reported in units of mg/kg (parts per million [ppm]).
2. All analytical results not provided above are below the NYSDEC’s TAGM 4046 Recommended Soil Cleanup Objectives.
3. “None” indicates that none of the constituent concentrations exceeded the NYSDEC’s TAGM 4046 Recommended Soil Cleanup Objectives.
4. -- = No soil sample collected.

samples from eight locations within the Bethpage Community Park, as well as collect a number of surface soil samples immediately adjacent to a soil probe located in left center field of the baseball field (probe P-31) in order to achieve improved horizontal delineation. In May 2002, NGSC retained Dvirka and Bartilucci Consulting Engineers to collect the additional exposure point samples and limited surface soil samples adjacent to probe P-31 within the Park property. This program consisted of collecting surface soil samples (0 to 2 inches below grade) from 8 exposure point locations as well as 12 locations surrounding P-31 (radii of 5, 10 and 50 feet with 4 soil samples collected at each distance). The sample collection program work plan indicated that the soil samples collected from the 10 and 50-foot radii would only be analyzed if the samples from the 5-foot radius exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives. Since the samples analyzed from the 5-foot radius did not exceed the TAGM 4046 values, only the 4 exposure point samples from the 5-foot radius associated with P-31 were analyzed, along with the other 8 exposure point samples. All soil samples were analyzed for PCBs and RCRA metals. The results of the program were summarized in a letter report entitled, "Additional Soil Sampling Program, Town of Oyster Bay Bethpage Community Park, Bethpage, New York" dated July 18, 2002. Only one sample exceeded the TAGM 4046 values, with an analytical result of 3.5 mg/kg.

It should be noted that the Town of Oyster Bay's consultant, Gannett Fleming Engineers and Architects (Gannett Fleming), and the NYSDEC split soil samples with Dvirka and Bartilucci Consulting Engineers during the soil sampling program conducted in May 2002. In addition to the samples listed previously, Gannett Fleming had the 8 soil samples collected from the 10 and 50-foot radii surrounding P-31 analyzed, and collected soil samples from two locations within the recharge basin area from the 0 to 2-inch and 2-inch to 2-foot depth intervals below grade for analysis. Only three samples exceeded the TAGM 4046 values, with PCB analytical results of 1.4 mg/kg, 5.8 mg/kg and 8 mg/kg. The NYSDEC collected surface soil samples from only 7 of the locations from which Dvirka and Bartilucci Consulting Engineers collected soil samples; however, the analytical results have not been made available to NGSC.

3.0 FIELD PROGRAM

This section of the report presents a description of the Investigation Sampling Program undertaken within the Town of Oyster Bay Bethpage Community Park. The field activity portion of the program was conducted May 27 through June 12, 2003, with groundwater sampling performed on June 19, September 12 and November 25 and 26, 2003.

All work conducted within the Bethpage Community Park was performed in accordance with the document entitled, "Town of Oyster Bay Bethpage Community Park, Investigation Sampling Program, Bethpage, New York, Site-Specific Work Plan," dated April 2003. The Site-Specific Work Plan was approved by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH).

3.1 Objectives and Approach

The purpose of the Investigation Sampling Program is to further characterize the environmental quality of surface and subsurface soil located within the Town of Oyster Bay Bethpage Community Park and to determine whether groundwater quality is being adversely impacted by the site.

Based on the results of the soil sampling program undertaken by Northrop Grumman Systems Corporation in March/May 2002 and subsequent meetings and discussions with representatives of the NYSDEC and NYSDOH, areas of the property which exhibited evidence of earth disturbances on historical aerial photographs were identified as primary areas of concern within the Bethpage Community Park. As a result, the Investigation Sampling Program addresses these areas and seeks to further delineate the contamination previously detected.

Boring and Monitoring Well Locations

In order to improve the delineation of any previously detected contamination (i.e., impacted soil), a total of 28 soil borings were advanced within the Bethpage Community Park

during the Investigation Sampling Program. Subsequently, three of these borings were converted to groundwater monitoring wells in order to assess groundwater quality. The rationale for the location and depth of these soil borings and monitoring wells follows:

- Five borings were advanced along the east side of the baseball field area just west of the sidewalk at locations on the east/west lines of the previously established 100-foot grid. These borings are identified as B-2, B-4, B-10, B-15 and BCPMW-3. Soil samples were collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval, and at 2-foot intervals from that point until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

- Four borings were advanced along the west side of the baseball field area just east of the fence line at locations on the east/west lines of the previously established 100-foot grid. These borings are identified as B-3, B-8, B-18 and B-21. Soil samples were collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval, and at 2-foot intervals from that point until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

- One boring was advanced south of the recharge basin area and identified as BCPMW-1. Soil samples were collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval, and at 2-foot intervals from that point until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

- Eight borings were advanced adjacent to previously-advanced soil probes where the deepest soil sample exhibited a polychlorinated biphenyl (PCB) concentration in excess of 10 ppm (the TAGM 4046 Recommended Soil Cleanup Objective for subsurface soil). These borings are identified as B-5 (adjacent to P-34), B-9 (adjacent to P-31), B-12 (adjacent to P-26), B-13 (adjacent to P-27), B-14 (adjacent to P-28), B-19 (adjacent to P-19), B-20 (adjacent to P-60) and B-22 (adjacent to P-20). Soil samples were collected at 2-foot intervals starting at 8 feet below grade until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

  It should be noted that, in addition to that specified above, for borings B-19, B-20 and B-22, soil samples were collected at 2-foot intervals from 0 to 8 feet below grade, screened with the photoionization detector (PID) and selected for volatile and semivolatile organic compound analyses if a particular sample exhibited the highest PID reading within the boring or greater than 50 ppm above background concentrations. These three locations represent the suspected area where fire training activities were historically conducted.

- One boring was advanced between previously-advanced soil probes P-2 and P-20 in order to delineate the southern limit of the suspected area where fire training activities

were historically conducted. This boring is identified BCPMW-2. Soil samples were collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval, and at 2-foot intervals from that point until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

- Five borings were advanced in locations where the historic aerial photographs indicate that former sludge drying beds/pits/excavations were located. These borings are identified as B-6, B-7, B-11, B-16 and B-17. Soil samples were collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval, and at 2-foot intervals from that point until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

- One boring was advanced adjacent to previously-advanced soil probe P-47 in order to vertically delineate the PCB contamination detected in this location. This boring is identified as B-1. Soil samples were collected at 2-foot intervals starting at 8 feet below grade until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

- Three borings were advanced within the south playground area and identified as B-23, B-24 and B-25. Soil samples were collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval, and at 2-foot intervals from that point until the total depth of the boring was reached, consistent with the field protocol established as part of the Site-Specific Work Plan.

- Three of the borings advanced as part of this program were converted to groundwater monitoring wells. These borings are identified as BCPMW-1, BCPMW-2 and BCPMW-3. As such, each boring was continued from its total depth to 10 feet below the water table interface (approximately 70 feet below grade). Soil samples were collected at 2-foot intervals for each 5 feet of boring, characterized and screened with a PID. Laboratory analysis of these soil samples was proposed for all 2-foot intervals which exhibited visual signs of staining and/or discoloration or PID readings above background concentrations. However, based on the field observations and PID readings, it was determined that these soil samples did not require laboratory analysis.

Boring Depth

Earth disturbances were historically located within the present location of the ball field; however, the vertical extent of impacted soil was unclear. Consequently, the total depth of each boring was field determined by a qualified geologist. As such, the soil borings were advanced to the following depth at each location, whichever was greater:

- Twelve (12) feet below grade for borings B-1 through B-5, B-8 through B-10, B-12 through B-15, and B-18 through B-22;

- Sixteen (16) feet below grade for borings B-6, B-7, B-11, B-16 and B-17;

- Undisturbed native soil or a confining layer; or,

- Soil which does not exhibit evidence of contaminant impact such as visual appearance of staining and/or discoloration or PID readings above background concentrations. All borings were continued until two consecutive "visibly clean" sample intervals were collected that did not exhibit PID readings above background concentrations.

The locations of all of the soil borings and monitoring wells advanced/installed during the Investigation Sampling Program are presented on Figure 3-1.

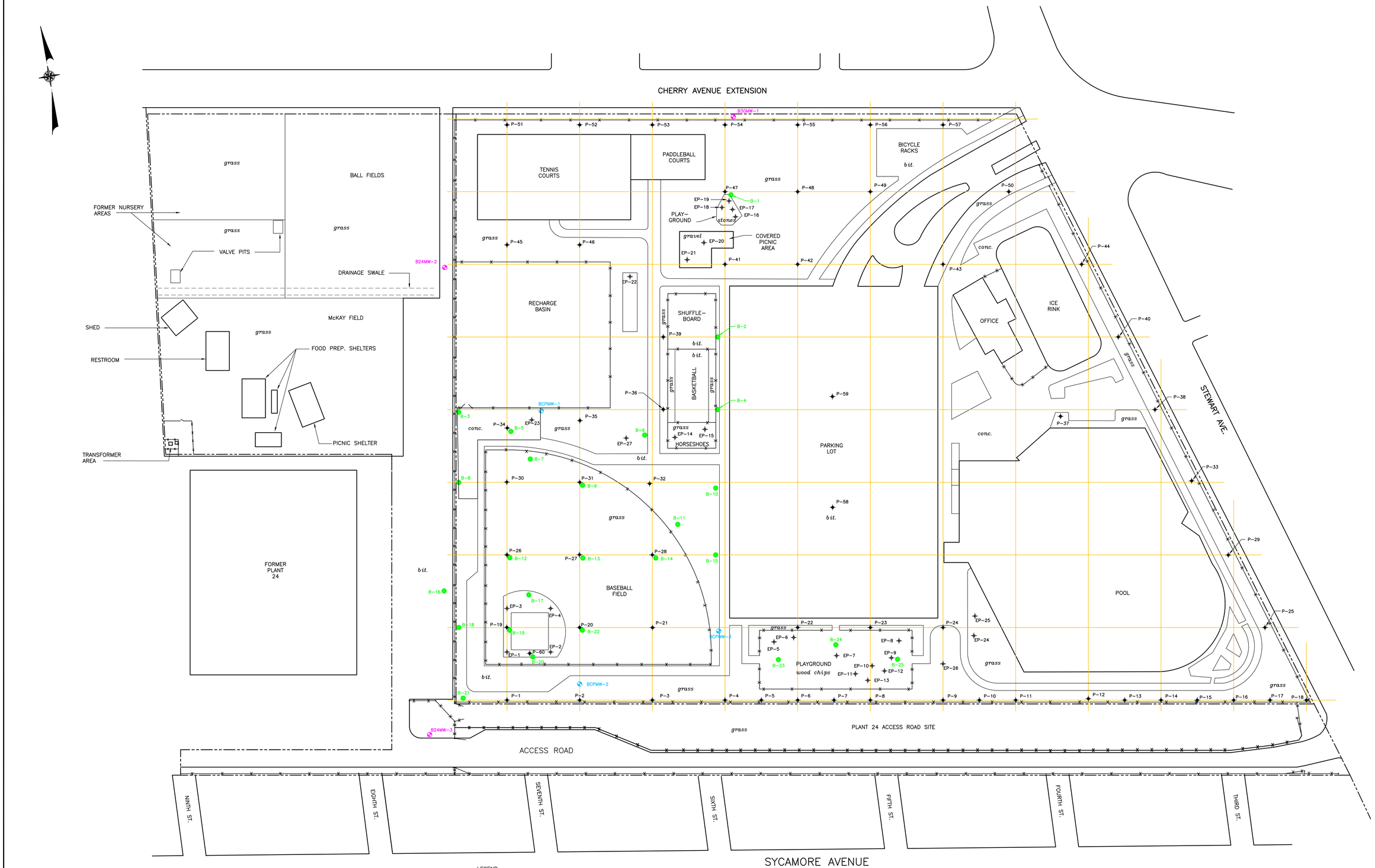
Sample Analyses

The soil samples collected during the Investigation Sampling Program were analyzed for the following parameters as noted:

- Volatile Organic Compounds – If PID readings above background concentrations were detected in a particular boring, then the soil sample exhibiting the highest PID reading, as well as the deepest sample collected from that boring, were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs). In addition, any soil sample exhibiting a PID reading greater than 50 ppm above background concentrations was analyzed for TCL VOCs.

- Semivolatile Organic Compounds – If PID readings above background concentrations were detected in a particular boring, then the soil sample exhibiting the highest PID reading, as well as the deepest sample collected from that boring, were analyzed for TCL semivolatile organic compounds (SVOCs). In addition, any soil sample exhibiting a PID reading greater than 50 ppm above background concentrations was analyzed for TCL SVOCs.

- Polychlorinated Biphenyls – All soil samples collected were analyzed for polychlorinated biphenyls (PCBs). The only exceptions were the soil samples collected from depth intervals of less than 8 feet below grade at borings B-19, B-20 and B-22, since samples from these intervals were previously collected and analyzed for PCBs during the March 2002 soil sampling program.



NOTES:

1. PARK FEATURES AND STRUCTURES DIGITIZED FROM A MARCH 14, 1974 AERIAL PHOTOGRAPH.

2. THE APPROXIMATE LOCATIONS AND DIMENSIONS OF THE PARK FEATURES AND STRUCTURES HAVE BEEN FIELD VERIFIED.

LEGEND:

- PROPERTY LINE
- FENCE
- TEMPORARY FENCE
- PREVIOUS SOIL PROBE LOCATION (ADVANCED TO A DEPTH OF 8 FEET BELOW GRADE – MARCH 2002)
- PREVIOUS EXPOSURE POINT SAMPLING LOCATION (COLLECTED FROM THE 0–2" DEPTH INTERVAL – MARCH 2002 (EP–1 THROUGH EP–19) OR MAY 2002 (EP–20 THROUGH EP–27))
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- OFF–SITE MONITORING WELL LOCATION

0 50' 100'
SCALE: 1"=50'

NO.	DATE	REVISION	INT.
--	10/03	ORIGINAL DRAWING	M.R.H.

PROJECT ENGINEER:	DRAWN BY:
B.M.V.	D.G.C.
DESIGNED BY:	CHECKED BY:
M.R.H.	B.M.V.

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

INVESTIGATION SAMPLING PROGRAM SAMPLE LOCATION PLAN

PROJECT NO. 1965–07
DATE: OCTOBER 2003
SCALE: AS NOTED
DRAWING NO. **3-1**

- Resource Conservation and Recovery Act/Target Analyte List Metals – All soil samples were analyzed for either Resource Conservation and Recovery Act (RCRA) metals or Target Analyte List (TAL) metals; approximately 80% of the soil samples were analyzed for RCRA metals with the remaining 20% analyzed for TAL metals. The only exceptions were the soil samples collected from depth intervals of less than 8 feet below grade at borings B-19, B-20 and B-22, since samples from these intervals were previously collected and analyzed for RCRA metals during the March 2002 soil sampling program.

- Hexavalent Chromium – All soil samples were analyzed for hexavalent chromium. The only exceptions were the soil samples collected from depth intervals of less than 8 feet below grade at borings B-19, B-20 and B-22, since samples from these intervals were previously collected and analyzed for RCRA metals during the March 2002 soil sampling program.

A summary of all of the soil samples collected for laboratory analysis during the Investigation Sampling Program along with the constituents analyzed for is provided in Table 3-1.

3.2 Field Activities

At the request of Northrop Grumman Systems Corporation, on May 27 through June 12, June 19, September 12 and November 25 and 26, 2003, Dvirka and Bartilucci Consulting Engineers (D&B) undertook the Investigation Sampling Program within the Town of Oyster Bay Bethpage Community Park. During the course of the field program, D&B utilized and implemented the Site-Specific Work Plan prepared for the project and approved by both the NYSDEC and NYSDOH.

The following sections present a general description of the soil and groundwater sampling and monitoring well construction activities conducted during the course of the field activity portion of the Investigation Sampling Program.

3.2.1 Borings

Prior to the initiation of the field program, all boring locations proposed in the Site-Specific Work Plan were "marked-out" within the park by a licensed surveyor. It should be noted

Table 3-1
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLE SUMMARY

Boring ID	Sample Depth	Collection Date	Laboratory Analyses					
			VOCs	SVOCS	RCRA Metals	TAL Metals	Hexavalent Chromium	PCBs
B-1	8'-10'	5/28/2003			X		X	X
	10'-12'	5/28/2003	X	X	X		X	X
B-2	0-2"	5/28/2003			X		X	X
	2"-2'	5/28/2003			X		X	X
	2'-4'	5/28/2003			X		X	X
	4'-6'	5/28/2003			X		X	X
	6'-8'	5/28/2003	X	X		X	X	X
	8'-10'	5/28/2003			X		X	X
	10'-11'	5/28/2003			X		X	X
	11'-12'	5/28/2003			X		X	X
	12'-14'	5/28/2003	X	X	X		X	X
B-3	0-2"	5/28/2003			X		X	X
	2"-2'	5/28/2003			X		X	X
	2'-4'	5/28/2003	X	X		X	X	X
	4'-6'	5/28/2003			X		X	X
	6'-8'	5/28/2003			X		X	X
	8'-10'	5/28/2003				X	X	X
	12'-14'	6/02/2003	X	X	X		X	X
B-4	0-2"	5/28/2003			X		X	X
	2"-2'	5/28/2003			X		X	X
	2'-3'	5/28/2003	X	X		X	X	X
	3'-4'	5/28/2003			X		X	X
	4'-6'	5/28/2003			X		X	X
	6'-8'	5/28/2003				X	X	X
	8'-10'	6/02/2003			X		X	X
	12'-14'	6/02/2003	X	X	X		X	X
B-5	8'-10'	5/29/2003			X		X	X
	10'-12'	5/29/2003			X		X	X
	12'-14'	5/29/2003	X	X		X	X	X
	14'-16'	5/29/2003			X		X	X
	16'-18'	5/29/2003			X		X	X
	18'-20'	5/29/2003			X		X	X
	20'-22'	5/29/2003	X	X		X	X	X
B-6	0-2"	5/27/2003			X		X	X
	2"-2'	5/27/2003			X		X	X
	2'-4'	5/27/2003			X		X	X
	4'-6'	5/27/2003	X	X	X		X	X
	8'-10'	5/27/2003			X		X	X
	10'-12'	5/27/2003				X	X	X
	12'-14'	5/27/2003	X	X		X	X	X
	14'-16'	5/27/2003			X		X	X
	16'-18'	5/27/2003			X		X	X
	18'-20'	5/27/2003	X	X	X		X	X
B-7	0-2"	6/02/2003			X		X	X
	2"-2'	6/02/2003			X		X	X

Table 3-1 (continued)
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLE SUMMARY

Boring ID	Sample Depth	Collection Date	Laboratory Analyses					
			VOCs	SVOCS	RCRA Metals	TAL Metals	Hexavalent Chromium	PCBs
B-7 (continued)	2'-4'	6/02/2003	X	X	X		X	X
	4'-6'	6/02/2003				X	X	X
	6'-8'	6/02/2003	X	X	X		X	X
	8'-10'	6/02/2003	X	X		X	X	X
	10'-12'	6/02/2003	X	X	X		X	X
	12'-14'	6/02/2003	X	X	X		X	X
	14'-16'	6/02/2003				X	X	X
	16'-18'	6/02/2003	X	X	X		X	X
	18'-20'	6/02/2003			X		X	X
	20'-22'	6/02/2003			X		X	X
	22'-24'	6/02/2003	X	X	X		X	X
B-8	0-2"	5/29/2003			X		X	X
	2"-2'	5/29/2003			X		X	X
	2'-4'	5/29/2003			X		X	X
	4'-6'	5/29/2003				X	X	X
	6'-8'	5/29/2003			X		X	X
	8'-10'	5/29/2003			X		X	X
	10'-12'	5/29/2003	X	X	X		X	X
B-9	8'-10'	6/10/2003	X	X	X		X	X
	10'-12'	6/10/2003				X	X	X
	12'-14'	6/10/2003			X		X	X
	14'-16'	6/10/2003			X		X	X
	16'-18'	6/10/2003			X		X	X
	20'-22'	6/10/2003			X		X	X
	22'-24'	6/10/2003			X		X	X
	24'-26'	6/10/2003	X	X		X	X	X
B-10	0-2"	6/02/2003			X		X	X
	2"-2'	6/02/2003				X	X	X
	2'-4'	6/02/2003			X		X	X
	6'-8'	6/02/2003			X		X	X
	8'-10'	6/02/2003			X		X	X
	10'-12'	6/02/2003	X	X		X	X	X
B-11	0-2"	5/27/2003			X		X	X
	2"-2'	5/27/2003			X		X	X
	2'-4'	5/27/2003			X		X	X
	4'-6'	5/27/2003			X		X	X
	6'-8'	5/27/2003			X		X	X
	8'-10'	5/27/2003			X		X	X
	10'-12'	5/27/2003	X	X		X	X	X
	12'-14'	5/27/2003			X		X	X
	14'-16'	5/27/2003			X		X	X
	16'-18'	5/27/2003				X	X	X
	18'-20'	5/27/2003	X	X	X		X	X

Table 3-1 (continued)
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLE SUMMARY

Boring ID	Sample Depth	Collection Date	Laboratory Analyses					
			VOCs	SVOCS	RCRA Metals	TAL Metals	Hexavalent Chromium	PCBs
B-12	8'-10'	6/09/2003			X		X	X
	10'-12'	6/09/2003			X		X	X
	12'-14'	6/09/2003				X	X	X
	14'-16'	6/09/2003			X		X	X
	16'-18'	6/09/2003	X	X	X		X	X
	18'-20'	6/09/2003				X	X	X
	20'-22'	6/09/2003	X	X	X		X	X
	22'-24'	6/09/2003			X		X	X
	25'-26'	6/09/2003			X		X	X
	26'-28'	6/09/2003	X	X	X		X	X
B-13	8'-10'	6/09/2003				X	X	X
	10'-12'	6/09/2003			X		X	X
	12'-14'	6/09/2003			X		X	X
	14'-16'	6/09/2003			X		X	X
	16'-18'	6/09/2003					X	X
	18'-20'	6/09/2003	X	X		X	X	X
	20'-22'	6/09/2003			X		X	X
	22'-24'	6/09/2003			X		X	X
	24'-26'	6/09/2003	X	X		X	X	X
B-14	8'-10'	6/11/2003			X		X	X
	10'-12'	6/11/2003			X		X	X
	12'-14'	6/11/2003	X	X		X	X	X
B-15	0-2"	6/02/2003			X		X	X
	2"-2'	6/02/2003				X	X	X
	4'-6'	6/02/2003			X		X	X
	6'-8'	6/02/2003			X		X	X
	8'-10'	6/02/2003			X		X	X
	10'-12'	6/02/2003	X	X		X	X	X
B-16	0-2"	5/29/2003			X		X	X
	2"-2'	5/29/2003			X		X	X
	2'-4'	5/29/2003				X	X	X
	4'-6'	5/29/2003			X		X	X
	6'-8'	5/29/2003			X		X	X
	8'-10'	5/29/2003			X		X	X
	10'-12'	5/29/2003			X		X	X
	12'-14'	5/29/2003			X		X	X
	14'-16'	5/29/2003	X	X		X	X	X
B-17	0-2"	6/03/2003			X		X	X
	2"-2'	6/03/2003			X		X	X
	2'-4'	6/03/2003	X	X	X	X	X	X
	4'-6'	6/03/2003	X	X	X		X	X
	6'-8'	6/03/2003	X	X	X		X	X
	8'-10'	6/03/2003			X		X	X
	10'-12'	6/03/2003			X		X	X

Table 3-1 (continued)
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLE SUMMARY

Boring ID	Sample Depth	Collection Date	Laboratory Analyses					
			VOCs	SVOCS	RCRA Metals	TAL Metals	Hexavalent Chromium	PCBs
B-17 (continued)	12'-14'	6/03/2003	X	X	X		X	X
	14'-16'	6/03/2003	X	X		X	X	X
	16'-18'	6/03/2003	X	X	X		X	X
	18'-20'	6/03/2003			X		X	X
	20'-22'	6/03/2003			X		X	X
	22'-24'	6/03/2003				X	X	X
	24'-26'	6/03/2003			X		X	X
	28'-30'	6/03/2003			X		X	X
	30'-32'	6/03/2003			X		X	X
	32'-34'	6/03/2003			X		X	X
	34'-36'	6/03/2003	X	X		X	X	X
B-18	0-2"	5/29/2003			X		X	X
	2"-2'	5/29/2003			X		X	X
	2'-4'	5/29/2003	X	X		X	X	X
	4'-6'	5/29/2003			X		X	X
	6'-8'	5/29/2003			X		X	X
	8'-10'	5/29/2003			X		X	X
	10'-12'	5/29/2003			X		X	X
	12'-14'	5/29/2003	X	X		X	X	X
B-19	8'-10'	6/03/2003	X	X		X	X	X
	10'-12'	6/03/2003			X		X	X
	12'-14'	6/03/2003	X	X	X		X	X
	16'-18'	6/03/2003	X	X	X		X	X
	18'-20'	6/03/2003	X	X		X	X	X
	22'-24'	6/03/2003			X		X	X
	24'-26'	6/03/2003				X	X	X
	26'-27'	6/03/2003			X		X	X
	27'-28'	6/03/2003			X		X	X
	28'-30'	6/03/2003	X	X	X		X	X
B-20	6'-8'	6/03/2003	X	X				
	8'-10'	6/03/2003	X	X		X	X	X
	10'-12'	6/03/2003	X	X	X		X	X
	12'-14'	6/03/2003	X	X	X		X	X
	14'-16'	6/03/2003	X	X		X	X	X
	16'-18'	6/03/2003	X	X	X		X	X
	18'-20'	6/03/2003	X	X	X		X	X
	22.5'-24'	6/03/2003			X		X	X
	24'-26'	6/03/2003	X	X		X	X	X

Table 3-1 (continued)
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLE SUMMARY

Boring ID	Sample Depth	Collection Date	Laboratory Analyses					
			VOCs	SVOCS	RCRA Metals	TAL Metals	Hexavalent Chromium	PCBs
B-21	0-2"	6/02/2003			X		X	X
	2"-2'	6/02/2003			X		X	X
	2'-4'	6/02/2003				X	X	X
	4'-6'	6/02/2003			X		X	X
	6'-8'	6/02/2003			X		X	X
	8'-10'	6/02/2003			X		X	X
	10'-12'	6/02/2003	X	X	X		X	X
B-22	4'-6'	6/09/2003	X	X				
	6'-8'	6/09/2003	X	X				
	8'-10'	6/09/2003	X	X	X		X	X
	10'-12'	6/09/2003	X	X		X	X	X
	12'-14'	6/09/2003	X	X	X		X	X
	14'-16'	6/09/2003	X	X	X		X	X
	16'-18'	6/09/2003	X	X	X		X	X
	18'-20'	6/09/2003				X	X	X
	20'-22'	6/09/2003			X		X	X
	22'-24'	6/09/2003			X		X	X
	25'-26'	6/09/2003			X		X	X
	28'-30'	6/09/2003	X	X		X	X	X
B-23	0-2"	6/10/2003			X		X	X
	2"-2'	6/10/2003			X		X	X
	2'-4'	6/10/2003				X	X	X
	4'-6'	6/10/2003			X		X	X
	6'-8'	6/10/2003			X		X	X
	8'-10'	6/10/2003			X		X	X
	10'-12'	6/10/2003			X		X	X
B-24	0-2"	6/10/2003			X		X	X
	2"-2'	6/10/2003			X		X	X
	2'-4'	6/10/2003			X		X	X
	4'-6'	6/10/2003	X	X	X		X	X
	6'-8'	6/10/2003				X	X	X
	8'-10'	6/10/2003			X		X	X
	10'-12'	6/10/2003	X	X	X		X	X
B-25	0-2"	6/10/2003			X		X	X
	2"-2'	6/10/2003			X		X	X
	2'-4'	6/10/2003				X	X	X
	4'-6'	6/10/2003			X		X	X
	6'-8'	6/10/2003			X		X	X
	8'-10'	6/10/2003			X		X	X
	10'-12'	6/10/2003	X	X		X	X	X
BCPMW-1	0-2"	5/30/2003			X		X	X
	2"-2'	5/30/2003				X	X	X
	2'-4'	5/30/2003			X		X	X
	4'-6'	5/30/2003			X		X	X

Table 3-1 (continued)
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLE SUMMARY

Boring ID	Sample Depth	Collection Date	Laboratory Analyses					
			VOCs	SVOCS	RCRA Metals	TAL Metals	Hexavalent Chromium	PCBs
BCPMW-1 (continued)	6'-8'	5/30/2003			X		X	X
	8'-10'	5/30/2003			X		X	X
	10'-12'	5/30/2003	X	X		X	X	X
BCPMW-2	0-2"	6/05/2003			X		X	X
	2"-2'	6/05/2003			X		X	X
	2'-4'	6/05/2003				X	X	X
	4'-6'	6/05/2003			X		X	X
	6'-8'	6/05/2003			X		X	X
	8'-10'	6/05/2003			X		X	X
	10'-12'	6/05/2003	X	X		X	X	X
BCPMW-3	0-2"	6/05/2003			X		X	X
	2"-2'	6/05/2003			X		X	X
	2'-4'	6/05/2003				X	X	X
		6/10/2003	X	X				
	4'-6'	6/05/2003			X		X	X
	6'-8'	6/05/2003			X		X	X
	8'-10'	6/05/2003			X		X	X
	10'-12'	6/05/2003	X	X	X		X	X
		Total:	71	71	174	54	228	228

that, during the field program, some of the boring locations had to be relocated in order to provide access for the drill rig. A complete description of the changes made to the boring locations proposed in the Site-Specific Work Plan is provided in Section 3.3 of this report. It should be noted that Figure 3-1 of this report has been updated to reflect the correct locations where the borings were relocated and advanced.

Soil sampling activities were conducted within the Bethpage Community Park on May 27 through June 11, 2003. It should be noted that field activities were not performed on June 4, 2003 due to a rainfall event.

At each boring location, a 4.25-inch hollow stem auger was advanced to the appropriate depth (as described previously) with soil samples collected at 2-foot intervals utilizing the split spoon sampling method. The soil samples collected from each boring were characterized and screened with a PID by a D&B field geologist. The PID was calibrated at the beginning of each day and following the lunch break. All field observations were logged in a bound field log book by the field geologist. All soil samples were placed in precleaned laboratory-supplied sample jars, labeled, placed on ice and packed into a sample cooler for delivery to the laboratory. All soil samples collected were denoted by their respective boring number (as shown on Figure 3-1) following by the depth interval below grade from which the sample was retrieved. All drill cuttings were placed in 55-gallon drums and temporarily staged on-site prior to off-site transportation for proper disposal in accordance with all applicable federal, state and local regulations. With the exception of the three borings that were converted to monitoring wells, following sample collection, all of the boreholes were grouted flush to grade utilizing bentonite grout.

Following sample collection at each boring location, all non-disposable drilling and sampling equipment was properly decontaminated utilizing the procedures outlined in the Site-Specific Work Plan. All disposable drilling and sampling equipment was properly discarded following its one-time use.

In total, 28 soil borings were advanced within the Bethpage Community Park and 231 soil samples were collected for laboratory analysis. Two hundred twenty-eight (228) of the soil samples were analyzed for PCBs and hexavalent chromium; 174 of the soil samples were analyzed for RCRA metals; 54 of the soil samples were analyzed for TAL metals; and 71 of the soil samples were analyzed for TCL VOCs and TCL SVOCs. The laboratory utilized to perform the analyses of the soil samples (Mitkem Corporation) participates in the NYSDOH Environmental Laboratory Approval Program (ELAP).

It should be noted that six boring locations (i.e., B-6, B-10, B-21, BCPMW-1, BCPMW-2 and BCPMW-3) had to be relocated from their original proposed locations due to drill rig access limitations. In addition, at the request of the Town of Oyster Bay, three boring locations (i.e., B-23, B-24 and B-25) were added to the program in the south playground area. A complete description of the changes to the sampling locations proposed in the Site-Specific Work Plan is presented in Section 3.3 of this report. It should be noted that Figure 3-1 has been updated to reflect the correct boring locations.

A representative of the NYSDEC was present on-site for 8 of the 13 days of the field program to witness the soil characterization and sampling of each boring advanced during that day. In addition, the NYSDEC representative split soil samples with D&B for select boring intervals.

3.2.2 Monitoring Wells

At boring locations BCPMW-1, BCPMW-2 and BCPMW-3, once the total depth of each boring was reached and soil sampling activities were completed, these three borings were converted to groundwater monitoring wells. The sections that follow describe the construction, development and sampling of each of the three monitoring wells installed within the Bethpage Community Park during the Investigation Sampling Program. The monitoring well locations are shown on Figure 3-1 of this report.

Monitoring Well Construction

Once borings BCPMW-1, BCPMW-2 and BCPMW-3 were advanced to 12 feet below grade and all environmental samples were collected, the borings were continued to approximately 10 feet below the water table. Soil samples were retrieved at 2-foot intervals for each 5 feet of boring, characterized and screened with a PID. Laboratory analysis of these soil samples was proposed in the Site-Specific Work Plan for all 2-foot intervals which exhibited visual signs of staining and/or discoloration or PID readings above background concentrations. However, based on field observations and PID readings, it was determined that these soil samples did not require laboratory analysis. All drill cuttings were placed in 55-gallon drums and staged on-site prior to off-site transportation for proper disposal in accordance with all applicable federal, state and local regulations.

Prior to constructing the monitoring wells, the well casings and screens were decontaminated as outlined in the Site-Specific Work Plan. The monitoring wells were constructed of a 2-inch diameter, 15-foot long, 0.010-inch slot PVC well screen and Schedule 40 PVC riser pipe. The wells were set approximately 5 feet above and 10 feet below the water table interface (approximately 58 feet below ground surface). A number 1 grade silica sand pack was tremied in place to a depth of approximately 2 feet above the top of the well screen.

A finer grain sand pack (100% passing No. 30 sieve and less than 2% passing the No. 200 sieve) approximately 6 inches thick was placed above the sand pack. This finer sand pack was installed by the tremie method.

The remaining annular space above the finer sand pack was filled with “Pure Gold” bentonite manufactured by the American Colloid Co. The bentonite was installed in the annular space by the tremie method from the top of the finer sand pack to ground surface.

A flush-mount bolted steel vault box houses each monitoring well at grade. The vault box was set in concrete and finished to remain flush with surrounding grade while not allowing the

accumulation and infiltration of precipitation or runoff. As such, the concrete gently slopes away from the well cover in such a manner as to not create a trip hazard.

Following completion of the monitoring well construction, a locking vented PVC well cap was placed on the riser pipe and the well labeled with its respective well number. A well construction "as-built" log showing details of the monitoring well construction, description of the materials used and elevations of well features has been prepared and is provided in Appendix A of this report.

On July 30, 2003, top of casing elevations for each well were surveyed by a licensed surveyor for the purpose of determining the groundwater elevation at each monitoring well location. In addition, top of casing elevations of three nearby existing off-site monitoring wells were surveyed to assist in the preparation of a groundwater contour map for the park property.

It should be noted that the water table at BCPMW-1 was located within a thick clay layer. As a result, depth to groundwater measurements were collected from nearby existing off-site monitoring wells in order to determine the approximate depth of the water table in the area. Once the approximate depth of the water table was determined, the screen for this well was set at approximately 5 feet above and 10 feet below the water table. It should also be noted that the vertical extent of the clay layer was not determined in this boring due to concerns about providing a potential pathway for the vertical migration of contamination to deeper aquifers.

Monitoring Well Development

All three monitoring wells were developed subsequent to completion of installation after allowing a minimum of 24 hours for the grout material to set. The wells were developed in accordance with NYSDEC-approved methods and criteria and included pump and surge, and bailing.

Each monitoring well was pumped utilizing a properly decontaminated submersible pump and new disposable polyethylene tubing. All development water was containerized in 55-gallon drums and temporarily staged on-site prior to off-site transportation for proper disposal.

The monitoring wells were developed until the discharged water achieved a turbidity of 50 Nephelometric Turbidity Units (NTUs) or less for a minimum of three consecutive measurements. Sample measurements were collected at every three to five well volumes. One well volume is considered the amount of water contained in the well riser pipe and sand pack. Well development monitoring was supplemented by additional measurements of pH, conductivity, dissolved oxygen and temperature. These measurements were collected concurrent with the turbidity measurements. Well development continued until the turbidity requirements were achieved and the turbidity, pH, conductivity, dissolved oxygen and temperature values had stabilized. Stabilized values are defined as three consecutive readings with 10% variation or less.

All well development water was placed in 55-gallon drums and temporarily staged on-site prior to off-site transportation for proper disposal in accordance with all applicable federal, state and local regulations. All disposable development equipment and supplies were placed in a separate 55-gallon drum and temporarily staged on-site prior to off-site transportation for proper disposal in accordance with all applicable federal, state and local regulations.

The following general procedures were utilized during the development of all three monitoring wells:

- Calibrate meters and instruments prior to use. Record calibration notes in field book.
- Monitor air quality of the well head space and ambient air in the working zone immediately around the well. Determine the appropriate level of respiratory protection.
- Measure water level and total depth of well from the fixed measuring point.
- Calculate well volume in gallons using the following formula:

$$V = r^2L\ (3.14)\ (7.48\ \text{gallons/cubic foot})$$

Also include volume calculation of the saturated sand pack in the total volume calculation.

- Remove the required volume of water in accordance with NYSDEC protocol and monitor for turbidity, pH, conductivity, dissolved oxygen and temperature at the appropriate intervals. Ensure down-hole tools and instruments have been properly decontaminated in accordance with the procedures outlined in the Site-Specific Work Plan.

- At the completion of well development, remove down-hole tools and secure well site and well.

All down-hole tools (e.g., bailers, water level probe, pump and surge blocks) were decontaminated prior to use utilizing the decontamination procedures outlined in the Site-Specific Work Plan.

It should be noted that, during development, monitoring well BCPMW-1 recharged very slowly. As a result, the well was completely evacuated and allowed to recharge. Due to the slow recharge rate of the well, additional development was not conducted.

As discussed later in this report, Northrop Grumman Systems Corporation decided to sample three off-site monitoring wells located immediately adjacent to the Bethpage Community Park. These three monitoring wells are identified as B24MW-2, B24MW-3 and B30MW-1 and located as shown on Figure 3-1. These wells were installed as part of delisting activities conducted on adjacent properties in February and March 1994. Since these wells have not been developed or sampled since around that time, it was decided that these three wells should be redeveloped prior to sampling.

On November 13 and 19, 2003, monitoring wells B24MW-2, B24MW-3 and B30MW-1 were redeveloped utilizing the procedure detailed previously. It should be noted that, during development, monitoring well B24MW-2 recharged very slowly and was completely evacuated. As a result, a second attempt to develop this well was performed utilizing low-flow techniques. During this second attempt, all parameters had stabilized except for turbidity which dropped to only approximately 100 NTUs.

Groundwater Sampling

On June 19, 2003, D&B collected groundwater samples from each of the three monitoring wells installed within the Bethpage Community Park during the Investigation Sampling Program. It should be noted that a representative of the NYSDEC was present on-site during the groundwater sampling activities and the NYSDEC obtained split samples for groundwater samples collected from each monitoring well.

Prior to sample collection, approximately three to five well volumes were purged from each monitoring well utilizing a new disposable polyethylene bailer (BCPMW-1) or a properly decontaminated submersible pump and new dedicated polyethylene tubing (BCPMW-2 and BCPMW-3). The volume of each well was calculated from depth to water and total well depth measurements collected immediately prior to purging each well. All purge water was containerized in a 55-gallon drum and temporarily staged on-site prior to off-site transportation for proper disposal in accordance with all applicable federal, state and local regulations. Measurements of conductivity, turbidity, dissolved oxygen, temperature and pH were recorded initially and for every half well volume of groundwater purged. Following the purge and stabilization of the aforementioned parameters, a groundwater sample was collected from each monitoring well utilizing a dedicated, disposable polyethylene bailer. All groundwater samples were placed in precleaned laboratory-supplied sample bottles, labeled, placed on ice and packed into a sample cooler for delivery to the laboratory. Each groundwater sample collected was identified according to its respective monitoring well number.

Following sample collection at each monitoring well location, all non-disposable sampling equipment was properly decontaminated utilizing the procedures outlined in the Site-Specific Work Plan. All disposable sampling equipment was properly discarded following its one-time use.

In total, three groundwater samples were collected for laboratory analysis. All groundwater samples were analyzed for TCL VOCs, TCL SVOCs, PCBs, hexavalent chromium (total and dissolved) and TAL metals (total and dissolved). The laboratory utilized to perform the

analyses of the groundwater samples (Mitkem Corporation) participates in the NYSDOH Environmental Laboratory Approval Program (ELAP). All filtering of the groundwater samples was completed by and at the laboratory.

It should be noted that following the groundwater sampling activities, depth to water measurements were collected from three nearby existing off-site monitoring wells located immediately adjacent to the Bethpage Community Park. The purpose of taking these measurements was to assist in the preparation of a groundwater contour map to determine the direction of groundwater flow across the park property.

It should also be noted that, following the purge of four well volumes from monitoring well BCPMW-1, there was not enough water remaining within the well to fill all of the sample bottles. As a result, following the purge, the well was allowed to recharge for approximately 3 hours prior to collection of the groundwater sample.

Following receipt and review of the analytical results of the groundwater samples collected on June 19, 2003, it was determined that each of the three monitoring wells should be resampled (a discussion of the rationale for resampling the wells is provided in Section 4.0 of this report). As a result, on September 12, 2003, groundwater samples were collected from all three monitoring wells utilizing the same procedure described above, with the exception that dedicated disposable polyethylene bailers were utilized to purge all of the monitoring wells (a submersible pump and tubing were not utilized). All of the groundwater samples collected on September 12, 2003 were analyzed for VOCs only.

On November 25 and 26, 2003, groundwater samples were collected from off-site monitoring wells B24MW-2, B24MW-3 and B30MW-1, as well as on-site monitoring wells BCPMW-1, BCPMW-2 and BCPMW-3. The groundwater samples were collected utilizing the same procedure described previously. The wells were purged utilizing a new disposable polyethylene bailer (BCPMW-1 and B24MW-2; due to poor recharge) or a properly decontaminated submersible pump and new dedicated polyethylene tubing (BCPMW-2, BCPMW-3, B24MW-3 and B30MW-1). All groundwater samples were collected utilizing new

disposable polyethylene bailers which were discarded following their one-time use. All of the groundwater samples collected on November 25 and 26, 2003 were analyzed for VOCs only.

3.3 Changes to the Proposed Field Program

During the course of the field program and discussions with the NYSDEC, it became necessary to make some changes to the original field program proposed in the Site-Specific Work Plan. These changes became necessary as a result of drill rig access limitations, requests for additional sampling and requests for changes in methodology. The following list presents the changes made to the original field program proposed in the Site-Specific Work Plan:

- Boring B-6 - This boring was moved 5 feet to the south and 1-foot to the west due to a newly-installed fence located in the area which prevented the drill rig from accessing the proposed location. This boring was relocated to the opposite side of the fence which placed it within the area of the park fenced-off from the public.

- Boring B-10 - This boring was moved 8 feet to the south due to a tree which prevented the drill rig from accessing the proposed location.

- Boring B-21 - This boring was moved 1.5 feet to the north and 6 feet to the east due to the park boundary fence which prevented the drill rig from accessing the proposed location.

- Boring BCPMW-1 - This boring was moved 9 feet to the south and 10 feet to the east since the proposed location did not allow access of the drill rig. The proposed location was situated along the southern boundary of the recharge basin area but due to large trees and vegetation growing in this area, the drill rig could not access the proposed location. As a result, the boring was relocated to the opposite side of the fence, east of the concrete pad.

- Boring BCPMW-2 - This boring was moved 6 feet to the south due to a park bench which prevented the drill rig from accessing the proposed location.

- Boring BCPMW-3 - This boring was moved 5 feet to the south due to a newly-installed fence located in the area which prevented the drill rig from accessing the proposed location. The relocated boring is situated within the area of the park fenced-off from the public.

- Borings B-23, B-24 and B-25 - These three borings were added to the Investigation Sampling Program at the request of the Town of Oyster Bay. All three borings are located within the south playground area as shown on Figure 3-1. Soil samples were

collected from the 0 to 2-inch depth interval, the 2-inch to 2-foot depth interval, and at 2-foot intervals from that point until the total depth of the boring was reached (as described previously in this section). Based on field observations, all borings were advanced to 12 feet below grade. All soil samples were analyzed for PCBs, hexavalent chromium, RCRA/TAL metals, VOCs and SVOCs (as described previously in this section).

- TAL Metals - The Site-Specific Work Plan proposed to analyze all of the soil samples collected for RCRA metals. However, based on the NYSDEC's letter dated May 6, 2003, Northrop Grumman Systems Corporation agreed to analyze 20% of the soil samples collected for TAL metals and the remaining 80% of the soil samples collected for RCRA metals.

- VOC/SVOC Sample Selection - The Site-Specific Work Plan proposed that, if PID readings above background concentrations were detected in a particular boring, then the soil sample exhibiting the highest PID reading as well as the deepest sample collected from that boring would be analyzed for VOCs and SVOCs. However, based on the NYSDEC's letter dated May 6, 2003, Northrop Grumman Systems Corporation agreed to also analyze any soil sample which exhibited a PID reading of 50 ppm or greater above background concentrations for VOCs and SVOCs.

- Monitoring Wells B24MW-2, B24MW-3 and B30MW-1 - These three off-site monitoring wells are located immediately adjacent to the Bethpage Community Park as shown on Figure 3–1. As discussed in greater detail later in this report, Northrop Grumman Systems Corporation decided to sample these three wells in order to confirm the presence of certain constituents in the groundwater samples collected from within the park.

It should be noted that Figure 3-1 presented in this report has been updated to reflect the correct locations of all borings and monitoring wells advanced/installed during the course of the Investigation Sampling Program. In addition, it should be noted that Figure 3-1 has been updated to identify the location of the concrete pad constructed by the Town of Oyster Bay and located to the south of the recharge basin.

4.0 FINDINGS

This section presents the findings of the Investigation Sampling Program undertaken within the Town of Oyster Bay Bethpage Community Park including a summary of the analytical results of the soil and groundwater samples collected during the field program.

4.1 Sample Analyses

A total of 231 soil samples were collected for laboratory analysis during the field activities conducted within the Town of Oyster Bay Bethpage Community Park during the Investigation Sampling Program between May 27 and June 11, 2003. Two hundred twenty-eight (228) of the soil samples were analyzed for polychlorinated biphenyls (PCBs) utilizing USEPA SW-846 Method 8082 and hexavalent chromium utilizing USEPA SW-846 Method 7196; 174 of the soil samples were analyzed for Resource Conservation and Recovery Act (RCRA) metals utilizing USEPA SW-846 Method 6010/7471; 54 of the soil samples were analyzed for Target Analyte List (TAL) metals utilizing USEPA SW-846 Method 6010/7471; and 71 of the soil samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) utilizing USEPA SW-846 Method 8260 and TCL semivolatile organic compounds (SVOCs) utilizing USEPA SW-846 Method 8270.

Soil Sample Totals						
Total	VOCs	SVOCs	RCRA Metals	TAL Metals	PCBs	Hexavalent Chromium
231	71	71	174	54	228	228

In addition to the soil samples mentioned previously, matrix spike and matrix spike duplicate samples (MS/MSDs) were collected for Quality Assurance/Quality Control (QA/QC) purposes daily or for each “batch” of 20 soil samples collected. As a result, a total of 14 sets of MS/MSD samples were collected during the Investigation Sampling Program for VOC, SVOC, PCB, TAL metal and hexavalent chromium analyses.

A total of three groundwater samples were collected from the three monitoring wells located within the park for laboratory analysis during the field activities conducted within the Town of Oyster Bay Bethpage Community Park during the Investigation Sampling Program on June 19, 2003. All three groundwater samples were analyzed for TCL VOCs utilizing USEPA SW-846 Method 8260, TCL SVOCs utilizing USEPA SW-846 Method 8270, PCBs utilizing USEPA SW-846 Method 8082, TAL metals (total and dissolved) utilizing USEPA SW-846 Method 6010/7471 and hexavalent chromium (total and dissolved) utilizing USEPA SW-846 Method 7196.

In addition to the groundwater samples mentioned previously, a set of MS/MSDs, a trip blank and a field blank were collected for QA/QC purposes. The MS/MSD and field blank samples were analyzed for VOCs, SVOCs, PCBs, TAL metals (total and dissolved) and hexavalent chromium (total and dissolved), and the trip blank was analyzed for VOCs only.

Following receipt and review of the groundwater sample analytical results, it was determined that the three monitoring wells located within the park should be resampled and analyzed for VOCs only (the rationale for making this decision is presented later in this section). As a result, an additional three groundwater samples were collected on September 12, 2003 for VOC analyses only utilizing USEPA SW-846 Method 8260. In addition, a set of MS/MSDs and a trip blank were collected for QA/QC purposes and analyzed for VOCs only.

As discussed later in this section, it was determined that three off-site monitoring wells located immediately adjacent to the Bethpage Community Park (identified as B24MW-2, B24MW-3 and B30MW-1), as well as the three monitoring wells located within the park, should be sampled/resampled and analyzed for VOCs only. As a result, groundwater samples were collected from these six monitoring wells on November 25 and 26, 2003 for VOC analyses only utilizing USEPA SW-846 Method 8260. In addition, two sets of MS/MSDs, two field blanks and two trip blanks were collected for QA/QC purposes and analyzed for VOCs only.

All soil and groundwater sample analyses were performed by Mitkem Corporation which participates in the New York State Department of Health (NYSDOH) Environmental Laboratory

Approval Program (ELAP). The specific compounds/constituents analyzed for were those presented in the Site-Specific Work Plan.

The results of the laboratory analyses performed on the soil and groundwater samples are summarized on Tables B-1 through B-8 presented in Appendix B of this report as follows:

Table No.	Matrix	Analysis
B-1	Soil	VOCs
B-2	Soil	SVOCs
B-3	Soil	PCBs
B-4	Soil	RCRA/TAL Metals and Hexavalent Chromium
B-5	Groundwater	VOCs
B-6	Groundwater	SVOCs
B-7	Groundwater	PCBs
B-8	Groundwater	TAL Metals and Hexavalent Chromium

It should be noted that the soil samples are presented on the tables in boring number order, B-1 through B-25, followed by the soil samples collected from the monitoring well borings. The soil samples for each boring are presented in depth order from grade to the deepest sample.

4.1.1 Soil Screening Criteria

The criteria listed in Appendix A of the New York State Department of Environmental Conservation's (NYSDEC's) Technical and Administrative Guidance Memorandum (TAGM) No. 4046 - "Determination of Soil Cleanup Objectives and Cleanup Levels" has been selected as the soil screening criteria (i.e., Standards, Criteria and Guidelines [SCGs]) for the Investigation Sampling Program. As a result, the Recommended Soil Cleanup Objectives listed in TAGM 4046 have been established as screening criteria for VOCs and SVOCs. The Recommended Soil Cleanup Objectives listed for Total PCBs of 1 part per million (ppm) for surface soil and 10 ppm for subsurface soil have been established as screening criteria. It should be noted that, in

accordance with the NYSDOH, surface soil has been determined to include both the 0 to 2-inch soil samples and the 2-inch to 2-foot soil samples; i.e., "surface soil" corresponds to the first two feet of soil below grade. In addition, the Eastern USA Background Levels listed in TAGM 4046 have been established as screening criteria for RCRA and TAL metals. It should be noted that criteria listed in the revised draft TAGM 4046 dated April 7, 1995 for cadmium and chromium of 10 ppm and 50 ppm, respectively, have been established as screening criteria for these two metals.

The soil screening criteria described in the preceding paragraph is presented in the right-hand column on the laboratory analytical summary tables for the soil samples (Tables B-1 through B-4) presented in Appendix B. If, for a given compound/constituent, the concentration of the compound/constituent detected in the soil sample exceeds the screening criterion then the compound/constituent concentration has been boxed and bolded on the table.

4.1.2 Groundwater Screening Criteria

The Class GA Groundwater Standards and Guidance Values listed in the NYSDEC Division of Water's Technical and Operational Guidance Series (TOGS) 1.1.1 - "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" have been selected as groundwater screening criteria (i.e., Standards, Criteria and Guidelines [SCGs]) for the Investigation Sampling Program. As a result, the respective Class GA Groundwater Standard or Guidance Value has been established as groundwater screening criteria for each VOC, SVOC, PCB, TAL metal and hexavalent chromium.

The groundwater screening criteria described in the preceding paragraph is presented in the right-hand column on the laboratory analytical summary tables for the groundwater samples (Tables B-5 through B-8) presented in Appendix B. If, for a given compound/constituent, the concentration of the compound/constituent detected in the groundwater sample exceeds the screening criterion then the compound/constituent concentration has been boxed and bolded on the table.

4.2 Data Validation

Surface soil, subsurface soil and groundwater samples were collected during the Investigation Sampling Program conducted within the Town of Oyster Bay Bethpage Community Park during May, June, September and November 2003. The majority of the soil samples were analyzed for PCBs, RCRA/TAL metals and hexavalent chromium. In addition, several of the soil samples were analyzed for VOCs and SVOCs. All of the groundwater samples were analyzed for VOCs, SVOCs, PCBs, TAL metals (total and dissolved) and hexavalent chromium (total and dissolved), with the exception of those collected on September 12 and November 25 and 26, 2003 which were analyzed for VOCs only.

All sample analyses were performed by Mitkem Corporation, a subcontractor to Dvirka and Bartilucci Consulting Engineers (D&B), in accordance with the Site-Specific Work Plan, USEPA SW-846 methods and NYSDEC 6/00 Analytical Services Protocol (ASP) Quality Assurance/Quality Control (QA/QC) requirements. The data packages submitted by Mitkem Corporation have been reviewed for completeness and compliance with the specified methods and validated in accordance with NYSDEC QA/QC requirements. All of the environmental sample results as well as all of the QA/QC samples have been reviewed for transcription and/or calculation errors and contractual compliance to yield a "100% Validation." Data validation summary forms have been prepared for each data package and copies are provided in Appendix C of this report. The findings of the validation process are summarized below.

All samples were analyzed within the method specified holding times with the exception of several re-extractions.

The SVOC fraction for sample B-7 (12'-14') was re-extracted outside of its holding time since all of the surrogate recoveries in the initial extract were outside QC limits. The data from the re-extract is considered the "best set" and is included on the data summary tables.

Several of the VOC samples (i.e., B-7 [6'-8'], B-7 [8'-10'], B-7 [10'-12'], B-7 [12'-14'] and B-7 [16'-18']) were analyzed at medium level due to the high concentrations of several compounds present in the samples.

The acetone result for sample B-19 (8'-10') slightly exceeded the instrument calibration range. Since the sample was not reanalyzed at a secondary dilution, the result has been qualified as estimated.

The laboratory noted that the following samples exhibited fuel product contamination: B-2 (6'-8'), B-6 (4'-6'), B-6 (12'-14'), B-6 (18'-20'), B-11 (10'-12') and B-11 (18'-20').

Samples B-2 (6'-8') and B-2 (10'-11') had percent moistures greater than 50% and sample B-23 (0-2") had a percent moisture of 46%. The analytical results for both of these samples have been qualified as estimated, possibly biased high.

Several samples required reanalysis due to surrogate recoveries and/or internal standard area counts being outside QC limits. Both sets of data were included in the data packages and have been reviewed to determine which set was the most contractually compliant. The results of the analysis which were considered as the "best set" have been included on the data summary tables.

Soil sample BCPMW-3 (2'-4') was initially sampled on June 5, 2003, and analyzed for PCBs, TAL metals and hexavalent chromium. However, since this sample interval was supposed to be analyzed for VOCs and SVOCs also, the sample interval was resampled on June 10, 2003, and analyzed for VOCs and SVOCs only.

Methylene chloride has been qualified as nondetect in several samples due to laboratory contamination. That is, the method blanks associated with the qualified samples also contained methylene chloride and the sample result was less than ten times the blank result. The affected sample results have been qualified with the "U*" qualifier on the data summary tables. If the

sample result was greater than ten times the blank result, than the result was qualified with the "J*" qualifier on the data summary tables.

Bis(2-ethylhexyl)phthalate has been qualified as nondetect in several samples due to laboratory contamination. That is, the method blanks associated with the qualified samples also contained bis(2-ethylhexyl)phthalate and the sample result was less than ten times the blank result. The affected sample results have been qualified with the "U*" qualifier on the data summary tables.

Two groundwater samples, BCPMW-2 and BCPMW-3, collected on September 12, 2003 were reanalyzed at secondary dilutions due to compound concentrations exceeding the instrument calibration range during the initial analysis. The analytical results for the affected compounds have been taken from the diluted analysis and are flagged with the "D" qualifier on the data summary tables.

The methylene chloride results for samples BCPMW-1 and B24MW-2, collected on November 25, 2003 and November 26, 2003, respectively, have been qualified as nondetect due to field blank contamination.

Samples BCPMW-2 and BCPMW-3, collected on November 25, 2003, were initially analyzed at 1:2 and 1:40 dilutions, respectively, due to the concentrations of targeted compounds detected. Since the samples were run at dilutions, low concentrations of some target compounds may have been diluted out of these samples. Sample BCPMW-3 was reanalyzed at a 1:100 dilution due to the high concentration of cis-1,2-dichloroethene detected in the sample. The result for this compound has been taken from the 1:100 dilution and flagged "D" on the data summary tables.

No other problems were found with the sample results. All results have been deemed valid and usable for environmental assessment purposes as qualified above.

4.3 Boring Logs

During the course of the Investigation Sampling Program undertaken within the Town of Oyster Bay Bethpage Community Park, a D&B geologist characterized the soil collected from each sample interval in the soil borings and noted all observations in a bound field log book. The observations recorded by the geologist have been transcribed onto boring logs for each of the 28 soil borings advanced during the Investigation Sampling Program. These boring logs are presented as Appendix D of this report.

4.4 Summary of Analytical Results

The sections which follow provide a summary of the analytical results of the soil and groundwater samples collected from the Town of Oyster Bay Bethpage Community Park during the Investigation Sampling Program.

4.4.1 Soil Samples

Due to the number of samples collected from the soil borings advanced within the Bethpage Community Park during the Investigation Sampling Program, it has been determined that the best manner in which to summarize the laboratory data is to present the data graphically. As a result, three figures have been created to summarize the individual compound/constituent concentrations which exceeded the soil screening criteria. These figures are presented as follows:

Figure No.	Area/Location Summarized
4-1	Baseball Field
4-2	Boring B-1
4-3	South Playground Area

SHUFFLEBOARD

B-2
0–2" Cr (89.3)
2"–2' PCB (3.48), Cr (82.3)
2'–4' As (21.8), Cd (17.1), Cr (428), Hg (0.34)
4'–6' Cr (270), Hg (0.38)
6'–8' BAA (2,000), Chr (3,000), BBF (2,800), BKF (1,400), BAP (1,900), CaPAH (10,000), DA (190), Cr (1,780), Cu (1,420), Hg (5.2), Ni (88.3), Zn (4,820)
8'–10' Cd (23.3), Cr (494), Hg (0.49)
10'–11' Cd (90.2), Cr (1,260), Hg (3), Se (5)
11'–12' none
12'–14' none

P-39 B-2

bit.

bit.

BASKETBALL

grass grass

P-36 B-4

B-4
0–2" Cr (69)
2"–2' PCB (1.52), Cr (114)
2'–3' Cr (105), Zn (145)
3'–4' none
4'–6' none
6'–8' none
8'–10' none
10'–12' none

grass

EP-15

EP-14

HORSESHOES

B-3

B-3
0–2" PCB (1.76), Cr (135)
2"–2' PCB (1.5), Cr (193)
2'–4' BAP (63), Cr (62), Zn (331)
4'–6' none
6'–8' none
8'–10' none
12'–14' none

conc.

BCPMW-1
grass

BCPMW-1
0–2" none
2"–2' none
2'–4' none
4'–6' none
6'–8' none
8'–10' none
10'–12' none

EP-23

P-35

B-6
0–2" PCB (3.6), Cd (14), Cr (539)
2"–2' PCB (92), Cd (17.5), Cr (629), Hg (0.68), Cr(VI) (76.1)
2'–4' PCB (36), As (36), Cr (132)
4'–6' BAA (560), Chr (610), BAP (540), DA (88), PCB (34), Cd (32.3), Cr (1,230)
8'–10' PCB (15), Cr (50.3)
10'–12' PCB (32), Cr (234), Zn (130)
12'–14' BAA (840), Chr (900), BAP (720), DA (130), PCB (18), Cr (196) Zn (116)
14'–16' none
16'–18' none
18'–20' none

B-6

EP-27

P-34 B-5

B-5
8'–10' PCB (11)
10'–12' PCB (66), Cd (126), Cr (2,500), Hg (0.5)
12'–14' Ace (300), BAA (1,200), Chr (1,500), BBF (1,400), BAP (920), DA (180), PCB (115), Cd (13.2), Cr (227), Cu (92.7), Zn (251)
14'–16' PCB (68), Cd (70.5), Cr (1,390), Hg (0.28)
16'–18' PCB (121), Cd (13.8), Cr (293)
18'–20' Cd (136), Cr (1,100)
20'–22' none

bit.

B-7

B-7
0–2" Cr (76.9), Hg (0.25)
2"–2' PCB (18.78), Cd (12.1), Cr (579)
2'–4' BAA (350), BAP (320), PCB (11), Cr (532)
4'–6' Cr (111), Cu (60.7), Zn (107)
6'–8' Tol (14,000), Xy (6,200), VOC (32,350), BAP (180), Cr (524)
8'–10' Tol (19,000), Xy (6,400), VOC (37,980), BAA (390), Chr (500), BAP (350), DA (59), PCB (12), Cr (3,130), Zn (832)
10'–12' Tol (1,800), Xy (4,300), VOC (15,560), Cd (91.4), Cr (2,430)
12'–14' Tol (16,000), Xy (5,400), VOC (33,890), PCP (8,800), Cd (382), Cr (9,130), Hg (1.2)
14'–16' Cd (414), Cr (10,000), Cu (830), Hg (1.7), Ni (301), Zn (2,830)
16'–18' Tol (6,800), Xy (1,800), VOC (17,720), PCP (6,400), Cd (119), Cr (4,690), Hg (0.3)
18'–20' Cd (515), Cr (9,350), Hg (0.72)
20'–22' Cd (30.7), Cr (173)
22'–24' Cd (13.7)

B-8

B-8
0–2" Cr (84.8)
2"–2' PCB (1.22), Cr (66.1), Hg (0.27)
2'–4' none
4'–6' Zn (51.6)
6'–8' Cr (100)
8'–10' none
10'–12' none

P-30 P-31 P-32

B-9
8'–10' none
10'–12' none
12'–14' none
14'–16' none
16'–18' none
20'–22' none
22'–24' none
24'–26' none

B-10

B-10
0–2" Hg (0.23)
2"–2' PCB (1.4)
2'–4' none
6'–8' none
8'–10' none
10'–12' none

grass

BASEBALL FIELD

B-11

B-11
0–2" Cr (149), Hg (0.26)
2"–2' Cr (107)
2'–4' Cr (54.8)
4'–6' Cr (69.4)
6'–8' Cr (53.8)
8'–10' Cr (289), Hg (0.26)
10'–12' none
12'–14' none
14'–16' none
16'–18' none
18'–20' none

P-26 P-27 P-28

B-12

B-12
8'–10' Cr (56.4)
10'–12' PCB (20.6), Cr (83.3)
12'–14' PCB (25.7), Cr (126), Cu (64), Hg (0.26) Ni (25.1), Zn (161)
14'–16' PCB (13), Cr (94.2)
16'–18' BAA (1,900), Chr (1,800), BBF (2,300), BAP (1,700), DA (280), PCB (120), Cr (664)
18'–20' PCB (82), Cd (15.2), Cr (496), Cu (75.2), Hg (0.32), Zn (356)
20'–22' BAA (1,500), Chr (1,600), BBF (2,200), BAP (1,600), DA (220), PCB (69), Cd (22.8), Cr (306), Hg (0.21)
22'–24' PCB (71), Cd (12.8), Cr (376), Hg (0.22)
25'–26' none
28'–28' Cr (68.8)

B-13

B-13
8'–10' PCB (15), Cr (53.5), Zn (52)
10'–12' PCB (27)
12'–14' PCB (36), Cr (111), Hg (0.21)
14'–16' PCB (100), Cd (15.4), Cr (325)
16'–18' PCB (22.2), Cr (83.2), Pb (708), Hg (0.24)
18'–20' BAA (1,500), Chr (1,600), BBF (2,300), BAP (1,600), DA (200) PCB (31), Cd (11.4), Cr (261), Mg (11,100), Zn (202)
20'–22' PCB (67), Cr (125)
22'–24' none
24'–26' none

B-14

B-14
8'–10' none
10'–12' none
12'–14' none

B-15

B-15
0–2" As (27.9), Hg (0.21)
2"–2' As (17.5)
4'–6' none
6'–8' none
8'–10' none
10'–12' PCB (11)

B-16

B-16
0–2" PCB (79)
2"–2' Cr (131)
2'–4' none
4'–6' none
6'–8' none
8'–10' none
10'–12' none
12'–14' none
14'–16' none

B-17

B-17
0–2" none
2"–2' none
2'–4' BAA (730), Chr (680), BAP (560), DA (110), PCB (56), Cr (157), Cu (53), Zn (142)
4'–6' BAA (2,400), Chr (2,200), BBF (1,700), BAP (1,200), DA (240) PCB (69), Cr (150), Hg (0.24)
6'–8' BAA (1,600), Chr (1,400), BBF (1,700), BAP (1,200), DA (230) PCB (16), Cd (61.6), Cr (815), Hg (0.25)
8'–10' PCB (61), Cd (18.3), Cr (241)
10'–12' PCB (19), Cr (169)
12'–14' BAA (2,500), Chr (2,300), BBF (2,400), BAP (1,700), DA (340), CaPAH (11,200), PCB (35), Cd (10.8), Cr (191)
14'–16' BAA (1,400), Chr (1,400), BBF (1,500), BAP (1,000), DA (180) PCB (50), Cr (97.9), Cu (74.7), Zn (130)
16'–18' BAA (1,200), Chr (1,300), BBF (1,500), BAP (920), DA (190), PCB (70), Cr (101), Hg (0.32)
18'–20' PCB (28), Cr (474)
20'–22' Cr (147)
22'–24' PCB (22), Cr (138), Cu (52.1), Zn (243)
24'–26' PCB (18), Cr (142), Hg (0.36)
28'–30' none
30'–32' PCB (23)
32'–34' PCB (25), Cr (154)
34'–36' none

EP-3 EP-4

B-18

B-18
0–2" Cr (539)
2"–2' PCB (1.55), Cr (54.2)
2'–4' BAA (450), Chr (490), BAP (440), DA (230) Cr (123)
4'–6' Cr (268)
6'–8' Cr (85.5)
8'–10' none
10'–12' none
12'–14' none

P-19 P-20 P-21

B-19
8'–10' Ace (220), BAA (860), Chr (990), BAP (700), DA (150), PCB (24), Cr (620), Hg (0.25)
10'–12' PCB (34), Cd (22.7), Cr (375), Cu (56.1), Zn (232)
12'–14' 4MP (1,100), BAA (1,100), Chr (1,100), BAP (620), DA (150), PCB (14), Cr (153)
16'–18' BAA (1,400), Chr (1,300), BBF (1,400), BAP (910), DA (170), PCB (45), Cr (137), Hg (0.29)
18'–20' BAA (1,500), Chr (1,600), BBF (1,500), BAP (1,200), DA (240), PCB (24), Cd (10.3), Cr (287), Cu (66.1), Hg (0.21), Zn (294)
22'–24' Cr (143)
24'–26' PCB (14), Cr (148), Zn (143)
26'–27' PCB (14), Cr (313)
27'–28' none
28'–30' none

B-22

B-22
4'–6' BAA (480), Chr (610), BAP (530), DA (94)
6'–8' BAA (1,000), Chr (1,400), BBF (1,400), BAP (900)
8'–10' Ph (270), BAA (1,800), Chr (1,800), BBF (2,500), BAP (1,700), DA (290), PCB (24.5), Cr (111), Hg (0.32)
10'–12' 1,1-DCA (490), Tol (1,900), Xy (3,000), VOC (10,345), Ph (760), BAA (1,400), Chr (1,600), BBF (2,100) BAP (1,300), PCB (12.6), Cr (99.1), Cu (64.9), Mg (5,310), Hg (0.33), Zn (97.1)
12'–14' Ph (1,600), 4MP (1,700), Chr (1,800), BBF (2,700), BAP (1,300), DA (280), PCB (28.9), Cr (116), Hg (0.27)
14'–16' Ph (920), BAA (800), Chr (930), BBF (1,200), BAP (800), DA (130), PCB (10.7), Cr (95.7)
16'–18' Ph (720), 4MP (930), BAA (1,000), Chr (1,100), BBF (1,400), BAP (1,000), DA (220), PCB (21.8), Cd (11), Cr (183), Hg (0.58)
18'–20' Cr (150), Zn (143)
20'–22' Cr (247)
22'–24' Cd (14.9), Cr (312), Hg (0.21)
25'–26' none
28'–30' none

BCPMW-3

BCPMW-3
0–2" PCB (1.21), Cr (74.7)
2"–2' PCB (1.98)
2'–4' BAA (320), BAP (230), DA (54), Ba (735), Cd (26.6), Cr (4,730), Cu (286), Pb (955), Hg (12), Ni (33.3), Zn (2,640)
4'–6' Cr (119)
6'–8' none
8'–10' none
10'–12' none

EP-1 EP-2

P-60 B-20

B-20
6'–8' BAA (1,900), Chr (1,900), BBF (2,200), BAP (1,500), DA (100)
8'–10' BAA (1,000), Chr (970), BAP (730), DA (150), PCB (16), Cr (99.1), Hg (0.22), Zn (124)
10'–12' BAA (770), Chr (950), BAP (690), DA (170), PCB (19), Cr (112)
12'–14' 4MP (1,100), BAA (1,400), Chr (1,500), BBF (1,500), BAP (1,200), DA (260), PCB (19), Cr (97.2), Hg (0.3)
14'–16' BAA (1,600), Chr (1,600), BBF (1,500), BAP (1,100), DA (240), PCB (46), Cr (210.3), Hg (0.26), Zn (94.3)
16'–18' 4MP (1,200), BAA (800), Chr (930), BAP (660), DA (180), PCB (20), Cr (144), Hg (0.24)
18'–20' 4MP (930), BAA (680), Chr (770), BAP (550), DA (120), PCB (41), Cr (144.2), Hg (0.21)
22.5'–24' none
24'–26' none

bit.

BCPMW-2

BCPMW-2
0–2" Cr (56.7)
2"–2' Cr (124)
2'–4' Cr (210), Zn (113)
4'–6' Cr (56.5)
6'–8' none
8'–10' none
10'–12' none

grass

B-21

B-21
0–2" none
2"–2' Cr (59.6)
2'–4' Cr (107)
4'–6' Cr (78.4)
6'–8' none
8'–10' none
10'–12' none

P-1 P-2 P-3 P-4

LEGEND:

PROPERTY LINE

FENCE

PREVIOUS SOIL PROBE LOCATION (ADVANCED TO A DEPTH OF 8 FEET BELOW GRADE – MARCH 2002)

PREVIOUS EXPOSURE POINT SAMPLING LOCATION (COLLECTED FROM THE 0–2" DEPTH INTERVAL – MARCH 2002 (EP–1 THROUGH EP–19) OR MAY 2002 (EP–20 THROUGH EP–27))

SOIL BORING LOCATION

MONITORING WELL LOCATION

NOTES:

1. ALL VOC AND SVOC ANALYTICAL RESULTS REPORTED IN UNITS OF UG/KG (PPB). ALL METAL AND PCB ANALYTICAL RESULTS REPORTED IN UNITS OF MG/KG (PPM).

2. ONLY ANALYTICAL RESULTS IN EXCESS OF THE SOIL SCREENING LEVELS ARE PRESENTED.

3. COLORS:
PINK – PCB EXCEEDANCE
ORANGE – CHROMIUM EXCEEDANCE
GREEN – RCRA METAL EXCEEDANCE (OTHER THAN CHROMIUM)
BLUE – VOC OR SVOC EXCEEDANCE

4. DEPTH INTERVALS DENOTED IN BLUE INDICATE SOIL SAMPLES ANALYZED FOR VOCs AND SVOCs.

ABBREVIATIONS:

As – Arsenic
Ba – Barium
Cd – Cadmium
Cr – Chromium
Cu – Copper
Pb – Lead
Mg – Magnesium
Hg – Mercury
Ni – Nickel
Se – Selenium
Zn – Zinc

Ace – Acetone
1,1-DCA – 1,1–Dichloroethane
Tol – Toluene
Xy – Xylene
BAA – Benzo(a)anthracene
BAP – Benzo(a)pyrene
BBF – Benzo(b)fluoranthene
BKF – Benzo(k)fluoranthene
Chr – Chrysene
DA – Dibenzo(a,h)anthracene
4MP – 4–Methylphenol
PCP – Pentachlorophenol
Ph – Phenol

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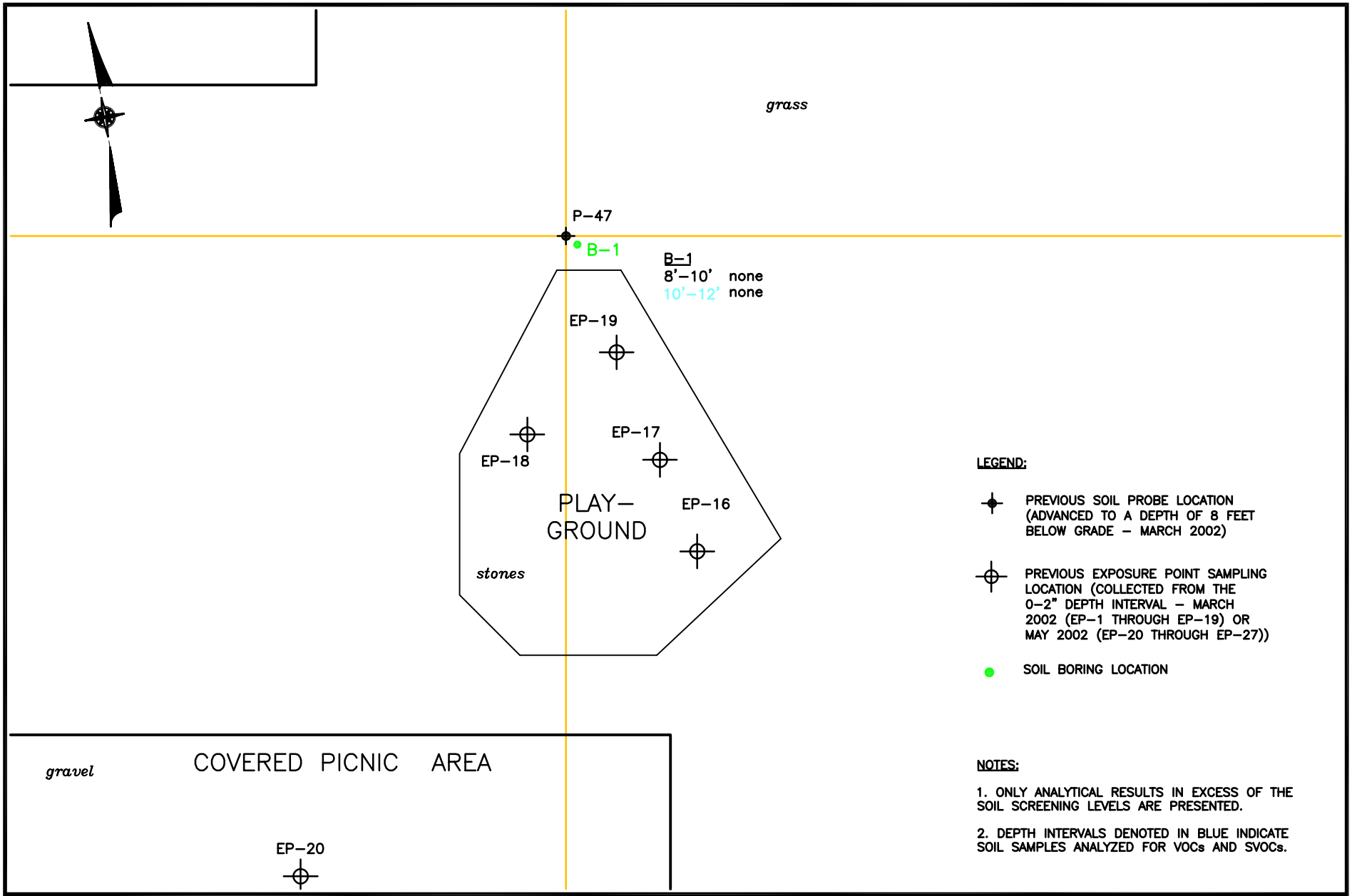
BASEBALL FIELD
SUMMARY OF EXCEEDANCES

SCALE: 1" = 15'

FIGURE 4-1



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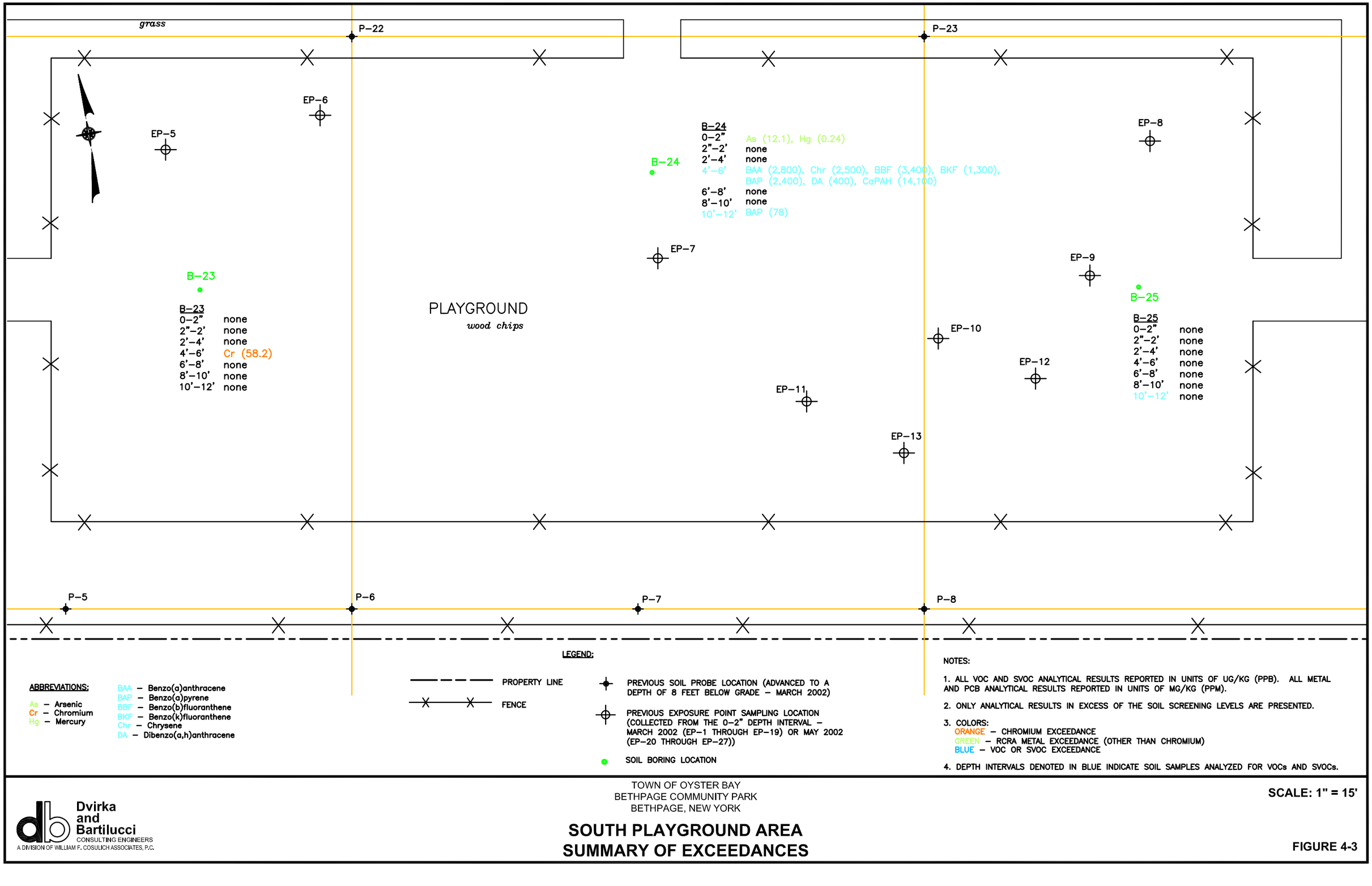
BORING B-1
SUMMARY OF EXCEEDANCES

SCALE: 1" = 15'

FIGURE 4-2



ABBREVIATIONS:

As – Arsenic
Cr – Chromium
Hg – Mercury

BAA – Benzo(a)anthracene
BAP – Benzo(a)pyrene
BBF – Benzo(b)fluoranthene
BKF – Benzo(k)fluoranthene
Chr – Chrysene
DA – Dibenzo(a,h)anthracene

LEGEND:

PROPERTY LINE

FENCE

PREVIOUS SOIL PROBE LOCATION (ADVANCED TO A DEPTH OF 8 FEET BELOW GRADE – MARCH 2002)

PREVIOUS EXPOSURE POINT SAMPLING LOCATION (COLLECTED FROM THE 0–2" DEPTH INTERVAL – MARCH 2002 (EP–1 THROUGH EP–19) OR MAY 2002 (EP–20 THROUGH EP–27))

SOIL BORING LOCATION

NOTES:

1. ALL VOC AND SVOC ANALYTICAL RESULTS REPORTED IN UNITS OF UG/KG (PPB). ALL METAL AND PCB ANALYTICAL RESULTS REPORTED IN UNITS OF MG/KG (PPM).
2. ONLY ANALYTICAL RESULTS IN EXCESS OF THE SOIL SCREENING LEVELS ARE PRESENTED.
3. COLORS:
   ORANGE – CHROMIUM EXCEEDANCE
   GREEN – RCRA METAL EXCEEDANCE (OTHER THAN CHROMIUM)
   BLUE – VOC OR SVOC EXCEEDANCE
4. DEPTH INTERVALS DENOTED IN BLUE INDICATE SOIL SAMPLES ANALYZED FOR VOCs AND SVOCs.

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SOUTH PLAYGROUND AREA
SUMMARY OF EXCEEDANCES

SCALE: 1" = 15'

FIGURE 4-3

Again, it should be noted that only the analytical results for soil samples which exhibited a compound/constituent concentration in excess of the soil screening criteria are provided on the figures. A complete set of all of the analytical results for the soil samples are provided on Tables B-1 through B-4 provided in Appendix B of this report.

Please note that all VOC and SVOC analytical results presented on the figure are reported in units of ug/kg (ppb). In addition, all PCB and metal analytical results presented on the figures are reported in units of mg/kg (ppm). If "none" is listed adjacent to a particular sample interval on the figures, it indicates that none of the compounds/constituents analyzed for in that soil sample exceeded their respective soil screening criterion.

The analytical results of the soil samples presented on the figures have been color coded to assist in the review of the data. As such, soil sample results presented in pink represent PCB concentrations detected in excess of the soil screening criteria; soil sample results presented in orange represent chromium concentrations detected in excess of the soil screening criteria; soil sample results presented in green represent RCRA metal concentrations (other than chromium) detected in excess of the soil screening criteria; and, soil sample results presented in blue represent VOC or SVOC concentrations detected in excess of the soil screening criteria. In addition to the above, any sample interval presented in blue indicates an interval where the soil samples were analyzed for VOCs and SVOCs, regardless of whether any compound/constituent exceeded its respective soil screening criterion.

It should be noted that due to the complex nomenclature of a number of the compounds/constituents presented on the figures, abbreviations have been utilized to conserve space. A list of the applicable abbreviations is presented on each figure.

Please note that the analytical results presented on the figures for BCPMW-1, BCPMW-2 and BCPMW-3 are for the soil samples collected from that boring only; groundwater sample results are not presented on these figures.

4.4.2 Groundwater Samples

Groundwater samples were collected from Bethpage Community Park monitoring wells BCPMW-1, BCPMW-2 and BCPMW-3 during the Investigation Sampling Program. The location of these three monitoring wells are shown on Figure 3-1 of this report.

As mentioned previously, groundwater samples were collected from the three Bethpage Community Park monitoring wells on three separate dates, June 19, September 12 and November 25, 2003. In addition, groundwater samples were collected from three off-site monitoring wells located immediately adjacent to the Bethpage Community Park (identified as B24MW-2, B24MW-3 and B30MW-1) on November 26, 2003. The analytical results of the groundwater samples and the rationale for resampling the park wells and sampling the three off-site wells is discussed in the following sections.

4.4.2.1 - June 19, 2003 Groundwater Sampling Event

Groundwater samples were collected from Bethpage Community Park monitoring wells BCPMW-1, BCPMW-2 and BCPMW-3 during the Investigation Sampling Program on June 19, 2003. The procedures utilized to collect these groundwater samples is discussed in Section 3.0 of this report.

All groundwater samples collected on June 19, 2003, were analyzed for VOCs, SVOCs, PCBs, TAL metals (total and dissolved) and hexavalent chromium (total and dissolved). The analytical results of these groundwater samples are presented on Tables B-5 through B-8 provided in Appendix B of this report and are summarized as follows:

Groundwater Samples BCPMW-1, BCPMW-2 and BCPMW-3

- All VOCs analyzed for were either not detected or were detected at concentrations below the Class GA Groundwater Standards/Guidance Values with the exception of the following:

- 1,1-Dichloroethane was detected at a concentration of 18 ug/l in groundwater sample BCPMW-2 which exceeds the Class GA Groundwater Standard of 5 ug/l.

- cis-1,2-Dichloroethene was detected at concentrations of 120 ug/l and 5,300 ug/l in groundwater samples BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.

- Trichloroethene was detected at concentrations of 83 ug/l, 230 ug/l and 620 ug/l in groundwater samples BCPMW-1, BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.

- All SVOCs analyzed for were not detected.

- All PCBs analyzed for were not detected.

- All TAL metals and hexavalent chromium analyzed for were either not detected or were detected at concentrations below the Class GA Groundwater Standards/ Guidance Values with the exception of the following:

  - Antimony was detected at a concentration of 3.8 ug/l in groundwater sample BCPMW-2 which exceeds the Class GA Groundwater Standard of 3 ug/l.

  - Arsenic was detected at concentrations of 52.4 ug/l, 113 ug/l and 81.5 ug/l in groundwater samples BCPMW-1, BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 25 ug/l.

  - Chromium was detected at concentrations of 102 ug/l and 93.3 ug/l in groundwater samples BCPMW-1 and BCPMW-2, respectively, which exceed the Class GA Groundwater Standard of 50 ug/l.

  - Iron was detected at concentrations of 67,800 ug/l, 111,000 ug/l and 61,300 ug/l in groundwater samples BCPMW-1, BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 300 ug/l.

  - Dissolved iron was detected at a concentration of 463 ug/l in groundwater sample BCPMW-3 which exceeds the Class GA Groundwater Standard of 300 ug/l.

  - Lead was detected at concentrations of 41.9 ug/l, 72.6 ug/l and 31.4 ug/l in groundwater samples BCPMW-1, BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 25 ug/l.

  - Manganese was detected at concentrations of 302 ug/l and 377 ug/l in groundwater samples BCPMW-1 and BCPMW-2, respectively, which exceed the Class GA Groundwater Standard of 300 ug/l.

- Sodium was detected at concentrations of 24,500 ug/l and 27,500 ug/l in groundwater samples BCPMW-1 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 20,000 ug/l.

- Dissolved sodium was detected at concentrations of 21,700 ug/l and 23,700 ug/l in groundwater samples BCPMW-1 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 20,000 ug/l.

- Thallium was detected at a concentration of 10.3 ug/l in groundwater sample BCPMW-2 which exceeds the Class GA Groundwater Guidance Value of 0.5 ug/l.

- Total iron and manganese was detected at concentrations of 68,102 ug/l, 111,377 ug/l and 61,521 ug/l in groundwater samples BCPMW-1, BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 500 ug/l.

- Dissolved total iron and manganese was detected at a concentration of 594 ug/l in groundwater sample BCPMW-3 which exceeds the Class GA Groundwater Standard of 500 ug/l.

4.4.2.2 - September 12, 2003 Groundwater Sampling Event

Due to the concentrations of 1,1-dichloroethane, cis-1,2-dichloroethene and trichloroethene detected in the groundwater samples collected from BCPMW-2 and BCPMW-3 on June 19, 2003, it was determined that all three monitoring wells located within the Bethpage Community Park should be resampled in order to confirm the presence and concentrations of these compounds in the groundwater.

As a result, monitoring wells BCPMW-1, BCPMW-2 and BCPMW-3 were resampled during the Investigation Sampling Program on September 12, 2003. The procedures utilized to collect these groundwater samples is discussed in Section 3.0 of this report.

All groundwater samples collected on September 12, 2003 were analyzed for VOCs only. The analytical results of these samples are presented on Table B-5 provided in Appendix B of this report and are summarized as follows:

Groundwater Samples BCPMW-1, BCPMW-2 and BCPMW-3

- All VOCs analyzed for were either not detected or were detected at concentrations below the Class GA Groundwater Standards/Guidance Values with the exception of the following:

  – Vinyl chloride was detected at a concentration of 6 ug/l in groundwater sample BCPMW-3 which exceeds the Class GA Groundwater Standard of 2 ug/l.

  – 1,1-Dichloroethene was detected at a concentration of 11 ug/l in groundwater sample BCPMW-3 which exceeds the Class GA Groundwater Standard of 5 ug/l.

  – 1,1-Dichloroethane was detected at concentrations of 18 ug/l and 10 ug/l in groundwater samples BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.

  – cis-1,2-Dichloroethene was detected at concentrations of 6 ug/l, 150 ug/l and 2,900 ug/l in groundwater samples BCPMW-1, BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.

  – 1,1,1-Trichloroethane was detected at a concentration of 6 ug/l in groundwater sample BCPMW-3 which exceeds the Class GA Groundwater Standard of 5 ug/l.

  – Trichloroethene was detected at concentrations of 76 ug/l, 280 ug/l and 760 ug/l in groundwater samples BCPMW-1, BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.

4.4.2.3 - November 25 and 26, 2003 Groundwater Sampling Event

Due to the concentrations of certain chlorinated VOCs detected in the groundwater samples collected from BCPMW-2 and BCPMW-3 on June 19, 2003 and September 12, 2003, it was determined that three off-site monitoring wells located immediately adjacent to the Bethpage Community Park should be sampled in order to assist in determining the source of these chlorinated VOCs. These three monitoring wells are identified as B24MW-2, B24MW-3 and B30MW-1 and located as shown on Figure 3-1 presented in Section 3.0 of this report. In addition, in order to confirm the presence and concentrations of the previously detected chlorinated VOCs in the groundwater, it was determined that on-site monitoring wells BCPMW-1, BCPMW-2 and BCPMW-3 should be resampled.

As a result, groundwater samples were collected from on-site monitoring wells BCPMW-1, BCPMW-2 and BCPMW-3 and off-site monitoring wells B24MW-2, B24MW-3 and B30MW-1 during the Investigation Sampling Program on November 25 and 26, 2003. The procedures utilized to collect these groundwater samples is discussed in Section 3.0 of this report.

It should be noted that since off-site monitoring wells B24MW-2, B24MW-3 and B30MW-1 had not been developed or sampled since their installation in early 1994, it was decided that these three wells should be redeveloped prior to sampling. A description of the well developing activities is provided in Section 3.0 of this report.

All groundwater samples collected on November 25 and 26, 2003 were analyzed for VOCs only. The analytical results of these samples are presented on Table B-5 provided in Appendix B of this report and are summarized as follows:

Groundwater Samples BCPMW-1, BCPMW-2, BCPMW-3, B24MW-2, B24MW-3 and B30MW-1

- All VOCs analyzed for were either not detected or were detected at concentrations below the Class GA Groundwater Standards/Guidance Values with the exception of the following:
  - Vinyl chloride was detected at a concentration of 70 ug/l in groundwater sample BCPMW-3 which exceeds the Class GA Groundwater Standard of 2 ug/l.
  - 1,1-Dichloroethene was detected at a concentration of 44 ug/l in groundwater sample BCPMW-3 which exceeds the Class GA Groundwater Standard of 5 ug/l.
  - 1,1-Dichloroethane was detected at concentrations of 16 ug/l and 18 ug/l in groundwater samples BCPMW-2 and BCPMW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.
  - cis-1,2-Dichloroethene was detected at concentrations of 120 ug/l, 5,200 ug/l and 6 ug/l in groundwater samples BCPMW-2, BCPMW-3 and B24MW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.

- Trichloroethene was detected at concentrations of 60 ug/l, 210 ug/l, 1,800 ug/l and 54 ug/l in groundwater samples BCPMW-1, BCPMW-2, BCPMW-3 and B24MW-3, respectively, which exceed the Class GA Groundwater Standard of 5 ug/l.

4.5 Groundwater Contour Map

In order to determine the current flow direction of groundwater beneath the Town of Oyster Bay Bethpage Community Park, a groundwater contour map has been prepared for the site. The map was prepared based on measurements recorded from the three monitoring wells installed within the Bethpage Community Park during the Investigation Sampling Program (i.e., BCPMW-1, BCPMW-2 and BCPMW-3). In addition, in order to provide additional information and increase the reliability of the groundwater elevation contour lines and the calculated groundwater flow direction, depth to water measurements were collected from three nearby existing off-site monitoring wells located immediately adjacent to the Bethpage Community Park. These three off-site monitoring wells are identified as B24MW-2, B24MW-3 and B30MW-1. Top of casing elevations of these three nearby existing off-site monitoring wells were surveyed on July 30, 2003 after the three on-site monitoring wells were surveyed.

Depth to groundwater measurements were recorded for monitoring wells BCPMW-1, BCPMW-2, BCPMW-3, B24MW-2, B24MW-3 and B30MW-1 on June 19, 2003. The depth to water measurement collected on June 19, 2003, the top of casing elevation and the calculated groundwater elevation for each monitoring well is summarized on Table 4-1. The groundwater elevation contours and calculated groundwater flow direction are shown on the groundwater contour map for June 19, 2003 provided as Figure 4-4.

Groundwater flow across the Bethpage Community Park site was found to be generally toward the southeast. Groundwater ranged in elevation from 67.23 feet at B24MW-2 to 65.36 feet at BCPMW-3. The hydraulic gradient is approximately 0.005 feet per foot in the northwest portion of the park property and approximately 0.002 feet per foot in the southwest portion of the park property, as calculated from Figure 4-4.

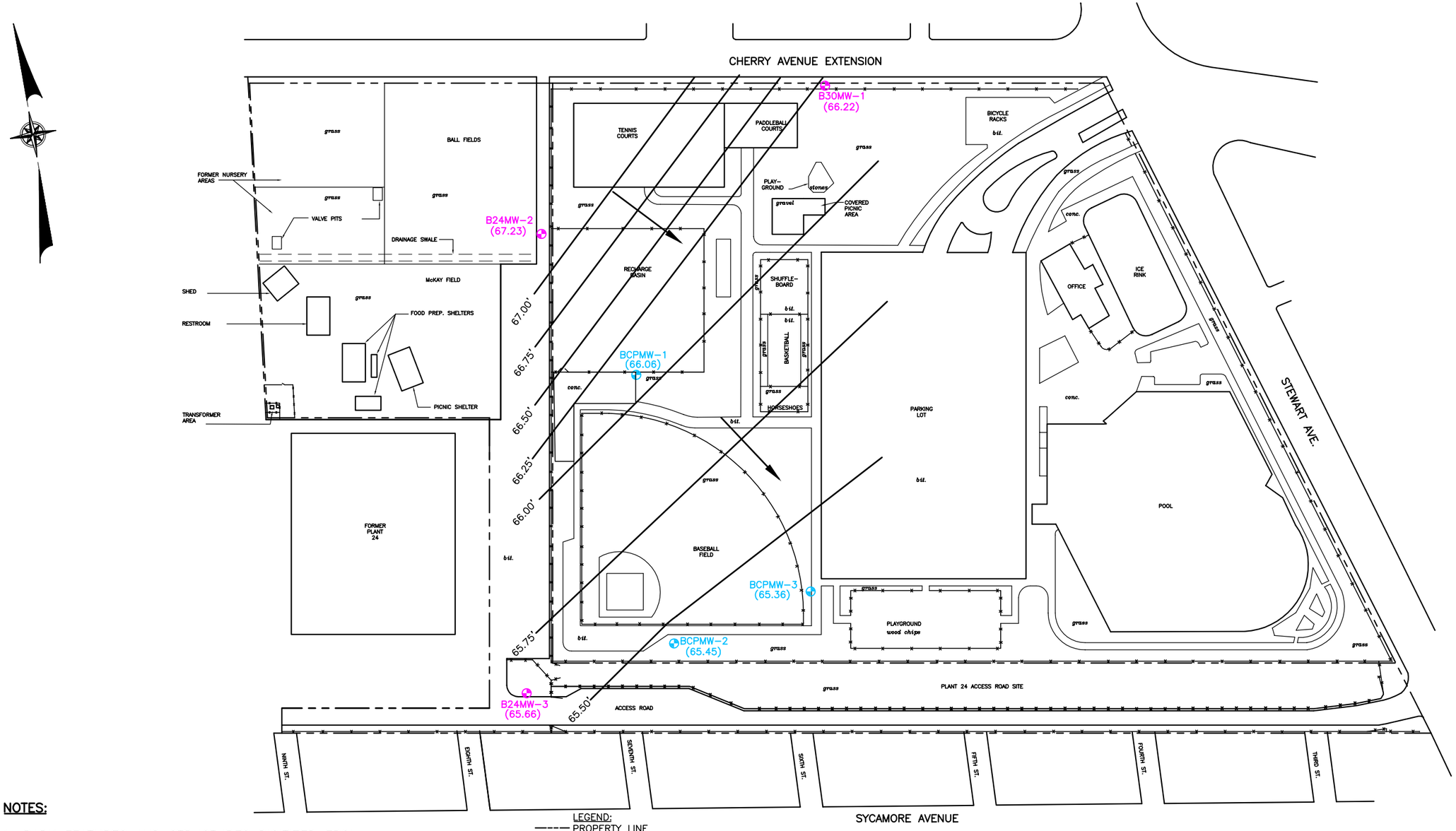
Table 4-1

TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
WATER LEVEL MEASUREMENTS AND
SURVEYED WELL ELEVATIONS

JUNE 2003

Monitoring Well	Top of Casing Elevation (feet)	Depth to Water (feet)	Date Measured	Groundwater Elevation (feet)
BCPMW-1	125.72	59.66	June 19, 2003	66.06
BCPMW-2	126.35	60.90	June 19, 2003	65.45
BCPMW-3	124.96	59.60	June 19, 2003	65.36
B24MW-2	126.94	59.71	June 19, 2003	67.23
B24MW-3	127.06	61.40	June 19, 2003	65.66
B30MW-1	128.32	62.10	June 19, 2003	66.22

Note: Elevations are recorded in feet above mean sea level.



NOTES:

1. PARK FEATURES AND STRUCTURES DIGITIZED FROM A MARCH 14, 1974 AERIAL PHOTOGRAPH.
2. THE APPROXIMATE LOCATIONS AND DIMENSIONS OF THE PARK FEATURES AND STRUCTURES HAVE BEEN FIELD VERIFIED.

LEGEND:
- PROPERTY LINE
- FENCE
- TEMPORARY FENCE
- MONITORING WELL LOCATION
- OFF–SITE MONITORING WELL LOCATION
- 66.50' LINE OF EQUAL GROUNDWATER ELEVATION
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- (65.45) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (msl)

150 75 0 150
SCALE IN FEET

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TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

GROUNDWATER CONTOUR MAP
JUNE 19, 2003

FIGURE 4-4

5.0 CONCLUSIONS

Based upon the findings of the Investigation Sampling Program conducted within the Town of Oyster Bay Bethpage Community Park as presented in Section 4.0 of this report, conclusions are presented in this section.

In support of providing conclusions for the project, the New York State Department of Environmental Conservation's (NYSDEC's) Technical and Administrative Guidance Memorandum (TAGM) No. 4046 - "Determination of Soil Cleanup Objectives and Cleanup Levels" has been selected as the soil screening criteria for the site. As discussed in the introduction to TAGM 4046, the document is designed for use by NYSDEC Project Managers at "…individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites…." TAGM 4046 provides a number of guidelines, including Recommended Soil Cleanup Objectives and Eastern USA Background Levels.

The Bethpage Community Park is not a Federal Superfund or State Superfund site nor is it an RP or 1986 EQBA (Environmental Quality Bond Act) Title 3 property. However, it is reasonable to establish the TAGM 4046 Recommended Soil Cleanup Objectives for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs) and the Eastern USA Background Levels for metals for soil screening criteria for the site. In addition, the proposed revised TAGM 4046 Recommended Soil Cleanup Objectives for cadmium and chromium were established as soil screening criteria for these two metals. The Class GA Groundwater Standards and Guidance Values listed in the NYSDEC Division of Water's Technical and Operational Guidance Series (TOGS) 1.1.1 - "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" have been selected as groundwater screening criteria for the site.

As discussed previously, the purpose of the Investigation Sampling Program is to further characterize the environmental condition of surface and subsurface soil located within the Town of Oyster Bay Bethpage Community Park and to determine whether groundwater quality is

currently being adversely impacted by the site. As such, soil and groundwater samples were collected to assess the environmental condition of the soil and groundwater within the park.

The sections which follow provide conclusions developed from the findings of the soil and groundwater sampling activities.

5.1 Conclusions

The following sections present the conclusions drawn from the findings of the Investigation Sampling Program as separate discussions of soil and groundwater.

5.1.1 Soil

As discussed in Section 3.0 of this report, a total of 231 soil samples were collected from 28 borings advanced during the Investigation Sampling Program undertaken within the Bethpage Community Park between May 27 and June 11, 2003. These soil samples were analyzed for VOCs (71 samples), SVOCs (71 samples), PCBs (228 samples), Resource Conservation and Recovery Act (RCRA) metals (174 samples), Target Analyte List (TAL) metals (54 samples) and hexavalent chromium (228 samples). The analytical results of the soil samples are summarized on Tables B-1 through B-4 provided in Appendix B and shown graphically on Figures 4-1, 4-2 and 4-3 provided in Section 4.0 of this report. As shown on the tables and figures, some of the soil samples exhibited compound/constituent concentrations in excess of the soil screening criteria (i.e., TAGM 4046 Recommended Soil Cleanup Objectives and Eastern USA Background Levels).

The sections which follow present the conclusions as separate discussions of the vertical and horizontal delineation of the contamination detected in the soil samples collected during the Investigation Sampling Program.

5.1.1.1 - Vertical Delineation

As discussed in Section 3.0 of this report, the total depth of each boring was field determined by a trained geologist. Each boring was advanced until two consecutive 2-foot intervals were retrieved which met the following criteria: a boring-specific minimum depth (i.e., 12 or 16 feet below grade depending upon location), undisturbed native soil or a confining layer, and visually unimpacted soil (i.e., soil that did not exhibit signs of staining and/or discoloration) and which did not exhibit photoionization detector (PID) readings above background concentrations. As a result, as noted on the boring logs provided in Appendix D of this report, the deepest two consecutive 2-foot intervals from all 28 borings were "visibly clean" undisturbed native soil which did not exhibit a PID reading above background concentrations.

As presented on Tables B-1 through B-4 provided in Appendix B and shown graphically on Figures 4-1, 4-2 and 4-3 provided in Section 4.0 of this report, of the 28 borings advanced during this program, there are at least two consecutive soil samples without any exceedances of the soil screening criteria at the bottom of 22 borings, one soil sample without any exceedances of the soil screening criteria at the bottom of 2 borings, and a soil sample with only one exceedance of the soil screening criteria at the bottom of the remaining 4 borings.

The four borings which exhibited only one exceedance of the soil screening criteria in the deepest soil sample are borings B-7, B-12, B-15 and B-24. The exceedances detected in the deepest soil sample collected from these borings are summarized as follow:

- Cadmium was detected at a concentration of 13.7 mg/kg in soil sample B-7 (22'-24') which exceeds the soil screening criterion of 10 mg/kg.
- Chromium was detected at a concentration of 68.8 mg/kg in soil sample B-12 (26'-28') which exceeds the soil screening criterion of 50 mg/kg.
- PCBs were detected at a concentration of 11 mg/kg in soil sample B-15 (10'-12') which exceeds the soil screening criterion of 10 mg/kg.
- Benzo(a)pyrene was detected at a concentration of 78 ug/kg in soil sample B-24 (10'-12') which exceeds the soil screening criterion of 61 ug/kg.

The concentrations presented above only slightly exceed their respective soil screening criterion. In addition, the adjacent shallower soil sample in boring B-12 (i.e., B-12 [25'-26']), the three adjacent shallower soil samples in boring B-15 (i.e., B-15 [4'-6'], B-15 [6'-8'] and B-15 [8'-10']) and the two adjacent shallower soil samples in boring B-24 (i.e., B-24 [6'-8'] and B-24 [8'-10']) did not exhibit any compound/constituent concentrations which exceeded their respective soil screening criterion. Based on these findings, coupled with the fact that the two deepest 2-foot intervals from each of these borings were "visibly clean" undisturbed native soil which did not exhibit a PID reading above background concentrations, no additional investigation is necessary at these boring locations in order to determine the vertical extent of impacted soil.

Based upon the analytical results of the soil samples, it appears that the maximum depth of impacted soil ranges from 8 to 34 feet below grade in the baseball field area and up to 12 feet below grade along the perimeter of the baseball field area. The maximum depth of impacted soil in the boring B-1 area is 6 feet below grade based on the findings of this program along with those of the soil sampling program conducted in March/May 2002 (probe P-47). The maximum depth of impacted soil in the south playground area is 12 feet below grade.

Based upon the findings presented above, delineation of the vertical extent of impacted soil for the borings advanced during the Investigation Sampling Program has been achieved and further investigation to determine vertical impact is not warranted.

5.1.1.2 - Horizontal Delineation

The analytical results of the Investigation Sampling Program are shown graphically on Figures 4-1, 4-2 and 4-3 provided in Section 4.0 of this report for the baseball field area, boring B-1 area and the south playground area, respectively. The conclusions provided below are presented as separate discussions of the baseball field area, boring B-1 area and the south playground area.

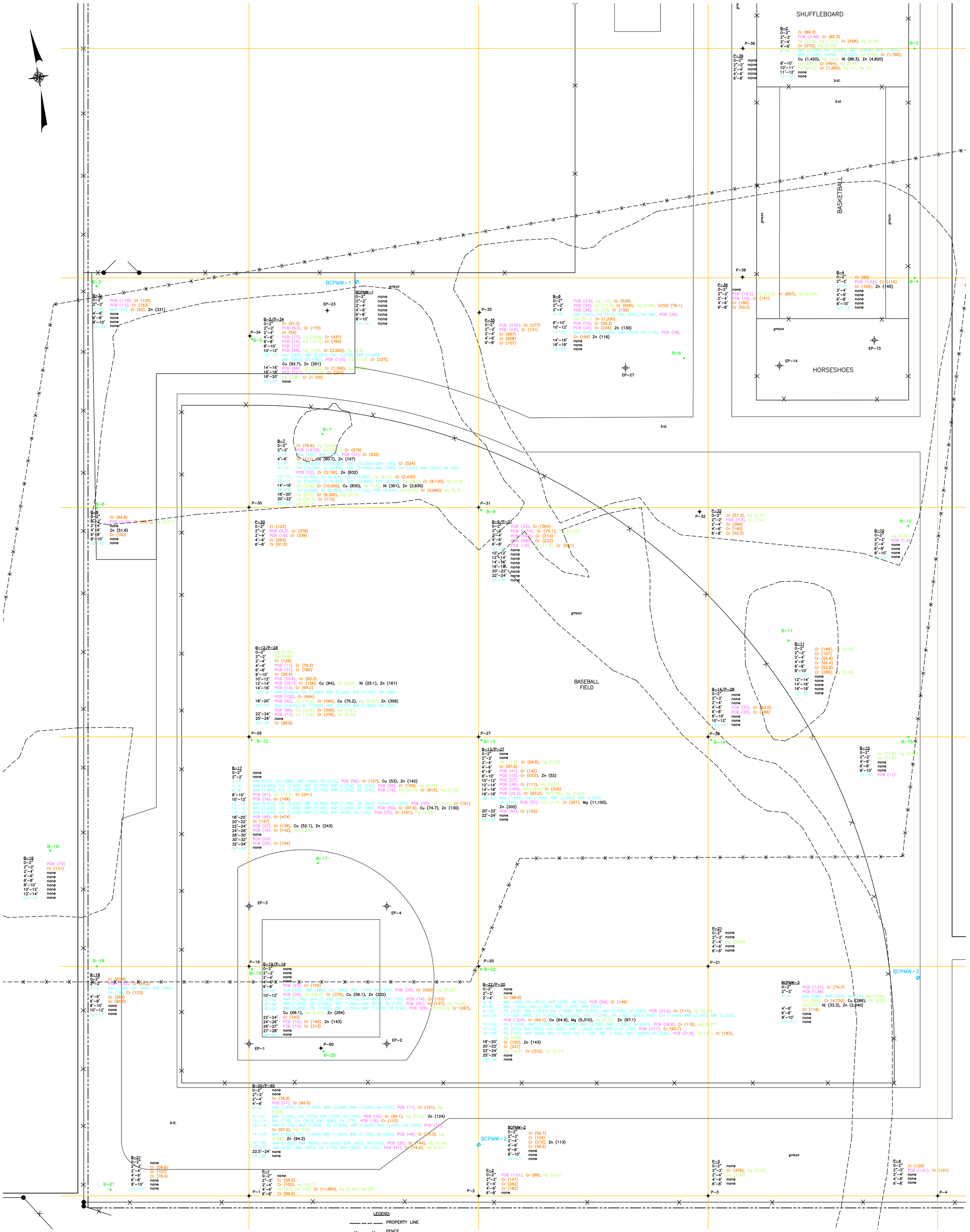
Baseball Field Area

As mentioned previously, Figure 4-1 provided in Section 4.0 of this report graphically presents the analytical results of the soil samples collected from the baseball field area during the Investigation Sampling Program. Utilizing Figure 4-1 as a starting point, a second figure has been prepared to incorporate the analytical results of the soil samples collected from the soil probes advanced during the March 2002 soil sampling program along with the data obtained from the Investigation Sampling Program. This new figure is presented as Figure 5-1. In addition, in order to supplement the analytical data, some of the prominent features shown on the April 10, 1962 aerial photograph (i.e., sludge drying beds, excavations, fence line and roadway) have been digitized and overlain on Figure 5-1. These features are presented as the dashed lines shown on the figure.

The following subsections describe horizontal delineation to the south, west, north and east of the baseball field area.

Delineation to South and West

As presented in the Site-Specific Work Plan and discussed in the April 4, 2003 comment response letter submitting the final Site-Specific Work Plan to the NYSDEC, the objectives of the Investigation Sampling Program limit the investigation to the Bethpage Community Park and are not intended to address or investigate any off-site impacts. Therefore, any detected contamination which extends to the property line of the Bethpage Community Park is considered to be horizontally delineated. As a result, even though certain compounds/constituents have been detected in soil samples at concentrations exceeding their respective soil screening criterion up to the southern and western property/fence lines of the Bethpage Community Park, further investigation pursuant to the Site-Specific Work Plan to determine the horizontal extent of impact along the south and west fence lines in the vicinity of the baseball field area is not warranted.



NOTES:

1. ALL VOC AND SVOC ANALYTICAL RESULTS REPORTED IN UNITS OF UG/KG (PPB). ALL METAL AND PCB ANALYTICAL RESULTS REPORTED IN UNITS OF MG/KG (PPM).
2. ONLY ANALYTICAL RESULTS IN EXCESS OF THE SOIL SCREENING LEVELS ARE PRESENTED.
3. COLORS:
   PINK – PCB EXCEEDANCE
   ORANGE – CHROMIUM EXCEEDANCE
   GREEN – RCRA METAL EXCEEDANCE (OTHER THAN CHROMIUM)
   BLUE – VOC OR SVOC EXCEEDANCE
4. DEPTH INTERVALS DENOTED IN BLUE INDICATE SOIL SAMPLES ANALYZED FOR VOCs AND SVOCs.

LEGEND:

- PROPERTY LINE
- FENCE
- FEATURES FROM APRIL 10, 1962 AERIAL PHOTOGRAPH
- FORMER FENCELINE FROM APRIL 10, 1962 AERIAL PHOTOGRAPH
- PREVIOUS SOIL PROBE LOCATION (ADVANCED TO A DEPTH OF 8 FEET BELOW GRADE – MARCH 2002)
- PREVIOUS EXPOSURE POINT SAMPLING LOCATION (COLLECTED FROM THE 0–2" DEPTH INTERVAL – MARCH 2002 (EP–1 THROUGH EP–19) OR MAY 2002 (EP–20 THROUGH EP–27))
- SOIL BORING LOCATION
- MONITORING WELL LOCATION

ABBREVIATIONS:

As – Arsenic
Ba – Barium
Cd – Cadmium
Cr – Chromium
Cu – Copper
Pb – Lead
Mg – Magnesium
Hg – Mercury
Ni – Nickel
Se – Selenium
Zn – Zinc

Ace – Acetone
1,1–DCA – 1,1–Dichloroethane
Tol – Toluene
Xy – Xylene
BAA – Benzo(a)anthracene
BAP – Benzo(a)pyrene
BBF – Benzo(b)fluoranthene
BKF – Benzo(k)fluoranthene
Chr – Chrysene
DA – Dibenzo(a,h)anthracene
4MP – 4–Methylphenol
PCP – Pentachlorophenol
Ph – Phenol

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

BASEBALL FIELD
COMPREHENSIVE SUMMARY OF EXCEEDANCES

SCALE: 1" = 15'

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

FIGURE 5-1

Delineation to North

The baseball field area is bounded to the north by borings/probes B-3, B-5/P-34, BCPMW-1, P-35, B-6, P-36, P-39 and B-2 (west to east).

The analytical results of the soil samples collected from borings/probes B-5/P-34, P-35, B-6 and P-36 exhibit compound/constituent concentrations in excess of the soil screening criteria. As shown on Figure 5-1, these borings/probes are located within a former sludge drying bed shown on the April 10, 1962 aerial photograph of the property. As a result, these compound/constituent concentrations are most likely due to the sludge drying bed itself or the fill material utilized to backfill the sludge drying bed.

None of the soil samples collected from borings/probes BCPMW-1 and P-39 exhibited compound/constituent concentrations in excess of the soil screening criteria.

The analytical results of the soil samples collected from boring B-3 exhibit compound/ constituent concentrations in excess of the soil screening criteria. As shown on Figure 5-1, this boring is located just outside the former fence line of the sludge drying bed area shown on the April 10, 1962 aerial photograph of the property. The compound/constituent concentrations detected in these samples are relatively low compared to those detected in soil samples collected from within the adjacent former sludge drying bed area. The soil screening criteria exceedances detected in the soil samples collected from this boring are relatively shallow (i.e., up to 4 feet below grade).

The analytical results of the soil samples collected from boring B-2 exhibit compound/ constituent concentrations in excess of the soil screening criteria. As shown on Figure 5-1, this boring is located outside of the former fence line of the sludge drying bed area shown on the April 10, 1962 aerial photograph of the property. As presented in the data validation discussion provided in Section 4.0 of this report, the two soil samples from this boring which exhibited the highest compound/constituent concentrations (i.e., B-2 [6'-8'] and B-2 [10'-11']) also contained high percent moistures (in excess of 50%) and therefore, the analytical results for these samples

have been qualified as estimated, possibly biased high. The compounds/constituents detected in the samples collected from this boring are bounded to the west by probe P-39 and to the north by probe P-41. There is no boring or probe located directly to the east of boring B-2. However, since the parking lot is located immediately adjacent to boring B-2 to the east, the parking lot effectively caps any contamination which may be present to the east of this location. It should be noted that even though concentrations of certain polycyclic aromatic hydrocarbons (PAHs) were detected in sample B-2 (6'-8') and none of the soil probe samples were analyzed for SVOCs, the high percent moisture detected in this sample makes these PAHs concentrations suspect. The concentrations of Total PAHs and Total SVOCs are below their respective soil screening criterion for sample B-2 (6'-8'). Factoring in the high percent moisture present in the sample, the concentration of Total CaPAHs would likely be below its respective soil screening criterion for this sample.

Based upon the findings presented above, the contamination detected in the baseball field area is bounded to the north. In addition, based on the April 10, 1962 aerial photograph overlain on Figure 5-1, areas situated further to the north of the baseball field area than those already investigated are located outside of the former fence line of the sludge drying bed area. As a result, further investigation to determine the horizontal extent of impact to the north of the baseball field area is not warranted.

Delineation to East

The baseball field area is bounded to the east by borings/probes B-4, B-10, B-15, BCPMW-3 and P-4 (north to south).

The analytical results of the soil samples collected from borings B-4 and B-10 exhibit compound/constituent concentrations in excess of the soil screening criteria. As shown on Figure 5-1, these borings/probes are located within a former sludge drying bed shown on the April 10, 1962 aerial photograph of the property. As a result, these compound/constituent concentrations are most likely due to the sludge drying bed itself or the fill material utilized to

backfill the sludge drying bed. The soil screening criteria exceedances detected in the soil samples collected from these borings are relatively shallow (i.e., up to 3 feet below grade).

The analytical results of the soil samples collected from boring B-15 exhibit compound/ constituent concentrations in excess of the soil screening criteria. However, the concentrations only slightly exceed their respective soil screening criteria. As shown on Figure 5-1, this boring is located within the former fence line of the sludge drying bed area shown on the April 10, 1962 aerial photograph of the property.

The analytical results of the soil samples collected from boring BCPMW-3 exhibit compound/constituent concentrations in excess of the soil screening criteria. As shown on Figure 5-1, this boring is located outside the former fence line of the sludge drying bed area shown on the April 10, 1962 aerial photograph of the property. Boring B-23 is located to the east of boring BCPMW-3. None of the compounds/constituents analyzed for in the soil samples collected from boring B-23 were detected at concentrations in excess of the soil screening criteria. As a result, boring BCPMW-3 is bounded to the east.

The analytical results of the soil samples collected from probe P-4 exhibit compound/ constituent concentrations in excess of the soil screening criteria. As shown on Figure 5-1, this boring is located outside the former fence line of the sludge drying bed area shown on the April 10, 1962 aerial photograph of the property. Probe P-6 is located to the east of probe P-4. None of the compounds/constituents analyzed for in the soil samples collected from probe P-6 were detected at concentrations in excess of the soil screening criteria. As a result, probe P-4 is bounded to the east.

Based upon the findings presented above, the contamination detected in the baseball field area is bounded to the east. In addition, based on the April 10, 1962 aerial photograph overlain on Figure 5-1, areas situated further to the east of the baseball field area than those already investigated are located outside of the former fence line of the sludge drying bed area. Also, the parking lot is located immediately adjacent to the baseball field area and eliminates any potential pathway associated with exposure to surface soil contamination which may be present to the

east. As a result, further investigation to determine the horizontal extent of any potentially impacted soil to the east of the baseball field area is not warranted.

Boring B-1 Area

The purpose of advancing a soil boring in this location during the Investigation Sampling Program was to determine the vertical extent of the PCB contamination detected in this location during the soil sampling program undertaken in March 2002 (i.e., at probe P-47). The horizontal extent of impact has previously been determined by the soil probes advanced during the March 2002 soil sampling program (i.e., probes P-41, P-46, P-48 and P-54). As a result, further investigation to determine the horizontal extent of impact in this location is not warranted.

South Playground Area

Soil borings were advanced within the south playground area during the Investigation Sampling Program in response to a request from the Town of Oyster Bay. The Town of Oyster Bay requested three borings (i.e., B-23, B-24 and B-25) and associated soil sampling in this area in an effort to obtain data to assess the health and safety of the workers involved in the reconstruction of the south playground area. Since these boring were not proposed in the Site-Specific Work Plan and the horizontal extent of any previously detected contamination within this area has been delineated by the March 2002 soil sampling program, further investigation to determine the horizontal extent of any impacted soil in this location is not warranted.

5.1.2 Groundwater

As discussed in Section 3.0 of this report, following the installation of monitoring wells BCPMW-1, BCPMW-2 and BCPMW-3 within the Bethpage Community Park, groundwater samples were collected from each well on June 19, 2003, for laboratory analysis for VOCs, SVOCs, PCBs, TAL metals (total and dissolved) and hexavalent chromium (total and dissolved). As discussed in Section 4.0 of this report, all compounds/constituents analyzed for were either not detected or were detected at concentrations below the Class GA Groundwater Standards/

Guidance Values with the exception of certain VOCs and TAL metals. In addition, as discussed in Section 4.0, due to the concentrations of certain VOCs detected in the groundwater samples collected on June 19, 2003, all three monitoring wells were resampled on September 12, 2003 and analyzed for VOCs only. Also, as discussed in Section 4.0, in order to confirm the presence and attempt to determine the source of certain VOCs detected in the groundwater samples collected on June 19 and September 12, 2003, three off-site monitoring wells as well as the three on-site monitoring wells were sampled/resampled on November 25 and 26, 2003 and analyzed for VOCs only.

The sections which follow present the conclusions as separate discussions of the VOC and TAL metal concentrations detected in groundwater samples collected during the Investigation Sampling Program. In summary, the groundwater and soil VOC analytical results seem to indicate that while the soil located within the Bethpage Community Park may have been an historic source of the chlorinated VOCs detected in the downgradient monitoring well groundwater samples, it does not appear that the soil is a continuing source of the chlorinated VOCs. The TAL metal groundwater analytical results in excess of the Class GA Groundwater Standards/Guidance Values are either due to the excessive turbidity of the samples or are naturally occurring on Long Island (i.e., background).

5.1.2.1 - <u>VOCs</u>

As discussed in Section 4.0 of this report, three VOCs, specifically 1,1-dichloroethane, cis-1,2-dichloroethene and trichloroethene, were detected in the groundwater samples collected on June 19, 2003, from BCPMW-1, BCPMW-2 and BCPMW-3, the one on-site upgradient and two on-site downgradient wells, respectively (relative to the ball field within the park) at concentrations in excess of the Class GA Groundwater Standards. Upon resampling the three monitoring wells on September 12, 2003, six VOCs, specifically vinyl chloride, 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, 1,1,1-trichloroethane and trichloroethene, were detected in the groundwater samples at concentrations in excess of the Class GA Groundwater Standards. Based on further sampling on November 25, 2003, five VOCs, specifically vinyl chloride, 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene

and trichloroethene, were detected in the groundwater samples collected from the on-site monitoring wells at concentrations in excess of the Class GA Groundwater Standards. In addition, based on sampling off-site sidegradient groundwater monitoring well B24MW-3 on November 26, 2003, two VOCs, specifically cis-1,2-dichloroethene and trichloroethene, were detected at concentrations in excess of the Class GA Groundwater Standards. On November 26, 2003, two off-site upgradient groundwater monitoring wells (B24MW-2 and B30MW-1) were sampled and analyzed. Based on the analytical results, VOCs were not detected in excess of the Class GA Groundwater Standards.

Based on the calculated groundwater elevations and the groundwater contour map presented in Section 4.0 of this report, monitoring well BCPMW-1 is located upgradient of the baseball field area and monitoring wells BCPMW-2 and BCPMW-3 are located downgradient of the baseball field area. Based on the results of the groundwater samples presented in Section 4.0 of this report, the concentrations of the VOCs which exceeded their respective Class GA Groundwater Standard (those presented above) were detected at higher concentrations in the downgradient wells (i.e., BCPMW-2 and BCPMW-3) than the upgradient well (i.e., BCPMW-1). As a result, it appears that the baseball field area may be an historic source of these VOC concentrations.

However, as noted in Section 3.0 and shown in the boring logs presented in Appendix D of this report, the water table at upgradient monitoring well BCPMW-1 is partially screened within a layer of clay. As a result, accurate measurements of the depth to groundwater could not be obtained from this well and, in fact, were obtained from nearby existing off-site monitoring wells in order to determine the approximate depth of the water table in the area in order to set the well screen at the correct elevation (i.e., 5 feet above the water table interface and 10 feet below). Based on the measured depth to water obtained following installation of monitoring well BCPMW-1, the screen was installed at a suitable elevation across the water table interface for groundwater sampling purposes (approximately 9.5 feet above the water table and 5.5 feet below).

However, groundwater flow in the vicinity of monitoring well BCPMW-1 may be affected due to the clay layer present at this well location. As a result, the groundwater sample collected from this well may not be representative of actual groundwater quality upgradient of the baseball field area.

During the course of the Investigation Sampling Program field activities, as specified in the Site-Specific Work Plan, a photoionization detector (PID) was utilized to screen on-site soil collected from the soil borings to determine which sample intervals should be selected for laboratory analysis of VOCs and SVOCs. This procedure was followed for all of the borings advanced within the park as part of this program. Accordingly, soil samples were selected for laboratory analysis of VOCs and SVOCs if any of the following conditions were met:

- if PID readings exceeded background concentrations in any of the soil samples collected from a particular boring, the soil sample within that boring that exhibited the highest PID reading, as well as the deepest soil sample collected within that boring, would be selected.
- any soil sample which resulted in a PID reading of 50 ppm or greater above background concentrations would be selected.

The results of the soil samples selected for laboratory analysis do not exhibit the presence of any of the VOCs detected in the groundwater samples at concentrations in excess of the Class GA Groundwater Standards with the exception of one sample (B-22 [10'-12']), which exhibited a 1,1-dichloroethane concentration of 490 ug/kg which exceeds the soil screening criterion of 200 ug/kg. Soil samples collected from the remainder of this boring (B-22) for VOC analysis did not exhibit 1,1-dichloroethane concentrations in excess of the soil screening criterion and the deepest soil sample collected from this boring (B-22 [28'-30']) was nondetect for VOCs.

Borings BCPMW-1, BCPMW-2 and BCPMW-3 were advanced to depths of 70 feet, 75.5 feet and 74.5 feet below grade, respectively, which corresponds to approximately 10 feet below the water table interface at each location. Based on field observations, soil samples were collected for laboratory analysis from grade to 12 feet below grade in each boring. However, in accordance with the Site-Specific Work Plan, soil samples collected from each boring for depths

greater than 12 feet below grade were all screened with the PID and were to be selected for laboratory analysis if the PID readings were above background concentrations or staining and/or discoloration was observed. None of the soil samples collected from depth intervals greater than 12 feet below grade from these three borings exhibited PID readings above background concentrations and no evidence of staining and/or discoloration was observed.

Based on the VOC analytical results of the soil samples as wells as the PID readings and visual observations noted during the collection of soil samples from the borings, the soil located within the baseball field area does not appear to be a *current* source of the six chlorinated VOCs detected in the groundwater samples at concentrations in excess of the Class GA Groundwater Standards.

Groundwater in the vicinity of the Bethpage Community Park (i.e., Bethpage groundwater) has been the focus of a detailed investigation program which resulted in the preparation of a Record of Decision and the implementation of a remediation program. Bethpage groundwater has been impacted by chlorinated VOCs which originated from operations conducted by Northrop Grumman Corporation and Ruco Polymer resulting in the degradation of groundwater quality.

In order to ascertain whether chlorinated VOCs are present in the groundwater surrounding the park, three off-site monitoring wells located immediately adjacent to the park (i.e., wells B24MW-2, B24MW-3 and B30MW-1) were sampled on November 26, 2003 and analyzed for VOCs only. According to the groundwater contour map presented as Figure 4-4 in Section 4.0 of this report, monitoring wells B24MW-2 and B30MW-1 are located upgradient of the park and monitoring well B24MW-3 is located sidegradient to the park. The VOC analyses performed on the groundwater samples collected from these three wells show concentrations of cis-1,2-dichloroethene and trichloroethene in excess of their respective Class GA Groundwater Standards for sidegradient monitoring well B24MW-3, and no concentrations in excess of the Class GA Groundwater Standards/Guidance Values for upgradient monitoring wells B24MW-2 and B30MW-1. However, since none of the six chlorinated VOCs were detected in the upgradient off-site monitoring wells and the concentrations of those VOCs detected in off-site

monitoring well B24MW-3 were much lower than those detected on-site, it does not appear that these six chlorinated VOCs are attributable to Bethpage groundwater outside the park. It should be noted that, according to the boring log prepared following the installation of off-site monitoring well B24MW-2, the same clay layer encountered at on-site well BCPMW-1 was also present at well B24MW-2 and may be affecting groundwater flow adjacent to this well in much the same manner.

Based on the discussion presented above, the soil sample screening and analytical results seem to indicate that, at the current time, the soil located within the park is not a continuing source of the six chlorinated VOCs detected in the downgradient groundwater samples since residual concentrations of VOCs were not detected in the soil samples and elevated PID readings were not encountered. However, the analytical results of the groundwater samples collected from the three off-site monitoring wells (two of which were upgradient) coupled with the groundwater samples collected from the three on-site monitoring wells seem to indicate that the park property could have been an historic source of these six chlorinated VOCs. As a result, further investigation to determine the source of the six chlorinated VOCs detected in the downgradient groundwater samples is necessary.

5.1.2.2 - TAL Metals

As discussed in Section 4.0 of this report, several TAL metals, including antimony, arsenic, chromium, iron, lead, manganese, sodium and thallium, were detected in the unfiltered groundwater samples collected from BCPMW-1, BCPMW-2 and BCPMW-3 on June 19, 2003, at concentrations in excess of the Class GA Groundwater Standards/Guidance Values.

As discussed in Section 3.0 of this report, monitoring well BCPMW-1 was purged with a new disposable polyethylene bailer. Following the purge of four well volumes, all parameters measured (i.e., conductivity, turbidity, dissolved oxygen, temperature and pH) had stabilized and the turbidity of the groundwater was >999 Nephelometric Turbidity Units (NTUs). This was most likely due to agitation resulting from lowering the bailer into the groundwater. After

allowing the well to recharge for three hours prior to sampling, the turbidity of the sample was measured at 800 NTUs.

As discussed in Section 3.0 of this report, monitoring wells BCPMW-2 and BCPMW-3 were purged utilizing a properly decontaminated submersible pump and new dedicated polyethylene tubing. Following the purge of 7 and 7.5 well volumes from BCPMW-2 and BCPMW-3, respectively, all parameters measured (i.e., conductivity, turbidity, dissolved oxygen, temperature and pH) had stabilized and the turbidity of the groundwater was 17 NTUs and 5 NTUs, respectively. At this point in time, the pump and tubing were removed from each well and a new, dedicated, disposable polyethylene bailer was utilized to collect the groundwater sample from the well. The turbidity of the samples was measured at 587 NTUs and 685 NTUs for monitoring wells BCPMW-2 and BCPMW-3, respectively, most likely due to agitation resulting from lowering the bailer into the groundwater.

The analytical results of the filtered groundwater samples exhibited concentrations of only iron, sodium and total iron and manganese in excess of the Class GA Groundwater Standards. As a result, the concentrations of the other TAL metals detected at concentrations in excess of the Class GA Groundwater Standards/Guidance Values are most likely attributable to suspended solids (e.g., soil particles) in the groundwater samples. These suspended solids are likely due to dropping the bailer into the groundwater repetitively as evident by the high turbidity readings. Therefore, the unfiltered groundwater samples are not indicative of actual groundwater quality.

Concentrations of iron and total iron and manganese were detected in the filtered groundwater sample collected from BCPMW-3. However, iron is naturally occurring and is commonly detected in Long Island groundwater at concentrations in excess of the applicable groundwater standard. As a result, the concentrations of iron and total iron and manganese are not attributable to the site.

Concentrations of sodium were detected in the filtered groundwater samples collected from both BCPMW-1 and BCPMW-3. However, sodium is naturally occurring and is commonly

detected in Long Island groundwater at concentrations in excess of the applicable groundwater standard. As a result, the concentrations of sodium are not attributable to the site.

Based on the conclusions presented above, further investigation activities with regard to groundwater TAL metal concentrations are not warranted.

APPENDIX A

MONITORING WELL CONSTRUCTION LOGS

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

Site Bethpage Community Park Job No. 1965-07 Well No. BCPMW-1

Total Depth 65’ Surface Elevation NA Top Riser Elevation 125.72’

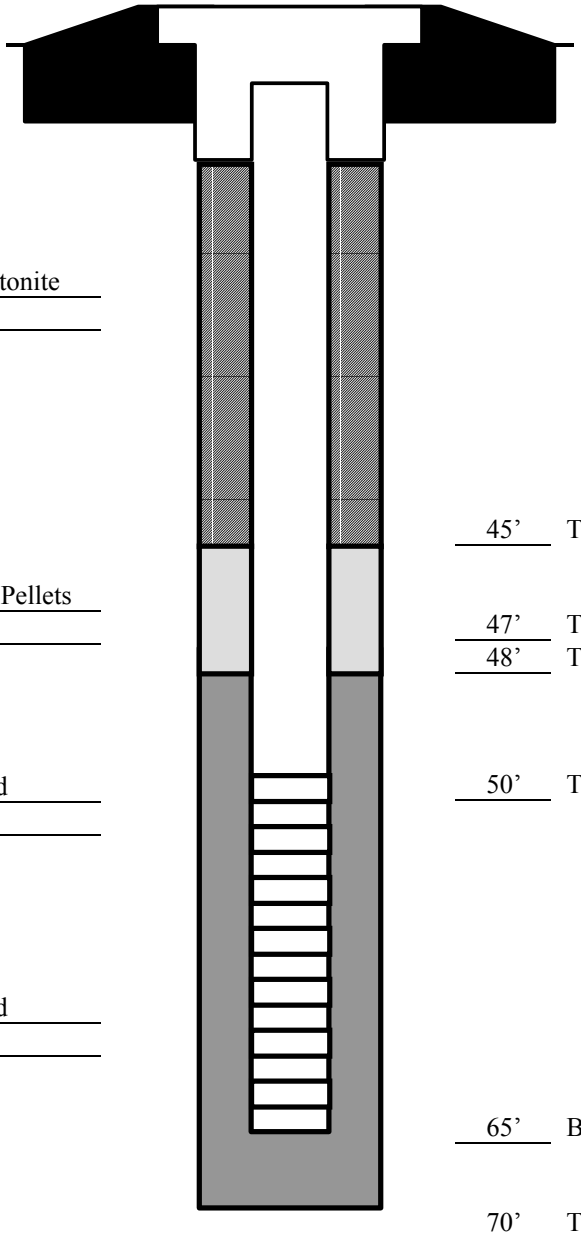
Water Levels (Depth, Date, Time) 59.66’, 6/19/03, 8:00 a.m. Date Installed 5/30/03

Riser Dia. 2” Material PVC Length 50’

Screen Dia. 2” Material PVC Length 15’ Slot Size 0.010”

SCHEMATIC

Surface Seal Type
Cement



Ground Surface
125.72’ Riser Elevation
2’ Bottom Surface Seal

Grout Type Cement/Bentonite

45’ Top Seal

Seal Type Bentonite Pellets

47’ Top Filter Sand
48’ Top Sand Pack

Filter Sand Type Sand
Size 0

50’ Top Screen

Sand Pack Type Sand
Size 0

65’ Bottom Screen

70’ Total Depth of Boring

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

Site Bethpage Community Park Job No. 1965-07 Well No. BCPMW-2

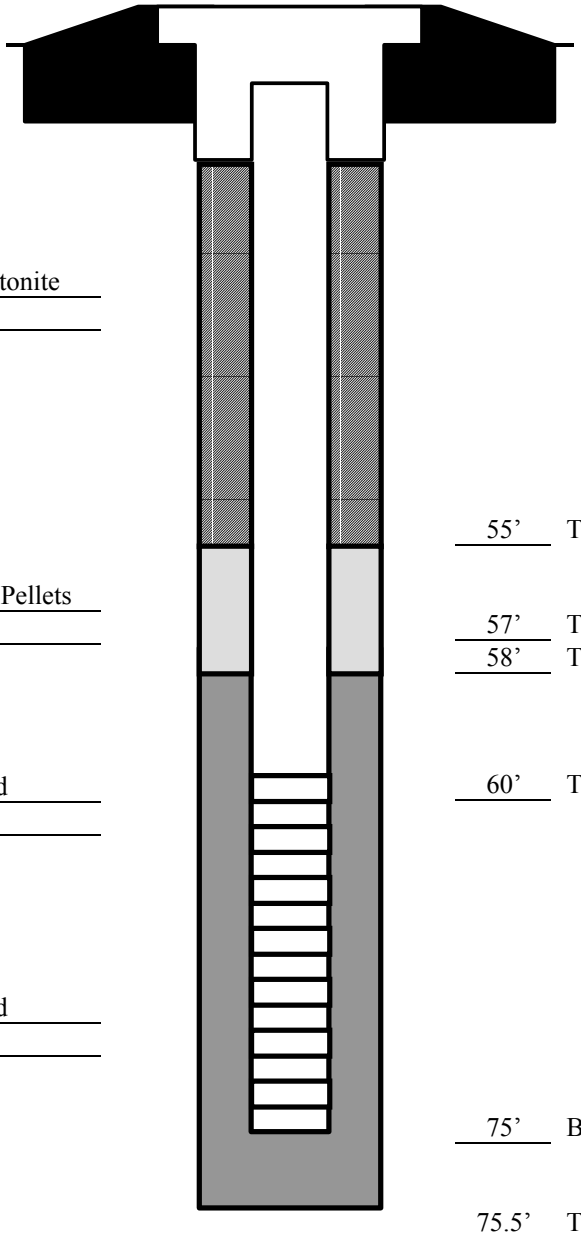
Total Depth 75’ Surface Elevation NA Top Riser Elevation 126.35’

Water Levels (Depth, Date, Time) 60.90’, 6/19/03, 11:30 a.m. Date Installed 6/05/03

Riser Dia. 2” Material PVC Length 60’
Screen Dia. 2” Material PVC Length 15’ Slot Size 0.010”

SCHEMATIC

Surface Seal Type
Cement



Ground Surface
126.35’ Riser Elevation
2’ Bottom Surface Seal

Grout Type Cement/Bentonite

55’ Top Seal

Seal Type Bentonite Pellets

57’ Top Filter Sand
58’ Top Sand Pack

Filter Sand Type Sand
Size 0

60’ Top Screen

Sand Pack Type Sand
Size 0

75’ Bottom Screen

75.5’ Total Depth of Boring

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

Site Bethpage Community Park Job No. 1965-07 Well No. BCPMW-3

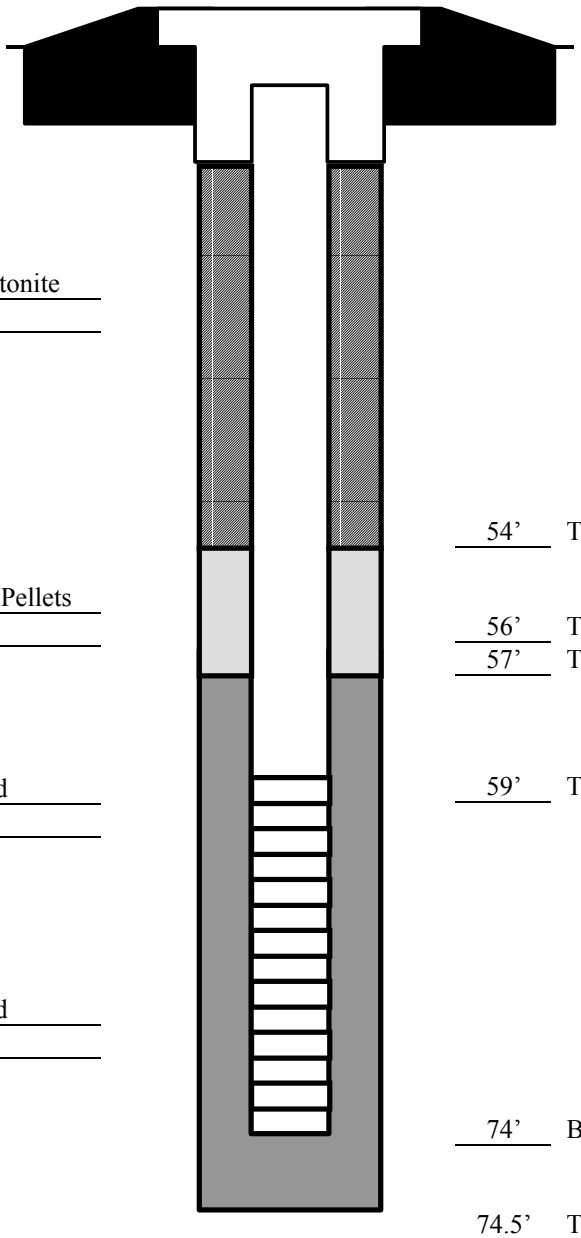
Total Depth 74’ Surface Elevation NA Top Riser Elevation 124.96’

Water Levels (Depth, Date, Time) 59.60’, 6/19/03, 9:20 a.m. Date Installed 6/06/03

Riser Dia. 2” Material PVC Length 59’

Screen Dia. 2” Material PVC Length 15’ Slot Size 0.010”

SCHEMATIC



Surface Seal Type
Cement

Ground Surface
124.96’ Riser Elevation
2’ Bottom Surface Seal

Grout Type Cement/Bentonite

54’ Top Seal

Seal Type Bentonite Pellets

56’ Top Filter Sand
57’ Top Sand Pack

Filter Sand Type Sand
Size 0

59’ Top Screen

Sand Pack Type Sand
Size 0

74’ Bottom Screen

74.5’ Total Depth of Boring

APPENDIX B

LABORATORY ANALYSIS SUMMARY TABLES

TABLE B-1

SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

TABLE B-1
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-1	Boring B-2		Boring B-3		Boring B-4		Boring B-5		
SAMPLE IDENTIFICATION	B-11012	B-268	B-21214	B-324	B-31214	B-423	B-41012	B-51214	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	10' - 12'	6' - 8'	12' - 14'	2' - 4'	12' - 14'	2' - 3'	10' - 12'	12' - 14'		
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	6/02/2003	5/28/2003	6/02/2003	5/29/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	5		
PERCENT SOLIDS	85	31	92	92	95	87	95	88		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	4 J	U	U	U	U	U	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	U	U	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	3 J	U	U	U	U	U	5	400
Acetone	130	64	71	U	U	U	U	**300**	5	200
Carbon Disulfide	U	5 J	U	U	U	U	U	29 J	5	2,700
Methylene Chloride	32 B	U*	U*	U*	U*	U*	U	U*	5	100
trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	16 J	U	U	U	U	U	U	5	200
2-Butanone	U	U	U	U	U	U	U	U	5	300
cis-1,2-Dichloroethene	U	6 J	U	U	U	U	U	U	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	U	U	U	5	100
Benzene	U	U	U	U	U	U	U	U	5	60
Trichloroethene	U	12 J	U	U	U	1 J	U	U	5	700
1,2-Dichloropropane	U	U	U	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	5	1,000
Toluene	U	5 J	U	U	U	U	U	41 J	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	U	U	U	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	13 J	5	1,700
Ethylbenzene	U	U	U	U	U	U	U	37 J	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-1	Boring B-2		Boring B-3		Boring B-4		Boring B-5		
SAMPLE IDENTIFICATION	B-11012	B-268	B-21214	B-324	B-31214	B-423	B-41012	B-51214	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	10' - 12'	6' - 8'	12' - 14'	2' - 4'	12' - 14'	2' - 3'	10' - 12'	12' - 14'		
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	6/02/2003	5/28/2003	6/02/2003	5/29/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	5		
PERCENT SOLIDS	85	31	92	92	95	87	95	88		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	U	4 J	U	U	U	U	U	36 J	5	1,200 *
o-Xylene	U	U	U	U	U	U	U	78	5	1,200 *
Xylene (total)	U	4 J	U	U	U	U	U	110	5	1,200
Styrene	U	U	U	U	U	U	U	U	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	U	U	U	U	U	U	U	83	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	14 J	U	U	U	U	U	U	5	8,500
1,2-Dichlorobenzene	U	14 J	U	U	U	U	U	260	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	U	U	5	----
Methylcyclohexane	U	40	U	U	U	U	U	18 J	5	----
Total VOCs	162	188	74	0	0	1	0	1,005		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-5	Boring B-6			Boring B-7					
SAMPLE IDENTIFICATION	B-52022	B-646	B-61214	B-61820	B-724	B-768	B-7810	B-71012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	20' - 22'	4' - 6'	12' - 14'	18' - 20'	2' - 4'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	5/29/2003	5/27/2003	5/27/2003	5/27/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	100	100	50		
PERCENT SOLIDS	95	89	82	97	91	89	89	90		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	U	U	U	U	U	U	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	U	U	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5	400
Acetone	6	64	39	9	82	U	U	U	5	200
Carbon Disulfide	U	U	U	U	U	U	U	U	5	2,700
Methylene Chloride	8	U*	U*	U*	U*	U	U	U	5	100
trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	U	U	U	U	U	U	U	5	200
2-Butanone	U	U	U	U	12	U	U	U	5	300
cis-1,2-Dichloroethene	U	1 J	U	U	3 J	U	U	U	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	1 J	U	U	U	U	U	U	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	U	U	U	5	100
Benzene	U	U	U	U	U	U	U	U	5	60
Trichloroethene	U	6	4 J	U	2 J	U	U	U	5	700
1,2-Dichloropropane	U	U	U	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	5	1,000
Toluene	U	4 J	3 J	U	9	**14,000**	**19,000**	**1,800**	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	U	U	U	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	U	5	1,700
Ethylbenzene	U	U	5 J	U	U	1,200	1,200	840	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-5	Boring B-6			Boring B-7					
SAMPLE IDENTIFICATION	B-52022	B-646	B-61214	B-61820	B-724	B-768	B-7810	B-71012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	20' - 22'	4' - 6'	12' - 14'	18' - 20'	2' - 4'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	5/29/2003	5/27/2003	5/27/2003	5/27/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	100	100	50		
PERCENT SOLIDS	95	97	82	97	91	89	89	90		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	U	2 J	9	U	U	**4,500**	**4,600**	**3,100**	5	1,200 *
o-Xylene	U	4 J	8	U	U	**1,700**	**1,800**	1,200	5	1,200 *
Xylene (total)	U	6	17	U	U	**6,200**	**6,400**	**4,300**	5	1,200
Styrene	U	U	U	U	U	U	U	U	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	U	2 J	5 J	U	U	220 J	280 J	170 J	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	5	8,500
1,2-Dichlorobenzene	U	1 J	4 J	U	5 J	430 J	400 J	250 J	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	U	U	5	----
Methylcyclohexane	U	5 J	14	U	8	4,100	4,300	3,900	5	----
Total VOCs	14	96	108	9	121	**32,350**	**37,980**	**15,560**		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-7			Boring B-8	Boring B-9		Boring B-10	Boring B-11		
SAMPLE IDENTIFICATION	B-71214	B-71618	B-72224	B-81012	B-9810	B-92426	B-101012	B-111012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	12' - 14'	16' - 18'	22' - 24'	10' - 12'	8' - 10'	24' - 26'	10' - 12'	10' - 12'		
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	5/29/2003	6/10/2003	6/10/2003	6/02/2003	5/27/2003		
DILUTION FACTOR	100	50	1	1	1	1	1	1		
PERCENT SOLIDS	88	81	96	91	95	96	81	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	U	U	U	6	U	U	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	U	U	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5	400
Acetone	U	U	7	U	34 BJ*	U*	U	39	5	200
Carbon Disulfide	U	U	U	U	2 J	U	U	1 J	5	2,700
Methylene Chloride	U	U	U*	U*	19 BJ*	U*	U*	U*	5	100
trans-1,2-Dichloroethene	U	U	U	U	4 J	U	U	6	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	U	U	U	1 J	U	U	9	5	200
2-Butanone	U	U	U	U	U	U	U	U	5	300
cis-1,2-Dichloroethene	U	U	U	2 J	60	U	U	84	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	U	U	U	U	U	U	3 J	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	U	U	U	5	100
Benzene	U	U	U	U	U	U	U	U	5	60
Trichloroethene	U	U	U	4 J	88	U	U	29	5	700
1,2-Dichloropropane	U	U	U	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	5	1,000
Toluene	**16,000**	**6,900**	U	U	23	U	U	1 J	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	2 J	U	U	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	U	5	1,700
Ethylbenzene	1,100	600	U	U	16	U	U	U	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-7			Boring B-8	Boring B-9		Boring B-10	Boring B-11		
SAMPLE IDENTIFICATION	B-71214	B-71618	B-72224	B-81012	B-9810	B-92426	B-101012	B-111012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	12' - 14'	16' - 18'	22' - 24'	10' - 12'	8' - 10'	24' - 26'	10' - 12'	10' - 12'		
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	5/29/2003	6/10/2003	6/10/2003	6/02/2003	5/27/2003		
DILUTION FACTOR	100	50	1	1	1	1	1	1		
PERCENT SOLIDS	88	81	96	91	95	96	81	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	**3,900**	**2,100**	U	U	23	U	U	U	5	1,200 *
o-Xylene	**1,600**	810	U	U	31	U	U	U	5	1,200 *
Xylene (total)	**5,400**	**3,000**	U	U	54	U	U	U	5	1,200
Styrene	U	U	U	U	U	U	U	U	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	230 J	140 J	U	U	13	U	U	U	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	5	8,500
1,2-Dichlorobenzene	360 J	270 J	U	U	5 J	U	U	U	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	4 J	U	U	U	5	----
Methylcyclohexane	5,300	3,900	U	U	60	U	U	U	5	----
Total VOCs	**33,890**	**17,720**	7	6	445	0	0	172		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-11	Boring B-12			Boring B-13		Boring B-14	Boring B-15		
SAMPLE IDENTIFICATION	B-111820	B-121618	B-122022	B-122628	B-131820	B-132426	B-141214	B-151012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	18' - 20'	16' - 18'	20' - 22'	26' - 28'	18' - 20'	24' - 26'	12' - 14'	10' - 12'		
DATE OF COLLECTION	5/27/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/11/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	86	91	96	89	98	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	1 J	2 J	U	2 J	U	U	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	U	U	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5	400
Acetone	U	110	140	U	93	7	U	U	5	200
Carbon Disulfide	U	1 J	1 J	U	2 J	U	U	U	5	2,700
Methylene Chloride	8	U*	U*	U*	12 BJ*	U*	U*	U*	5	100
trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	U	U	U	2 J	U	U	U	5	200
2-Butanone	U	23	29	U	17	U	U	U	5	300
cis-1,2-Dichloroethene	U	2 J	2 J	U	4 J	U	U	U	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	U	U	U	5	100
Benzene	U	U	U	U	U	U	U	U	5	60
Trichloroethene	U	1 J	1 J	U	6	U	U	U	5	700
1,2-Dichloropropane	U	U	U	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	5	1,000
Toluene	U	110	12	U	8	U	U	U	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	U	U	U	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	U	5	1,700
Ethylbenzene	U	57	2 J	U	2 J	U	U	U	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-11	Boring B-12			Boring B-13		Boring B-14	Boring B-15		
SAMPLE IDENTIFICATION	B-111820	B-121618	B-122022	B-122628	B-131820	B-132426	B-141214	B-151012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	18' - 20'	16' - 18'	20' - 22'	26' - 28'	18' - 20'	24' - 26'	12' - 14'	10' - 12'		
DATE OF COLLECTION	5/27/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/11/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	86	91	96	89	98	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	U	50	5 J	U	4 J	U	U	U	5	1,200 *
o-Xylene	U	71	6	U	7	U	U	U	5	1,200 *
Xylene (total)	U	120	11	U	11	U	U	U	5	1,200
Styrene	U	U	U	U	U	U	U	U	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	U	17	2 J	U	4 J	U	U	U	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	5	8,500
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	U	U	5	----
Methylcyclohexane	U	120	8	U	7	U	U	U	5	----
Total VOCs	8	683	221	0	181	7	0	0		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-16	Boring B-17								
SAMPLE IDENTIFICATION	B-161416	B-1724	B-1746	B-1768	B-171214	B-171416	B-171618	B-173436	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	14' - 16'	2' - 4'	4' - 6'	6' - 8'	12' - 14'	14' - 16'	16' - 18'	34' - 36'		
DATE OF COLLECTION	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	91	91	90	88	91	91	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	U	U	U	U	5 J	U	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	U	1 J	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5	400
Acetone	U	16	40	75	73	83	95	10	5	200
Carbon Disulfide	U	1 J	2 J	U	U	3 J	1 J	U	5	2,700
Methylene Chloride	4 J	U*	U*	U*	U*	U*	U*	U*	5	100
trans-1,2-Dichloroethene	U	U	U	U	U	1 J	U	U	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	U	3 J	U	U	21	3 J	U	5	200
2-Butanone	U	U	U	18	U	16	14	U	5	300
cis-1,2-Dichloroethene	U	4 J	10	3 J	3 J	19	2 J	U	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	U	U	U	5	100
Benzene	U	U	U	U	U	U	U	U	5	60
Trichloroethene	U	4 J	13	4 J	U	16	2 J	U	5	700
1,2-Dichloropropane	U	U	U	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	5	1,000
Toluene	U	24	8	17	65	19	10	U	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	U	U	U	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	U	5	1,700
Ethylbenzene	U	6	2 J	6	21	7	4 J	U	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-16	Boring B-17								
SAMPLE IDENTIFICATION	B-161416	B-1724	B-1746	B-1768	B-171214	B-171416	B-171618	B-173436	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	14' - 16'	2' - 4'	4' - 6'	6' - 8'	12' - 14'	14' - 16'	16' - 18'	34' - 36'		
DATE OF COLLECTION	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	91	91	90	88	91	91	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	U	22	13	25	67	21	13	U	5	1,200 *
o-Xylene	U	40	26	30	130	36	30	U	5	1,200 *
Xylene (total)	U	62	39	55	200	57	43	U	5	1,200
Styrene	U	U	U	U	4 J	2 J	U	U	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	U	15	7	32	48	12	7	U	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	U	U	U	2 J	U	U	U	5	8,500
1,2-Dichlorobenzene	U	U	U	U	18	U	U	U	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	U	U	5	----
Methylcyclohexane	U	1 J	U	8	10	3 J	2 J	U	5	----
Total VOCs	4	195	163	273	641	322	226	10		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-18		Boring B-19					Boring B-20		
SAMPLE IDENTIFICATION	B-1824	B-181214	B-19810	B-191214	B-191618	B-191820	B-192830	B-2068	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	2' - 4'	12' - 14'	8' - 10'	12' - 14'	16' - 18'	18' - 20'	28' - 30'	6' - 8'		
DATE OF COLLECTION	5/29/2003	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	95	91	92	85	91	98	92		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	U	3 J	6	24	3 J	U	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	U	U	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5	400
Acetone	30	U	**220 E**	88	190	75	8	68	5	200
Carbon Disulfide	U	U	7	1 J	2 J	3 J	U	2 J	5	2,700
Methylene Chloride	6	8	U*	U*	U*	U*	U*	U*	5	100
trans-1,2-Dichloroethene	U	U	U	U	2 J	1 J	U	U	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	U	2 J	29	45	6	U	2 J	5	200
2-Butanone	U	U	61	28	51	U	U	U	5	300
cis-1,2-Dichloroethene	U	U	8	12	19	11	U	4 J	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	U	U	2 J	U	U	U	5	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	U	U	U	5	100
Benzene	U	U	U	U	U	U	U	U	5	60
Trichloroethene	3 J	U	7	10	13	9	U	19	5	700
1,2-Dichloropropane	U	U	1 J	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	5	1,000
Toluene	2 J	U	16	150	38	30	U	25	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	7	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	U	U	U	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	U	5	1,700
Ethylbenzene	U	U	7	21	9	25	U	11	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-18		Boring B-19					Boring B-20		
SAMPLE IDENTIFICATION	B-1824	B-181214	B-19810	B-191214	B-191618	B-191820	B-192830	B-2068	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	2' - 4'	12' - 14'	8' - 10'	12' - 14'	16' - 18'	18' - 20'	28' - 30'	6' - 8'		
DATE OF COLLECTION	5/29/2003	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	95	91	92	85	91	98	92		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	U	U	6	74	40	88	U	46	5	1,200 *
o-Xylene	U	U	37	70	51	99	U	72	5	1,200 *
Xylene (total)	U	U	44	140	91	190	U	120	5	1,200
Styrene	U	U	U	2 J	U	3 J	U	2 J	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	U	U	13	16	U	U	U	26	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	5	8,500
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	4 J	U	U	U	U	5	----
Methylcyclohexane	U	U	28	16	26	4 J	U	5	5	----
Total VOCs	41	8	460	676	601	547	8	407		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.
E: Result exceeds the instrument calibration range, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-20							Boring B-21		
SAMPLE IDENTIFICATION	B-20810	B-201012	B-201214	B-201416	B-201618	B-201820	B-202426	B-211012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	24' - 26'	10' - 12'		
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	92	93	89	92	91	91	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	43	14	14	4 J	26	U	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	U	2 J	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5	400
Acetone	42	73	70	54	120	90	9	U	5	200
Carbon Disulfide	U	1 J	U	1 J	1 J	2 J	U	U	5	2,700
Methylene Chloride	U*	U*	U*	U*	U*	U*	U*	U	5	100
trans-1,2-Dichloroethene	U	3 J	U	2 J	2 J	2 J	U	U	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	49	22	21	22	120	U	U	5	200
2-Butanone	7	14	26	14	43	35	U	U	5	300
cis-1,2-Dichloroethene	1 J	19	9	21	43	38	U	U	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	3 J	U	2 J	U	2 J	U	U	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	1 J	U	U	5	100
Benzene	U	U	U	U	U	0.9 J	U	U	5	60
Trichloroethene	U	18	6	17	7	13	U	U	5	700
1,2-Dichloropropane	U	U	U	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	8	3 J	26	16	U	U	5	1,000
Toluene	7	6	30	13	85	83	U	U	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	1 J	1 J	U	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	U	5	1,700
Ethylbenzene	4 J	U	11	4 J	16	18	U	U	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-20							Boring B-21		
SAMPLE IDENTIFICATION	B-20810	B-201012	B-201214	B-201416	B-201618	B-201820	B-202426	B-211012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	24' - 26'	10' - 12'		
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	92	93	89	92	91	91	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	12	4 J	55	25	80	77	U	U	5	1,200 *
o-Xylene	18	10	70	35	90	96	U	U	5	1,200 *
Xylene (total)	30	15	120	60	170	170	U	U	5	1,200
Styrene	U	U	2 J	1 J	3 J	3 J	U	U	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	7	U	24	10	26	39	U	U	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	5	8,500
1,2-Dichlorobenzene	1 J	U	U	U	U	U	U	U	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	U	U	5	----
Methylcyclohexane	1 J	2 J	11	4 J	20	18	U	U	5	----
Total VOCs	130	260	478	301	759	853	9	0		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-22									
SAMPLE IDENTIFICATION	B-2246	B-2268	B-22810	B-221012	B-221214	B-221416	B-221618	B-222830	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	28' - 30'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	1	1	1	50	1	1	1	1		
PERCENT SOLIDS	95	93	91	92	91	95	92	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	5	----
Chloromethane	U	U	U	U	U	U	U	U	5	----
Vinyl Chloride	U	3 J	4 J	U	14	16	8	U	5	200
Bromomethane	U	U	U	U	U	U	U	U	5	----
Chloroethane	U	U	U	U	2 J	U	U	U	5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5	400
Acetone	47	120	91	U	57	38	64	U	5	200
Carbon Disulfide	U	1 J	U	U	3 J	3 J	6	U	5	2,700
Methylene Chloride	U*	U*	U*	U	12 BJ*	13 BJ*	13 BJ*	U*	5	100
trans-1,2-Dichloroethene	U	1 J	U	U	2 J	2 J	U	U	5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	8	60	**490**	150	84	40	U	5	200
2-Butanone	7	26	20	U	15	14	18	U	5	300
cis-1,2-Dichloroethene	1 J	7	5	270	80	60	52	U	5	----
Chloroform	U	U	U	U	U	U	U	U	5	300
1,1,1-Trichloroethane	U	1 J	1 J	75 J	15	6	4 J	U	5	800
Carbon Tetrachloride	U	U	U	U	U	U	U	U	5	600
1,2-Dichloroethane	U	U	U	U	U	2 J	U	U	5	100
Benzene	U	U	U	U	2 J	1 J	U	U	5	60
Trichloroethene	3 J	8	4 J	280	37	32	30	U	5	700
1,2-Dichloropropane	U	U	U	U	U	U	U	U	5	----
Bromodichloromethane	U	U	U	U	U	U	U	U	5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	5	1,000
Toluene	2 J	7	86	**1,900**	200	130	100	U	5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	5	----
Tetrachloroethene	U	U	U	U	2 J	2 J	2 J	U	5	1,400
2-Hexanone	U	U	U	U	U	U	U	U	5	----
Dibromochloromethane	U	U	U	U	U	U	U	U	5	----
1,2-Dibromoethane	U	U	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	U	U	5	1,700
Ethylbenzene	U	3 J	13	320	30	20	19	U	5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-22									
SAMPLE IDENTIFICATION	B-2246	B-2268	B-22810	B-221012	B-221214	B-221416	B-221618	B-222830	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	28' - 30'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	1	1	1	50	1	1	1	1		
PERCENT SOLIDS	95	93	93	92	91	95	92	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
m,p-Xylene	2 J	5	68	**1,600**	130	87	88	U	5	1,200 *
o-Xylene	5	10	71	**1,400**	130	100	110	U	5	1,200 *
Xylene (total)	6	16	140	**3,000**	260	190	200	U	5	1,200
Styrene	U	U	U	U	U	U	U	U	5	----
Bromoform	U	U	U	U	U	U	U	U	5	----
Isopropylbenzene	2 J	6	23	650	40	29	28	U	5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	5	1,600
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	5	8,500
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U	U	5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U	U	5	6,000
Methyl Acetate	U	U	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	U	U	5	----
Methylcyclohexane	U	8	9	360	45	17	12	U	5	----
Total VOCs	75	230	595	**10,345**	1,226	846	794	0		10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-24		Boring B-25	BCPMW-1	BCPMW-2	BCPMW-3			CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE IDENTIFICATION	B-2446	B-241012	B-251012	MW-11012	MW-21012	MW-324	MW-31012			
SAMPLE DEPTH	4' - 6'	10' - 12'	10' - 12'	10' - 12'	10' - 12'	2' - 4'	10' -12'			
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	5/30/2003	6/05/2003	6/10/2003	6/05/2003			
DILUTION FACTOR	1	1	1	1	1	1	1			
PERCENT SOLIDS	92	96	90	89	93	92	95			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)		(ug/kg)	(ug/kg)
Dichlorodifluoromethane	U	U	U	U	U	U	U		5	----
Chloromethane	U	U	U	U	U	U	U		5	----
Vinyl Chloride	U	U	U	U	U	U	U		5	200
Bromomethane	U	U	U	U	U	U	U		5	----
Chloroethane	U	U	U	U	U	U	U		5	1,900
Trichlorofluoromethane	U	U	U	U	U	U	U		5	----
1,1-Dichloroethene	U	U	U	U	U	U	U		5	400
Acetone	U*	U*	U*	30	8	58 BJ*	12		5	200
Carbon Disulfide	U	U	U	U	U	2 J	U		5	2,700
Methylene Chloride	16 BJ*	U*	U*	6	U*	18 BJ*	U*		5	100
trans-1,2-Dichloroethene	U	U	U	U	U	U	U		5	300
Methyl tert-Butyl Ether	U	U	U	U	U	U	U		5	----
1,1-Dichloroethane	U	U	U	U	U	U	U		5	200
2-Butanone	U	U	U	U	U	12	U		5	300
cis-1,2-Dichloroethene	8	U	U	U	U	1 J	U		5	----
Chloroform	U	U	U	U	U	U	U		5	300
1,1,1-Trichloroethane	U	U	U	U	U	U	U		5	800
Carbon Tetrachloride	U	U	U	U	U	U	U		5	600
1,2-Dichloroethane	U	U	U	U	U	U	U		5	100
Benzene	U	U	U	U	U	U	U		5	60
Trichloroethene	33	U	U	U	U	3 J	U		5	700
1,2-Dichloropropane	U	U	U	U	U	U	U		5	----
Bromodichloromethane	U	U	U	U	U	U	U		5	----
cis-1,3-Dichloropropene	U	U	U	U	U	U	U		5	----
4-Methyl-2-pentanone	U	U	U	U	U	U	U		5	1,000
Toluene	U	U	U	U	U	5 J	U		5	1,500
trans-1,3-Dichloropropene	U	U	U	U	U	U	U		5	----
1,1,2-Trichloroethane	U	U	U	U	U	U	U		5	----
Tetrachloroethene	U	U	U	U	U	U	U		5	1,400
2-Hexanone	U	U	U	U	U	U	U		5	----
Dibromochloromethane	U	U	U	U	U	U	U		5	----
1,2-Dibromoethane	U	U	U	U	U	U	U		5	----
Chlorobenzene	U	U	U	U	U	U	U		5	1,700
Ethylbenzene	U	U	U	U	U	1 J	U		5	5,500

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-24		Boring B-25	BCPMW-1	BCPMW-2	BCPMW-3			CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE IDENTIFICATION	B-2446	B-241012	B-251012	MW-11012	MW-21012	MW-324	MW-31012			
SAMPLE DEPTH	4' - 6'	10' - 12'	10' - 12'	10' - 12'	10' - 12'	2' - 4'	10' -12'			
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	5/30/2003	6/05/2003	6/10/2003	6/05/2003			
DILUTION FACTOR	1	1	1	1	1	1	1			
PERCENT SOLIDS	92	96	90	89	93	92	95			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)		(ug/kg)	(ug/kg)
m,p-Xylene	U	U	U	U	U	7	U		5	1,200 *
o-Xylene	U	U	U	U	U	6	U		5	1,200 *
Xylene (total)	U	U	U	U	U	13	U		5	1,200
Styrene	U	U	U	U	U	U	U		5	----
Bromoform	U	U	U	U	U	U	U		5	----
Isopropylbenzene	U	U	U	U	U	2 J	U		5	----
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U		5	600
1,3-Dichlorobenzene	U	U	U	U	U	U	U		5	1,600
1,4-Dichlorobenzene	U	U	U	U	U	U	U		5	8,500
1,2-Dichlorobenzene	U	U	U	U	U	U	U		5	7,900
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	U		5	----
1,2,4-Trichlorobenzene	U	U	U	U	U	4 J	U		5	3,400
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	U		5	6,000
Methyl Acetate	U	U	U	U	U	U	U		5	----
Cyclohexane	U	U	U	U	U	U	U		5	----
Methylcyclohexane	U	U	U	U	U	12	U		5	----
Total VOCs	57	0	0	36	8	144	12			10,000

Qualifiers:
U: Constituent analyzed for but not detected.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
B: Compound found in the method blank as well as the sample.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
---- : Not established.
* : Value is for total xylenes.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2

SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

TABLE B-2
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-1	Boring B-2		Boring B-3		Boring B-4		Boring B-5		
SAMPLE IDENTIFICATION	B-11012	B-268	B-21214	B-324	B-31214	B-423	B-41012	B-51214	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	10' - 12'	6' - 8'	12' - 14'	2' - 4'	12' - 14'	2' - 3'	10' - 12'	12' - 14'		
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	6/02/2003	5/28/2003	6/02/2003	5/29/2003		
DILUTION FACTOR	1	5	1	1	1	1	1	1		
PERCENT SOLIDS	85	31	92	92	95	87	95	88		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	U	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	U	U	U	U	U	U	U	77 J	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	U	U	U	U	U	U	U	360 J	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	U	U	U	U	U	U	U	490	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	U	U	U	U	U	U	39 J	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	U	540 J	U	U	U	U	U	510	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	U	U	U	U	U	U	U	230 J	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-1	Boring B-2		Boring B-3		Boring B-4		Boring B-5		
SAMPLE IDENTIFICATION	B-11012	B-268	B-21214	B-324	B-31214	B-423	B-41012	B-51214	CONTRACT	TAGM 4046
SAMPLE DEPTH	10' - 12'	6' - 8'	12' - 14'	2' - 4'	12' - 14'	2' - 3'	10' - 12'	12' - 14'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	6/02/2003	5/28/2003	6/02/2003	5/29/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	5	1	1	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	85	31	92	92	95	87	95	88		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	U	1,100 J	U	U	U	U	U	500	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	190 J	660	1,000 or MDL
Phenanthrene	U	4,000 J	U	41 J	U	40 J	U	2,500	330	50,000
Anthracene	U	760 J	U	U	U	U	U	420	330	50,000
Carbazole	U	U	U	U	U	U	U	460	330	----
Di-n-butylphthalate	U	U	U	U	U	U	U	100 J	330	8,100
Fluoranthene	U	4,700 J	U	98 J	U	94 J	U	2,500	330	50,000
Pyrene	U	5,600	U	97 J	U	97 J	U	2,500	330	50,000
Butylbenzylphthalate	U	U	U	U	U	52 J	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	U	**2,000 J**	U	53 J	U	50 J	U	**1,200**	330	224 or MDL
Chrysene	U	**3,000 J**	U	63 J	U	72 J	U	**1,500**	330	400
bis(2-Ethylhexyl)phthalate	U	48,000	1,300 J	67 J	U	83 J	U	4,300	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	U	**2,800 J**	U	88 J	U	90 J	U	**1,400**	330	1,100
Benzo(k)fluoranthene	U	**1,400 J**	U	U	U	U	U	540	330	1,100
Benzo(a)pyrene	U	**1,000 J**	U	**63 J**	U	59 J	U	**920**	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	U	U	39 J	U	U	U	570	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	U	**180 J**	330	14 or MDL
Benzo(g,h,i)perylene	U	U	U	50 J	U	40 J	U	590	330	50,000
1,1'-Biphenyl	U	U	U	U	U	U	U	110 J	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	0	26,900	0	592	0	542	0	16,229		100,000
Total CaPAHs	0	**10,200**	0	306	0	271	0	6,310		10,000
Total SVOCs	0	74,900	1,300	659	0	677	0	22,186		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-5	Boring B-6			Boring B-7					
SAMPLE IDENTIFICATION	B-52022	B-646	B-61214	B-61820	B-724	B-768	B-7810	B-71012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	20' - 22'	4' - 6'	12' - 14'	18' - 20'	2' - 4'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	5/29/2003	5/27/2003	5/27/2003	5/27/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95	89	82	97	91	89	89	90		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	U	U	U	73 J	68 J	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	U	U	U	U	50 J	100 J	130 J	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	84 J	U	U	75 J	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	U	67 J	110 J	U	94 J	470	460	90 J	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	U	58 J	150 J	U	68 J	510	710	150 J	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	U	U	U	U	U	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	U	120 J	220 J	U	160 J	87 J	120 J	U	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	U	52 J	130 J	U	94 J	U	150 J	U	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-5	Boring B-6			Boring B-7					
SAMPLE IDENTIFICATION	B-52022	B-646	B-61214	B-61820	B-724	B-768	B-7810	B-71012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	20' - 22'	4' - 6'	12' - 14'	18' - 20'	2' - 4'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	5/29/2003	5/27/2003	5/27/2003	5/27/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95	97	82	97	91	89	89	90		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	U	100 J	300 J	U	200 J	110 J	310 J	39 J	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	750	660	1,000 or MDL
Phenanthrene	U	630	1,500	U	840	620	1,400	150 J	330	50,000
Anthracene	U	170 J	270 J	U	140 J	U	180 J	U	330	50,000
Carbazole	U	120 J	200 J	U	100 J	U	100 J	U	330	----
Di-n-butylphthalate	U	U	80 J	U	62 J	U	85 J	U	330	8,100
Fluoranthene	U	990	1,800	U	610	260 J	550	48 J	330	50,000
Pyrene	U	940	1,700	U	1,100	760	1,700	58 J	330	50,000
Butylbenzylphthalate	U	U	U	U	U	U	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	U	**560**	**840**	U	**350 J**	210 J	**390**	U	330	224 or MDL
Chrysene	U	**610**	**900**	U	380	250 J	**500**	40 J	330	400
bis(2-Ethylhexyl)phthalate	U	3,600	6,200	U	1,300	1,300	1,000	2,500	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	38 J	U	330	50,000
Benzo(b)fluoranthene	U	760	1,100	U	540	270 J	430	U	330	1,100
Benzo(k)fluoranthene	U	350 J	420	U	200 J	140 J	180 J	U	330	1,100
Benzo(a)pyrene	U	**540**	**720**	U	**320 J**	**180 J**	**350 J**	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	240 J	380 J	U	110 J	66 J	170 J	U	330	3,200
Dibenzo(a,h)anthracene	U	**88 J**	**130 J**	U	U	U	**59 J**	U	330	14 or MDL
Benzo(g,h,i)perylene	U	250 J	410	U	140 J	77 J	190 J	U	330	50,000
1,1'-Biphenyl	U	U	45 J	U	U	U	U	U	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	0	6,415	10,800	0	5,184	3,500	6,989	425		100,000
Total CaPAHs	0	3,148	4,490	0	1,900	1,116	2,079	40		10,000
Total SVOCs	0	10,245	17,605	0	6,942	5,483	9,270	3,900		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-7			Boring B-8	Boring B-9		Boring B-10	Boring B-11		
SAMPLE IDENTIFICATION	B-71214	B-71618	B-72224	B-81012	B-9810	B-92426	B-101012	B-111012	CONTRACT	TAGM 4046
SAMPLE DEPTH	12' - 14'	16' - 18'	22' - 24'	10' - 12'	8' - 10'	24' - 26'	10' - 12'	10' - 12'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	5/29/2003	6/10/2003	6/10/2003	6/02/2003	5/27/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	1	1	1	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	88	81	96	91	95	96	81	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	85 J	49 J	U	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	210 J	97 J	U	U	U	U	U	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	220 J	U	U	U	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	270 J	180 J	U	U	56 J	U	U	U	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	570	340 J	U	U	U	U	U	U	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	100 J	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	U	U	U	U	U	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	48 J	U	U	U	U	U	U	U	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	49 J	U	U	U	U	U	U	U	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-7			Boring B-8	Boring B-9		Boring B-10	Boring B-11		
SAMPLE IDENTIFICATION	B-71214	B-71618	B-72224	B-81012	B-9810	B-92426	B-101012	B-111012	CONTRACT	TAGM 4046
SAMPLE DEPTH	12' - 14'	16' - 18'	22' - 24'	10' - 12'	8' - 10'	24' - 26'	10' - 12'	10' - 12'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	5/29/2003	6/10/2003	6/10/2003	6/02/2003	5/27/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	1	1	1	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	88	81	96	91	95	96	81	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	94 J	63 J	U	U	49 J	U	U	U	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	**8,600**	**6,400 DJ**	37 J	U	U	U	U	U	660	1,000 or MDL
Phenanthrene	350 J	260 J	U	U	300 J	U	U	U	330	50,000
Anthracene	U	U	U	U	54 J	U	U	U	330	50,000
Carbazole	U	U	U	U	U	U	U	U	330	----
Di-n-butylphthalate	130 J	230 J	U	U	U	U	U	U	330	8,100
Fluoranthene	180 J	110 J	U	U	100 J	U	U	U	330	50,000
Pyrene	170 J	240 J	U	U	87 J	U	U	U	330	50,000
Butylbenzylphthalate	89 J	300 J	U	U	U	U	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	65 J	U	U	U	52 J	U	U	U	330	224 or MDL
Chrysene	120 J	83 J	U	U	45 J	U	U	U	330	400
bis(2-Ethylhexyl)phthalate	24,000	33,000 DJ	380	75 J	100 J	U	U	U	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	97 J	49 J	U	U	48 J	U	U	U	330	1,100
Benzo(k)fluoranthene	44 J	U	U	U	U	U	U	U	330	1,100
Benzo(a)pyrene	58 J	U	U	U	U	U	U	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	47 J	U	U	U	U	U	U	U	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	57 J	U	U	U	U	U	U	U	330	50,000
1,1'-Biphenyl	87 J	60 J	U	U	U	U	U	U	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	1,600	985	0	0	791	0	0	0		100,000
Total CaPAHs	431	132	0	0	145	0	0	0		10,000
Total SVOCs	35,520	41,681	417	75	891	0	0	0		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-11	Boring B-12			Boring B-13		Boring B-14	Boring B-15		
SAMPLE IDENTIFICATION	B-111820	B-121618	B-122022	B-122628	B-131820	B-132426	B-141214	B-151012	CONTRACT	TAGM 4046
SAMPLE DEPTH	18' - 20'	16' - 18'	20' - 22'	26' - 28'	18' - 20'	24' - 26'	12' - 14'	10' - 12'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	5/27/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/11/2003	6/02/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	10	1	1	1	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	96	86	91	96	89	98	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	U	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	U	110 J	38 J	U	43 J	U	U	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	U	560	170 J	U	330 J	U	U	U	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	U	490	130 J	U	220 J	U	U	U	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	42 J	37 J	U	41 J	U	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	U	460	340 J	U	350 J	U	U	U	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	U	320 J	180 J	U	200 J	U	U	U	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-11	Boring B-12			Boring B-13		Boring B-14	Boring B-15		
SAMPLE IDENTIFICATION	B-111820	B-121618	B-122022	B-122628	B-131820	B-132426	B-141214	B-151012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	18' - 20'	16' - 18'	20' - 22'	26' - 28'	18' - 20'	24' - 26'	12' - 14'	10' - 12'		
DATE OF COLLECTION	5/27/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/11/2003	6/02/2003		
DILUTION FACTOR	10	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	86	91	96	89	98	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	U	640	380	U	430	U	U	U	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	U	660	1,000 or MDL
Phenanthrene	U	3,100	2,100	U	2,400	U	U	U	330	50,000
Anthracene	U	670	470	U	530	U	U	U	330	50,000
Carbazole	U	440	330 J	U	340 J	U	U	U	330	----
Di-n-butylphthalate	U	U	U	U	58 J	U	U	U	330	8,100
Fluoranthene	U	3,500	2,800	U	2,800	U	U	U	330	50,000
Pyrene	U	3,700	2,900	U	3,000	U	U	U	330	50,000
Butylbenzylphthalate	U	U	U	U	U	U	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	U	**1,900**	**1,500**	U	**1,500**	U	U	U	330	224 or MDL
Chrysene	U	**1,800**	**1,600**	U	**1,600**	U	U	U	330	400
bis(2-Ethylhexyl)phthalate	U	2,700	990	U	630	54 J	U	U	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	U	**2,300**	**2,200**	U	**2,300**	U	U	U	330	1,100
Benzo(k)fluoranthene	U	960	900	U	990	U	U	U	330	1,100
Benzo(a)pyrene	U	**1,700**	**1,600**	U	**1,600**	U	U	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	830	800	U	790	U	U	U	330	3,200
Dibenzo(a,h)anthracene	U	**280 J**	**220 J**	U	**240 J**	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	U	860	800	U	810	U	U	U	330	50,000
1,1'-Biphenyl	U	100 J	48 J	U	54 J	U	U	U	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	0	23,302	18,817	0	19,711	0	0	0		100,000
Total CaPAHs	0	9,770	8,820	0	9,020	0	0	0		10,000
Total SVOCs	0	27,462	20,533	0	21,256	54	0	0		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-16	Boring B-17								
SAMPLE IDENTIFICATION	B-161416	B-1724	B-1746	B-1768	B-171214	B-171416	B-171618	B-173436	CONTRACT	TAGM 4046
SAMPLE DEPTH	14' - 16'	2' - 4'	4' - 6'	6' - 8'	12' - 14'	14' - 16'	16' - 18'	34' - 36'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	1	1	1	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	96	91	91	90	88	91	91	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	U	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	U	160 J	330 J	140 J	180 J	150 J	220 J	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	U	160 J	590	670	740	340 J	740	U	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	U	290 J	1,200	290 J	1,800	440	690	U	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	U	120 J	U	43 J	U	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	U	200 J	2,200	800	500	340 J	490	U	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	U	110 J	3,000	490	440	210 J	300 J	U	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-16	Boring B-17								
SAMPLE IDENTIFICATION	B-161416	B-1724	B-1746	B-1768	B-171214	B-171416	B-171618	B-173436	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	14' - 16'	2' - 4'	4' - 6'	6' - 8'	12' - 14'	14' - 16'	16' - 18'	34' - 36'		
DATE OF COLLECTION	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	91	91	90	88	91	91	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	U	220 J	6,200 D	820	770	430	630	U	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	U	660	1,000 or MDL
Phenanthrene	U	1,100	17,000 D	3,900	4,700	2,500	3,000	U	330	50,000
Anthracene	U	200 J	2,700	910	1,000	480	560	U	330	50,000
Carbazole	U	96 J	2,000	630	500	310 J	360 J	U	330	----
Di-n-butylphthalate	U	U	U	U	87 J	U	U	U	330	8,100
Fluoranthene	U	820	4,100	3,100	3,100	2,600	2,100	U	330	50,000
Pyrene	U	2,600	8,200 D	3,600	5,200 D	4,300	4,400	U	330	50,000
Butylbenzylphthalate	U	U	U	U	U	U	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	U	**730**	**2,400**	**1,600**	**2,500**	**1,400**	**1,200**	U	330	224 or MDL
Chrysene	U	**680**	**2,200**	**1,400**	**2,300**	**1,400**	**1,300**	U	330	400
bis(2-Ethylhexyl)phthalate	38 J	U*	U*	U*	U*	U*	U*	U*	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	U	740	**1,700**	**1,700**	**2,400**	**1,500**	**1,500**	U	330	1,100
Benzo(k)fluoranthene	U	340 J	910	740	980	700	520	U	330	1,100
Benzo(a)pyrene	U	**560**	**1,200**	**1,200**	**1,700**	**1,000**	**920**	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	350 J	680	630	980	520	570	U	330	3,200
Dibenzo(a,h)anthracene	U	**110 J**	**240 J**	**230 J**	**340 J**	**180 J**	**190 J**	U	330	14 or MDL
Benzo(g,h,i)perylene	U	360	670	670	980	530	580	U	330	50,000
1,1'-Biphenyl	U	66 J	490	96 J	140 J	80 J	140 J	U	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	0	9,170	51,110	21,970	28,233	18,220	18,700	0		100,000
Total CaPAHs	0	3,510	9,330	7,500	**11,200**	6,700	6,200	0		10,000
Total SVOCs	38	9,892	58,130	23,616	31,380	19,410	20,410	0		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-18		Boring B-19					Boring B-20		
SAMPLE IDENTIFICATION	B-1824	B-181214	B-19810	B-191214	B-191618	B-191820	B-192830	B-2068	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	2' - 4'	12' - 14'	8' - 10'	12' - 14'	16' - 18'	18' - 20'	28' - 30'	6' - 8'		
DATE OF COLLECTION	5/29/2003	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	95	91	92	85	91	98	92		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	U	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	U	U	180 J	**1,100**	740	660	U	110 J	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	U	U	290 J	560	870	730	U	390	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	U	U	310 J	1,500	730	860	U	490	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	U	U	U	42 J	51 J	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	59 J	U	260 J	270 J	470	540	U	430	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	U	U	160 J	230 J	430	410	U	240 J	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-18		Boring B-19					Boring B-20		
SAMPLE IDENTIFICATION	B-1824	B-181214	B-19810	B-191214	B-191618	B-191820	B-192830	B-2068	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	2' - 4'	12' - 14'	8' - 10'	12' - 14'	16' - 18'	18' - 20'	28' - 30'	6' - 8'		
DATE OF COLLECTION	5/29/2003	5/29/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	95	91	92	85	91	98	92		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	44 J	U	350 J	390	750	770	U	490	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	U	660	1,000 or MDL
Phenanthrene	440	U	1,800	2,200	3,000	3,400	U	3,500	330	50,000
Anthracene	90 J	U	300 J	240 J	570	630	U	930	330	50,000
Carbazole	84 J	U	200 J	180 J	340 J	340 J	U	430	330	----
Di-n-butylphthalate	U	U	U	U	U	U	U	U	330	8,100
Fluoranthene	800	U	1,400	1,200	2,300	2,000	U	3,200	330	50,000
Pyrene	740	U	3,200	3,800	4,500	4,000 D	U	3,000 D	330	50,000
Butylbenzylphthalate	U	U	U	U	U	U	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	**440**	U	**860**	**1,100**	**1,400**	**1,500**	U	**1,900**	330	224 or MDL
Chrysene	**490**	U	**990**	**1,100**	**1,300**	**1,600**	U	**1,900**	330	400
bis(2-Ethylhexyl)phthalate	170 J	U	U*	U*	6,300 BE	5,400 BJ*	U*	U*	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	620	U	960	1,100	**1,400**	**1,500**	U	**2,200**	330	1,100
Benzo(k)fluoranthene	260 J	U	470	590	550	780	U	800	330	1,100
Benzo(a)pyrene	**440**	U	**700**	**620**	**910**	**1,200**	U	**1,500**	330	61 or MDL
Indeno(1,2,3-cd)pyrene	270 J	U	430	470	510	700	U	830	330	3,200
Dibenzo(a,h)anthracene	**78 J**	U	**150 J**	**150 J**	**170 J**	**240 J**	U	**100 J**	330	14 or MDL
Benzo(g,h,i)perylene	290 J	U	420	470	510	710	U	890	330	50,000
1,1'-Biphenyl	U	U	U	U	160 J	180 J	U	98 J	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	5,061	0	12,580	14,260	19,252	20,351	0	22,060		100,000
Total CaPAHs	2,598	0	4,560	5,130	6,240	7,520	0	9,230		10,000
Total SVOCs	5,315	0	13,430	17,270	27,952	28,201	0	23,428		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-20							Boring B-21		
SAMPLE IDENTIFICATION	B-20810	B-201012	B-201214	B-201416	B-201618	B-201820	B-202426	B-211012	CONTRACT	TAGM 4046
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	24' - 26'	10' - 12'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/02/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	1	1	1	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	92	93	89	92	91	91	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	44 J	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	390	240 J	**1,100**	630	**1,200**	**930**	U	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	450	440	550	600	740	660	U	U	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	670	390	570	690	1,100	710	U	U	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	U	U	U	U	U	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	260 J	290 J	410	360	250 J	280 J	U	U	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	160 J	180 J	270 J	210 J	180 J	200 J	U	U	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-20							Boring B-21		
SAMPLE IDENTIFICATION	B-20810	B-201012	B-201214	B-201416	B-201618	B-201820	B-202426	B-211012	CONTRACT	TAGM 4046
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	24' - 26'	10' - 12'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/02/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	1	1	1	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	92	93	89	92	91	91	97	97		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	320 J	360	550	440	360	380	U	U	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	U	660	1,000 or MDL
Phenanthrene	1,800	1,700	3,000	2,500	1,800	2,000	U	U	330	50,000
Anthracene	270 J	310 J	530	520	300 J	300 J	U	U	330	50,000
Carbazole	190 J	210 J	350 J	270 J	180 J	210 J	U	U	330	----
Di-n-butylphthalate	U	U	U	U	U	U	U	U	330	8,100
Fluoranthene	1,300	1,600	2,700	2,500	1,300	1,300	U	U	330	50,000
Pyrene	3,200	2,400	4,400	5,000	2,800	2,700	U	U	330	50,000
Butylbenzylphthalate	U	U	U	U	U	U	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	**1,000**	**770**	**1,400**	**1,600**	**800**	**680**	U	U	330	224 or MDL
Chrysene	**970**	**950**	**1,500**	**1,600**	**930**	**770**	U	U	330	400
bis(2-Ethylhexyl)phthalate	U*	U*	U*	U*	U*	U*	U*	U	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	1,000	1,100	**1,500**	**1,500**	1,100	870	U	U	330	1,100
Benzo(k)fluoranthene	560	410	840	840	380	380	U	U	330	1,100
Benzo(a)pyrene	**730**	**690**	**1,200**	**1,100**	**660**	**550**	U	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	550	460	750	660	420	370	U	U	330	3,200
Dibenzo(a,h)anthracene	**150 J**	**170 J**	**260 J**	**240 J**	**160 J**	**120 J**	U	U	330	14 or MDL
Benzo(g,h,i)perylene	620	520	850	710	500	420	U	U	330	50,000
1,1'-Biphenyl	130 J	92 J	140 J	140 J	200 J	120 J	U	U	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	13,180	12,170	20,440	20,170	12,500	11,780	0	0		100,000
Total CaPAHs	4,960	4,550	7,450	7,540	4,450	3,740	0	0		10,000
Total SVOCs	14,720	13,282	22,914	22,110	15,360	13,950	0	0		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
[ ] : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-22									
SAMPLE IDENTIFICATION	B-2246	B-2268	B-22810	B-221012	B-221214	B-221416	B-221618	B-222830	CONTRACT	TAGM 4046
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	28' - 30'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	10	1	10	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	95	93	91	92	91	95	92	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	**270 J**	**760 J**	**1,600**	**920**	**720**	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	U	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	330	----
4-Methylphenol	62 J	U	160 J	630 J	**1,700**	430	**930**	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	U	88 J	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	330	400
Naphthalene	99 J	580 J	260 J	710 J	1,200	350	520	U	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	140 J	1,200 J	460	1,600 J	2,000	480	780	U	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	U	U	44 J	U	82 J	U	45 J	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	130 J	570 J	400	470 J	650	230 J	270 J	U	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	58 J	U	200 J	U	360	130 J	180 J	U	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-22									
SAMPLE IDENTIFICATION	B-2246	B-2268	B-22810	B-221012	B-221214	B-221416	B-221618	B-222830	CONTRACT	TAGM 4046
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	28' - 30'	REQUIRED	RECOMMENDED
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	DETECTION	SOIL CLEANUP
DILUTION FACTOR	1	10	1	10	1	1	1	1	LIMIT	OBJECTIVES
PERCENT SOLIDS	95	93	91	92	91	95	92	96		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Fluorene	140 J	720 J	490	520 J	730	250 J	380	U	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	U	660	1,000 or MDL
Phenanthrene	870	3,900	3,000	2,800 J	3,900	1,400	2,000	U	330	50,000
Anthracene	140 J	390 J	640	410 J	1,100	200 J	310 J	U	330	50,000
Carbazole	98 J	U	380	420 J	U	310 J	260 J	U	330	----
Di-n-butylphthalate	U	U	50 J	460 J	300 J	95 J	190 J	U	330	8,100
Fluoranthene	1,100	2,500 J	3,300	3,100 J	2,700	1,800	1,800	U	330	50,000
Pyrene	1,100	2,600 J	3,400	2,700 J	140 J	1,400	2,200	U	330	50,000
Butylbenzylphthalate	U	U	U	U	U	68 J	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	**480**	**1,000 J**	**1,800**	**1,400 J**	38 J	**800**	**1,000**	U	330	224 or MDL
Chrysene	**610**	**1,400 J**	**1,800**	**1,600 J**	**1,800**	**930**	**1,100**	U	330	400
bis(2-Ethylhexyl)phthalate	1,000	2,500 J	1,100	2,800 J	4,100	890 B	1,800	U	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	790	**1,400 J**	**2,500**	**2,100 J**	**2,700**	**1,200**	**1,400**	U	330	1,100
Benzo(k)fluoranthene	390	650 J	880	780 J	860	630	470	U	330	1,100
Benzo(a)pyrene	**530**	**900 J**	**1,700**	**1,300 J**	**1,300**	**800**	**1,000**	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	310 J	410 J	890	860 J	36 J	380	660	U	330	3,200
Dibenzo(a,h)anthracene	**94 J**	U	**290 J**	U	**280 J**	**130 J**	**220 J**	U	330	14 or MDL
Benzo(g,h,i)perylene	300 J	550 J	880	840 J	1,000	420	710	U	330	50,000
1,1'-Biphenyl	U	U	69 J	U	220 J	66 J	100 J	U	330	----
Acetophenone	U	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	U	330	----
Total PAHs	7,083	17,570	22,274	19,590	18,516	10,920	14,085	0		100,000
Total CaPAHs	3,204	5,760	9,860	8,040	7,014	4,870	5,850	0		10,000
Total SVOCs	8,441	21,270	24,963	26,260	28,796	14,397	19,045	0		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-24		Boring B-25	BCPMW-1	BCPMW-2	BCPMW-3		CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE IDENTIFICATION	B-2446	B-241012	B-251012	MW-11012	MW-21012	MW-324	MW-31012		
SAMPLE DEPTH	4' - 6'	10' - 12'	10' - 12'	10' - 12'	10' - 12'	2' - 4'	10' -12'		
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	5/30/2003	6/05/2003	6/10/2003	6/05/2003		
DILUTION FACTOR	1	1	1	1	1	1	1		
PERCENT SOLIDS	92	96	90	89	93	92	95		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	330	----
2-Chlorophenol	U	U	U	U	U	U	U	330	800
2-Methylphenol	U	U	U	U	U	U	U	330	100 or MDL
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	330	----
4-Methylphenol	U	U	U	U	U	57 J	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	330	----
Hexachloroethane	U	U	U	U	U	U	U	330	----
Nitrobenzene	U	U	U	U	U	U	U	330	200 or MDL
Isophorone	U	U	U	U	U	U	U	330	4,400
2-Nitrophenol	U	U	U	U	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	U	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	U	U	U	U	330	400
Naphthalene	240 J	U	U	U	U	96 J	U	330	13,000
4-Chloroaniline	U	U	U	U	U	U	U	330	220 or MDL
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	330	----
Hexachlorobutadiene	U	U	U	U	U	40 J	U	330	----
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	330	240 or MDL
2-Methylnapthalene	200 J	U	U	U	U	100 J	U	330	36,400
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	660	100
2-Chloronapthalene	U	U	U	U	U	U	U	330	----
2-Nitroaniline	U	U	U	U	U	U	U	660	430 or MDL
Dimethylphthalate	U	U	U	U	U	U	U	330	2,000
Acenaphthylene	160 J	U	U	U	U	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	U	U	U	U	330	1,000
3-Nitroaniline	U	U	U	U	U	U	U	660	500 or MDL
Acenaphthene	520	U	U	U	U	100 J	U	330	50,000
2,4-Dinitrophenol	U	U	U	U	U	U	U	660	200 or MDL
4-Nitrophenol	U	U	U	U	U	U	U	660	100 or MDL
Dibenzofuran	390	U	U	U	U	45 J	U	330	6,200
2,4-Dinitrotoluene	U	U	U	U	U	U	U	330	----

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	Boring B-24		Boring B-25	BCPMW-1	BCPMW-2	BCPMW-3		CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE IDENTIFICATION	B-2446	B-241012	B-251012	MW-11012	MW-21012	MW-324	MW-31012		
SAMPLE DEPTH	4' - 6'	10' - 12'	10' - 12'	10' - 12'	10' - 12'	2' - 4'	10' -12'		
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	5/30/2003	6/05/2003	6/10/2003	6/05/2003		
DILUTION FACTOR	1	1	1	1	1	1	1		
PERCENT SOLIDS	92	96	90	89	93	92	95		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Diethylphthalate	U	U	U	U	U	U	U	330	7,100
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	330	----
Fluorene	840	72 J	U	U	U	84 J	U	330	50,000
4-Nitroanline	U	U	U	U	U	U	U	660	----
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	660	----
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	330	----
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	330	----
Hexachlorobenzene	U	U	U	U	U	U	U	330	410
Pentachlorophenol	U	U	U	U	U	U	U	660	1,000 or MDL
Phenanthrene	5,100	370	U	U	U	520	U	330	50,000
Anthracene	1,100	89 J	U	U	U	110 J	U	330	50,000
Carbazole	340 J	U	U	U	U	68 J	U	330	----
Di-n-butylphthalate	45 J	U	U	U	U	53 J	U	330	8,100
Fluoranthene	4,700	280 J	U	U	48 J	600	U	330	50,000
Pyrene	5,100	240 J	U	U	43 J	670	U	330	50,000
Butylbenzylphthalate	U	U	U	U	U	U	U	330	50,000
3,3'-Dichlorobenzidine	U	U	U	U	U	U	U	330	----
Benzo(a)anthracene	**2,800**	120 J	U	U	U	**320 J**	U	330	224 or MDL
Chrysene	**2,500**	140 J	U	U	U	400	U	330	400
bis(2-Ethylhexyl)phthalate	56 J	U	U	U	U	67 J	37 J	330	50,000
Di-n-octylphthalate	U	U	U	U	U	U	U	330	50,000
Benzo(b)fluoranthene	**3,400**	110 J	U	U	U	370	U	330	1,100
Benzo(k)fluoranthene	**1,300**	45 J	U	U	U	140 J	U	330	1,100
Benzo(a)pyrene	**2,400**	**78 J**	U	U	U	**230 J**	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	1,300	U	U	U	U	140 J	U	330	3,200
Dibenzo(a,h)anthracene	**400**	U	U	U	U	**54 J**	U	330	14 or MDL
Benzo(g,h,i)perylene	1,600	36 J	U	U	U	160 J	U	330	50,000
1,1'-Biphenyl	86 J	U	U	U	U	U	U	330	----
Acetophenone	U	U	U	U	U	U	U	330	----
Atrazine	U	U	U	U	U	U	U	330	----
Benzaldehyde	U	U	U	U	U	U	U	330	----
Caprolactam	U	U	U	U	U	U	U	330	----
Total PAHs	33,460	1,580	0	0	91	3,994	0		100,000
Total CaPAHs	**14,100**	493	0	0	0	1,654	0		10,000
Total SVOCs	34,577	1,580	0	0	91	4,424	37		500,000

Qualifiers:
U: Constituent analyzed for but not detected.
D: Result taken from reanalysis at a secondary dilution.
J*: Result qualified as estimated based on validation criteria.
U*: Result qualified as non-detect based on validation criteria.
J: Constituent concentration found below CRDL, value estimated.

Notes:
---- : Not established.
MDL : Method Detection Limit.
Bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3

SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

TABLE B-3
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-1		Boring B-2							
SAMPLE IDENTIFICATION	B-1810	B-11012	B-202	B-222	B-224	B-246	B-268	B-2810	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'		
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003		
DILUTION FACTOR	1	1	1	10	1	1	1	1		
PERCENT SOLIDS	96	85	87	93	82	73	31	82		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	U	2.900	0.630	0.180 P	U	0.900	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	0.340 P	0.580	0.550	0.310	2.700	0.830	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	0	0.340	**3.480**	1.180	0.490	2.700	1.730		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-2			Boring B-3						
SAMPLE IDENTIFICATION	B-21011	B-21112	B-21214	B-302	B-322	B-324	B-346	B-368	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	10' - 11'	11' - 12'	12' - 14'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'		
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	43	95	92	90	93	92	97	84		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	3.100 P	U	U	1.400	0.910	0.290	U	U	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	2.400	0.120	0.160	0.360	0.590	0.180	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	5.500	0.120	0.160	**1.760**	**1.500**	0.470	0	0		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-3		Boring B-4							
SAMPLE IDENTIFICATION	B-3810	B-31214	B-402	B-422	B-423	B-434	B-446	B-468	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	8' - 10'	12' - 14'	0 - 2"	2" - 2'	2' - 3'	3' - 4'	4' - 6'	6' - 8'		
DATE OF COLLECTION	5/28/20003	6/02/2003	5/28/20003	5/28/20003	5/28/20003	5/28/20003	5/28/20003	5/28/20003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	93	95	79	89	87	95	96	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	0.360	1.200	1.300	U	U	U	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	0.220 P	0.320	0.350 P	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	0	0.580	**1.520**	1.650	0	0	0		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-4		Boring B-5							
SAMPLE IDENTIFICATION	B-4810	B-41012	B-5810	B-51012	B-51214	B-51416	B-51618	B-51820	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	8' - 10'	10' - 12'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'		
DATE OF COLLECTION	6/02/2003	6/02/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003		
DILUTION FACTOR	1	1	10	50	50	50	50	1		
PERCENT SOLIDS	96	95	88	78	88	83	85	87		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	11.000	58.000	62.000	50.000	65.000	0.062 P	0.033	---
Aroclor-1248	U	0.065 P	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	53.000	18.000	56.000	0.100	0.033	---
Aroclor-1260	U	U	U	8.000	U	U	U	U	0.033	---
TOTAL PCBs	0	0.065	**11.000**	**66.000**	**115.000**	**68.000**	**121.000**	0.162		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-5	Boring B-6								
SAMPLE IDENTIFICATION	B-52022	B-602	B-622	B-624	B-646	B-6810	B-61012	B-61214	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	20' - 22'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	8' - 10'	10' - 12'	12' - 14'		
DATE OF COLLECTION	5/29/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003		
DILUTION FACTOR	1	10	50	50	20	10	20	10		
PERCENT SOLIDS	95	83	70	82	89	89	87	82		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	3.600 P	92.000	36.000	34.000	15.000	32.000	18.000	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	**3.600**	**92.000**	**36.000**	**34.000**	**15.000**	**32.000**	**18.000**		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-6			Boring B-7						
SAMPLE IDENTIFICATION	B-61416	B-61618	B-61820	B-702	B-722	B-724	B-746	B-768	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	14' - 16'	16' - 18'	18' - 20'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'		
DATE OF COLLECTION	5/27/2003	5/27/2003	5/27/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	10	10	10	50		
PERCENT SOLIDS	98	97	97	73	92	91	91	89		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.160	0.310	0.220	U	16.000 P	11.000	U	5.000	0.033	---
Aroclor-1248	U	U	U	U	U	U	7.400	U	0.033	---
Aroclor-1254	U	U	U	0.330	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	0.780	U	U	U	0.033	---
TOTAL PCBs	0.160	0.310	0.220	0.330	**16.780**	**11.000**	7.400	5.000		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-7									
SAMPLE IDENTIFICATION	B-7810	B-71012	B-71214	B-71416	B-71618	B-71820	B-72022	B-72224	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	20' - 22'	22' - 24'		
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	20	1	1	10	1	1	1	1		
PERCENT SOLIDS	89	90	88	59	81	62	97	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	12.000	0.580	0.600 P	4.900	1.000	0.790 P	U	U	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	0.420	0.550	2.700	0.820	2.100	U	U	0.033	---
TOTAL PCBs	**12.000**	1.000	1.150	7.600	1.820	2.890	0	0		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-8							Boring B-9		
SAMPLE IDENTIFICATION	B-802	B-822	B-824	B-846	B-868	B-8810	B-81012	B-9810	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	8' - 10'		
DATE OF COLLECTION	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	6/10/2003		
DILUTION FACTOR	1	1	1	5	10	1	1	5		
PERCENT SOLIDS	81	88	90	92	92	95	91	95		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	0.900	0.960	3.300	9.000	U	U	2.200	0.033	---
Aroclor-1248	U	U	U	U	U	U	0.130	U	0.033	---
Aroclor-1254	0.500	0.320 P	0.550	U	U	0.043	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0.500	**1.220**	1.510	3.300	9.000	0.043	0.130	2.200		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-9							Boring B-10		
SAMPLE IDENTIFICATION	B-91012	B-91214	B-91416	B-91618	B-92022	B-92224	B-92426	B-1002	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	10' - 12'	12' - 14'	14' - 16'	16' - 18'	20' - 22'	22' - 24'	24' - 26'	0 - 2"		
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/02/2003		
DILUTION FACTOR	1	1	1	5	1	1	1	1		
PERCENT SOLIDS	98	94	95	95	97	94	96	78		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	1.400	2.100	0.120	U	0.090	U	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	0.370	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	0	1.400	2.100	0.120	0	0.090	0.370		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-10					Boring B-11				
SAMPLE IDENTIFICATION	B-1022	B-1024	B-1068	B-10810	B-101012	B-1102	B-1122	B-1124	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	2" - 2'	2' - 4'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'		
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	5/27/2003	5/27/2003	5/27/2003		
DILUTION FACTOR	10	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	97	79	100	100	75	92	92		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	U	U	U	0.180 P	0.160 P	0.098 P	0.033	---
Aroclor-1248	1.400	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	0.370	0.260	0.080	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	**1.400**	0	0	0	0	0.550	0.420	0.178		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
☐ : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-11									
SAMPLE IDENTIFICATION	B-1146	B-1168	B-11810	B-111012	B-111214	B-111416	B-111618	B-111820	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'		
DATE OF COLLECTION	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003		
DILUTION FACTOR	1	1	10	10	5	5	10	10		
PERCENT SOLIDS	88	86	92	96	98	92	95	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.380 P	0.340 P	U	U	U	U	U	U	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	0.260	0.290	4.800	2.700	2.400	2.900	4.900	3.800	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0.640	0.630	4.800	2.700	2.400	2.900	4.900	3.800		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-12									
SAMPLE IDENTIFICATION	B-12810	B-121012	B-121214	B-121416	B-121618	B-121820	B-122022	B-122224	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	20' - 22'	22' - 24'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	1	20	20	50	100	100	100	100		
PERCENT SOLIDS	84	82	83	87	86	90	91	88		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	1.800	19.000	22.000	13.000	120.000	62.000	69.000	71.000	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	0.240	1.600	3.700	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	2.040	**20.600**	**25.700**	**13.000**	**120.000**	**62.000**	**69.000**	**71.000**		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-12		Boring B-13							
SAMPLE IDENTIFICATION	B-122526	B-122628	B-13810	B-131012	B-131214	B-131416	B-131618	B-131820	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	25' - 26'	26' - 28'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	1	1	20	50	50	200	20	50		
PERCENT SOLIDS	88	96	87	85	89	90	90	89		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.090	0.045	15.000	27.000	36.000	100.000	19.000	31.000	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	3.200	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0.090	0.045	**15.000**	**27.000**	**36.000**	**100.000**	**22.200**	**31.000**		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-13			Boring B-14			Boring B-15			
SAMPLE IDENTIFICATION	B-132022	B-132224	B-132426	B-14810	B-141012	B-141214	B-1502	B-1522	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	20' - 22'	22' - 24'	24' - 26'	8' - 10'	10' - 12'	12' - 14'	0 - 2"	2" - 2'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/11/2003	6/11/2003	6/11/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	100	1	1	1	1	1	1	1		
PERCENT SOLIDS	90	95	98	96	96	97	83	90		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	67.000	0.110	0.073	0.270 P	0.140 P	0.063 P	0.120 P	0.340 P	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	0.280	0.140	0.053	0.230 P	0.340	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	**67.000**	0.110	0.073	0.550	0.280	0.116	0.350	0.680		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-15				Boring B-16					
SAMPLE IDENTIFICATION	B-1546	B-1568	B-15810	B-151012	B-1602	B-1622	B-1624	B-1646	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'	4' - 6'		
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	6/02/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003		
DILUTION FACTOR	1	1	1	20	100	1	1	1		
PERCENT SOLIDS	97	94	96	97	93	100	89	94		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	U	11.000	79.000	0.720	0.140	0.370	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	0.180	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	0	0	**11.000**	**79.000**	0.900	0.140	0.370		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-16					Boring B-17				
SAMPLE IDENTIFICATION	B-1668	B-16810	B-161012	B-161214	B-161416	B-1702	B-1722	B-1724	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	0 - 2"	2" - 2'	2' - 4'		
DATE OF COLLECTION	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	50		
PERCENT SOLIDS	87	98	98	97	96	91	94	91		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	U	U	U	U	U	56.000	0.033	---
Aroclor-1248	U	U	U	U	U	0.073	0.890	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	0	0	0	0	0.073	0.890	**56.000**		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-17									
SAMPLE IDENTIFICATION	B-1746	B-1768	B-17810	B-171012	B-171214	B-171416	B-171618	B-171820	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'		
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	100	20	100	20	50	100	100	100		
PERCENT SOLIDS	91	90	90	90	88	91	91	90		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	69.000	16.000	61.000	19.000	35.000	50.000	70.000	90.000	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	**69.000**	**16.000**	**61.000**	**19.000**	**35.000**	**50.000**	**70.000**	**90.000**		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-17							Boring B-18		
SAMPLE IDENTIFICATION	B-172022	B-172224	B-172426	B-172830	B-173032	B-173234	B-173436	B-1802	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	20' - 22'	22' - 24'	24' - 26'	28' - 30'	30' - 32'	32' - 34'	34' - 36'	0 - 2"		
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	5/29/2003		
DILUTION FACTOR	10	20	20	1	20	20	1	1		
PERCENT SOLIDS	89	91	89	96	98	92	96	78		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	8.600	22.000	18.000	1.200	23.000	25.000	0.150	0.640	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	0.330 P	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	8.600	**22.000**	**18.000**	1.200	**23.000**	**25.000**	0.150	0.970		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
bold : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-18							Boring B-19		
SAMPLE IDENTIFICATION	B-1822	B-1824	B-1846	B-1868	B-18810	B-181012	B-181214	B-19810	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	8' - 10'		
DATE OF COLLECTION	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	20		
PERCENT SOLIDS	91	89	91	87	96	95	95	91		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	1.300	1.600	0.240	0.900	U	0.069	U	24.000	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	0.250	0.330	0.072	0.110	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	**1.550**	1.930	0.312	1.010	0	0.069	0	**24.000**		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-19									
SAMPLE IDENTIFICATION	B-191012	B-191214	B-191618	B-191820	B-192224	B-192426	B-192627	B-192728	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	10' - 12'	12' - 14'	16' - 18'	18' - 20'	22' - 24'	24' - 26'	26' - 27'	27' - 28'		
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	50	20	50	50	5	20	20	1		
PERCENT SOLIDS	91	92	85	91	91	91	90	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	34.000	14.000	45.000	24.000	3.100	14.000	14.000	0.410	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	**34.000**	**14.000**	**45.000**	**24.000**	3.100	**14.000**	**14.000**	0.410		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-19	Boring B-20								
SAMPLE IDENTIFICATION	B-192830	B-20810	B-201012	B-201214	B-201416	B-201618	B-201820	B-2022524	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	28' - 30'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	22.5' - 24'		
DATE OF COLLECTION	6/09/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	20	20	20	50	20	50	1		
PERCENT SOLIDS	98	92	93	89	92	91	91	98		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	16.000	19.000	19.000	46.000	20.000	41.000	0.065	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	**16.000**	**19.000**	**19.000**	**46.000**	**20.000**	**41.000**	0.065		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
☐ : Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-20	Boring B-21								
SAMPLE IDENTIFICATION	B-202426	B-2102	B-2122	B-2124	B-2146	B-2168	B-21810	B-211012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	24' - 26'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	6/03/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	97	87	90	93	90	97	97	97		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.092	U	0.093 P	U	U	U	U	U	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	0.120 P	0.150	U	0.061 P	U	U	U	0.033	---
Aroclor-1260	U	U	U	0.084	U	U	U	U	0.033	---
TOTAL PCBs	0.092	0.120	0.243	0.084	0.061	0	0	0		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-22									
SAMPLE IDENTIFICATION	B-22810	B-221012	B-221214	B-221416	B-221618	B-221820	B-222022	B-222224	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	20' - 22'	22' - 24'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	20	10	20	10	20	10	10	10		
PERCENT SOLIDS	91	92	91	95	92	90	88	87		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	21.000	9.400	24.000	9.200	19.000	8.000	7.600	5.200	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	3.500	3.200	4.900	1.500	2.800	0.830	0.800	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	**24.500**	**12.600**	**28.900**	**10.700**	**21.800**	8.830	8.400	5.200		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-22		Boring B-23							
SAMPLE IDENTIFICATION	B-222526	B-222830	B-2302	B-2322	B-2324	B-2346	B-2368	B-23810	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	25' - 26'	28' - 30'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	96	54	84	82	74	83	93		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.230	0.061	U	U	U	2.000	U	0.074	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	0.260	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	0.098	0.088	0.033	---
TOTAL PCBs	0.230	0.061	0	0	0	2.260	0.098	0.162		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-23	Boring B-24								
SAMPLE IDENTIFICATION	B-231012	B-2402	B-2422	B-2424	B-2446	B-2468	B-24810	B-241012	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	10' - 12'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	94	80	92	90	92	95	97	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.046	U	U	0.180 P	0.330	U	U	U	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	0.061 P	U	U	U	U	0.033	---
Aroclor-1260	0.038	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0.084	0	0	0.241	0.330	0	0	0		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Boring B-25							BCPMW-1		
SAMPLE IDENTIFICATION	B-2502	B-2522	B-2524	B-2546	B-2568	B-25810	B-251012	MW-102	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"		
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	5/30/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	88	95	91	95	97	97	90	100		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.071 P	U	U	U	U	U	U	0.150 P	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	0.072	U	U	U	U	U	U	0.190 P	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0.143	0	0	0	0	0	0	0.340		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	BCPMW-1						BCPMW-2			
SAMPLE IDENTIFICATION	MW-122	MW-124	MW-146	MW-168	MW-1810	MW-11012	MW-202	MW-222	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'		
DATE OF COLLECTION	5/30/2003	5/30/2003	5/30/2003	5/30/2003	5/30/2003	5/30/2003	6/05/2003	6/05/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	100	100	100	92	97	89	81	93		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	U	U	U	U	0.340	0.760	0.033	---
Aroclor-1248	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1254	U	U	U	U	U	U	0.250 P	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	U	0.140	0.033	---
TOTAL PCBs	0	0	0	0	0	0	0.590	0.900		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	BCPMW-2					BCPMW-3				
SAMPLE IDENTIFICATION	MW-224	MW-246	MW-268	MW-2810	MW-21012	MW-302	MW-322	MW-324	CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'		
DATE OF COLLECTION	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	10		
PERCENT SOLIDS	91	90	93	97	93	78	92	91		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	U	U	0.033	---
Aroclor-1242	0.180	0.530	U	U	U	0.800	1.700	7.300	0.033	---
Aroclor-1248	U	U	U	0.044	U	U	U	U	0.033	---
Aroclor-1254	U	0.240 P	U	U	U	0.410	0.280	U	0.033	---
Aroclor-1260	0.140	U	U	U	U	U	U	1.200	0.033	---
TOTAL PCBs	0.320	0.770	0	0.044	0	**1.210**	**1.980**	8.500		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	BCPMW-3									
SAMPLE IDENTIFICATION	MW-346	MW-368	MW-3810	MW-31012					CONTRACT REQUIRED DETECTION LIMIT	TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'						
DATE OF COLLECTION	6/05/2003	6/05/2003	6/05/2003	6/05/2003						
DILUTION FACTOR	5	1	1	1						
PERCENT SOLIDS	92	85	89	95						
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg					(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U					0.033	---
Aroclor-1221	U	U	U	U					0.067	---
Aroclor-1232	U	U	U	U					0.033	---
Aroclor-1242	3.300	0.840	U	U					0.033	---
Aroclor-1248	U	U	U	U					0.033	---
Aroclor-1254	U	U	U	U					0.033	---
Aroclor-1260	U	U	U	U					0.033	---
TOTAL PCBs	3.300	0.840	0	0						1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
B: Constituent concentration is less than the CRDL, but greater than the IDL.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >25%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE B-4

SOIL SAMPLING RESULTS
RCRA/TAL METALS AND HEXAVALENT CHROMIUM

TABLE B-4
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-1		Boring B-2							
SAMPLE IDENTIFICATION	B-1810	B-11012	B-202	B-222	B-224	B-246	B-268	B-2810	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'		
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	85	87	93	82	73	31	82		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	19,500	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	33.6	N/A	3.0	---
Arsenic	1	1.5	9.3	4.2	**21.8**	6.7	11.8	7.5	3.0	3 - 12*
Barium	5.3 B	6.2 B	33.4	17.6	39.5	48.6	227	78.7	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	N/A	N/A	0.4 B	N/A	0.5	0 - 1.75
Cadmium	U	0.038 B	2.7	2.5	**17.1**	9.2	**129**	**23.3**	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	N/A	N/A	26,500	N/A	240.0	130 - 35,000*
Chromium	2.1	2.5	**89.3**	**82.3**	**428**	**270**	**1,780**	**494**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	N/A	N/A	8.8	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	N/A	N/A	**1,420**	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	N/A	N/A	34,200	N/A	26.0	2,000 - 550,000
Lead	1.1	1.1	44.6	14.5	47.2	62.8	445	98.3	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	N/A	N/A	2,170	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	N/A	N/A	291	N/A	0.8	50 - 5,000
Mercury	0.025 B	U	0.13	0.15	**0.34**	**0.38**	**5.2**	**0.49**	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	N/A	N/A	**88.3**	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	N/A	N/A	389	N/A	78.0	8,500 - 43,000*
Selenium	U	0.59 B	0.75 B	U	2	U	U	2.4	9.0	0.1 - 3.9
Silver	0.14 B	0.2 B	1.8	2.9	1.4 B	3.6	9.8	2.4	2.0	---
Sodium	N/A	N/A	N/A	N/A	N/A	N/A	299	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	N/A	N/A	0.98 B	N/A	3.0	---
Vanadium	N/A	N/A	N/A	N/A	N/A	N/A	20.9	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	N/A	N/A	**4,820**	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	22.20	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
[ ] : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-2			Boring B-3						
SAMPLE IDENTIFICATION	B-21011	B-21112	B-21214	B-302	B-322	B-324	B-346	B-368	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	10' - 11'	11' - 12'	12' - 14'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'		
DATE OF COLLECTION	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003	5/28/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	43	95	92	90	93	92	97	84		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	N/A	5,330	N/A	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	N/A	0.17 B	N/A	N/A	3.0	---
Arsenic	4.9	4.7	1.2	4.8	2.8	2.7	2.3	3.7	3.0	3 - 12*
Barium	159	10.5	7.7 B	33.7	23.9	16.6	6.7 B	18.4	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	N/A	0.07 B	N/A	N/A	0.5	0 - 1.75
Cadmium	**90.2**	0.49	0.16 B	2.9	2.9	1.6	0.29	0.095 B	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	N/A	6,430	N/A	N/A	240.0	130 - 35,000*
Chromium	**1,260**	18.2	4.8	**135**	**193**	**62**	17.4	11.6	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	N/A	2.1 B	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	N/A	11.5	N/A	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	N/A	7,390	N/A	N/A	26.0	2,000 - 550,000
Lead	293	2.6	1.7	25.7	16.1	13.1	2.6	4.5	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	N/A	3,010	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	N/A	88.4	N/A	N/A	0.8	50 - 5,000
Mercury	**3**	0.016 B	0.026 B	0.076	0.057	0.037	U	U	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	N/A	4.4	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	N/A	261	N/A	N/A	78.0	8,500 - 43,000*
Selenium	**5**	U	U	0.64 B	0.56 B	U	1.6	0.9 B	9.0	0.1 - 3.9
Silver	7.4	0.3 B	0.32 B	1.3 B	2.6	1.1 B	0.71 B	0.23 B	2.0	---
Sodium	N/A	N/A	N/A	N/A	N/A	21.6 B	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	N/A	U	N/A	N/A	3.0	---
Vanadium	N/A	N/A	N/A	N/A	N/A	11.8	N/A	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	N/A	**331**	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	5.92	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
[ ] : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-3		Boring B-4							
SAMPLE IDENTIFICATION	B-3810	B-31214	B-402	B-422	B-423	B-434	B-446	B-468	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	8' - 10'	12' - 14'	0 - 2"	2" - 2'	2' - 3'	3' - 4'	4' - 6'	6' - 8'		
DATE OF COLLECTION	5/28/20003	6/02/2003	5/28/20003	5/28/20003	5/28/20003	5/28/20003	5/28/20003	5/28/20003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	93	95	79	89	87	95	96	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	2,010	N/A	N/A	N/A	7,510	N/A	N/A	784	17.0	33,000
Antimony	U	N/A	N/A	N/A	0.36 B	N/A	N/A	U	3.0	---
Arsenic	6.2	0.72 B	6	4.4	6.9	0.78 B	0.21 B	1	3.0	3 - 12*
Barium	5.2 B	4.1 B	35.1	22.1	29.5	4.4 B	4.9 B	5.5 B	4.0	15 - 600
Beryllium	0.11 B	N/A	N/A	N/A	0.12 B	N/A	N/A	0.047 B	0.5	0 - 1.75
Cadmium	0.083 B	U	0.96	1.5	1.7	0.26	0.061 B	0.039 B	0.7	0.1 - 1, (10***)
Calcium	15.6 B	N/A	N/A	N/A	913	N/A	N/A	U	240.0	130 - 35,000*
Chromium	16.8	2	**69**	**114**	**105**	4.7	6.6	8.2	0.6	1.5 - 40*, (50***)
Cobalt	1 B	N/A	N/A	N/A	2.6	N/A	N/A	0.54 B	0.9	2.5 - 60*
Copper	5.1	N/A	N/A	N/A	26.8	N/A	N/A	1.8 B	4.0	1 - 50
Iron	7,270	N/A	N/A	N/A	9,640	N/A	N/A	2,820	26.0	2,000 - 550,000
Lead	1.5	0.98	36.8	15.7	23.6	1.7	1.6	0.9	4.0	200 - 500**
Magnesium	294	N/A	N/A	N/A	1,120	N/A	N/A	174	8.0	100 - 5,000
Manganese	34.5	N/A	N/A	N/A	127	N/A	N/A	36.1	0.8	50 - 5,000
Mercury	U	U	0.11	0.067	0.15	U	U	U	0.1	0.001 - 0.2
Nickel	1.5 B	N/A	N/A	N/A	5.5	N/A	N/A	0.89 B	0.8	0.5 - 25
Potassium	169	N/A	N/A	N/A	376	N/A	N/A	142	78.0	8,500 - 43,000*
Selenium	U	U	1.6 B	1 B	U	U	0.53 B	U	9.0	0.1 - 3.9
Silver	0.31 B	0.11 B	1.9	2.1	4.6	0.14 B	0.29 B	0.12 B	2.0	---
Sodium	8.9 B	N/A	N/A	N/A	23.8 B	N/A	N/A	8.7 B	83.0	6,000 - 8,000
Thallium	U	N/A	N/A	N/A	U	N/A	N/A	U	3.0	---
Vanadium	5.2	N/A	N/A	N/A	16.7	N/A	N/A	2.3	0.7	1 - 300
Zinc	11.1	N/A	N/A	N/A	**145**	N/A	N/A	5.5	7.0	9 - 50
Hexavalent Chromium	U	U	9.81	5.20	4.78	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
Bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-4		Boring B-5							
SAMPLE IDENTIFICATION	B-4810	B-41012	B-5810	B-51012	B-51214	B-51416	B-51618	B-51820	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	8' - 10'	10' - 12'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'		
DATE OF COLLECTION	6/02/2003	6/02/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	95	88	78	88	83	85	87		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	5,380	N/A	N/A	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	1.5	N/A	N/A	N/A	3.0	---
Arsenic	0.56 B	0.83 B	4.7	U	2.7	1.2	4	U	3.0	3 - 12*
Barium	6.1 B	9.3	26.8	65.3	48.3	41.6	42	20.6	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	0.46	N/A	N/A	N/A	0.5	0 - 1.75
Cadmium	0.17 B	0.76	2.4	**126**	**13.2**	**70.5**	**13.8**	**138**	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	1,480	N/A	N/A	N/A	240.0	130 - 35,000*
Chromium	8.2	13.2	47.9	**2,500**	**227**	**1,390**	**293**	**1,100**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	3	N/A	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	**92.7**	N/A	N/A	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	9,740	N/A	N/A	N/A	26.0	2,000 - 550,000
Lead	1.2	3.4	18	97.8	41.3	63.6	42.1	33.1	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	712	N/A	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	72.8	N/A	N/A	N/A	0.8	50 - 5,000
Mercury	U	U	0.16	**0.50**	0.16	**0.28**	0.16	0.07	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	11.6	N/A	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	233	N/A	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	1.4	U	U	U	9.0	0.1 - 3.9
Silver	0.13 B	0.27 B	2.1	7.1	11.4	5.2	9.2	0.17 B	2.0	---
Sodium	N/A	N/A	N/A	N/A	42.4 B	N/A	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	U	N/A	N/A	N/A	3.0	---
Vanadium	N/A	N/A	N/A	N/A	10.5	N/A	N/A	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	**251**	N/A	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	6.23	U	U	U	13.00	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
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* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
Bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-5	Boring B-6								
SAMPLE IDENTIFICATION	B-52022	B-602	B-622	B-624	B-646	B-6810	B-61012	B-61214	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	20' - 22'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	8' - 10'	10' - 12'	12' - 14'		
DATE OF COLLECTION	5/29/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95	83	70	82	89	89	87	82		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	1,430	N/A	N/A	N/A	N/A	N/A	7,160	6,320	17.0	33,000
Antimony	U	N/A	N/A	N/A	N/A	N/A	1.7	1.5	3.0	---
Arsenic	0.99 B	6.4	7.3	**36.0**	2.7	4.4	4.9	3.7	3.0	3 - 12*
Barium	7.9 B	38.7	75.7	39.2	49.7	48.8	42.6	37.1	4.0	15 - 600
Beryllium	0.21 B	N/A	N/A	N/A	N/A	N/A	0.14 B	0.11 B	0.5	0 - 1.75
Cadmium	6.9	**14**	**17.5**	3.2	**32.3**	3.5	7.7	7.8	0.7	0.1 - 1, (10***)
Calcium	132	N/A	N/A	N/A	N/A	N/A	8,180	7,780	240.0	130 - 35,000*
Chromium	16.9	**539**	**629**	**132**	**1,230**	**50.3**	**234**	**196**	0.6	1.5 - 40*, (50***)
Cobalt	0.5 B	N/A	N/A	N/A	N/A	N/A	2.8	2.5 B	0.9	2.5 - 60*
Copper	3.4	N/A	N/A	N/A	N/A	N/A	38.9	32.1	4.0	1 - 50
Iron	3,420	N/A	N/A	N/A	N/A	N/A	9,030	8,280	26.0	2,000 - 550,000
Lead	1.5	45.4	125	21.1	53.0	16.9	31.8	24.4	4.0	200 - 500**
Magnesium	170	N/A	N/A	N/A	N/A	N/A	1,700	2,890	8.0	100 - 5,000
Manganese	14.2	N/A	N/A	N/A	N/A	N/A	160	111	0.8	50 - 5,000
Mercury	U	0.16	**0.68**	0.086	0.15	0.063	0.11	0.13	0.1	0.001 - 0.2
Nickel	2.7	N/A	N/A	N/A	N/A	N/A	10.6	8.7	0.8	0.5 - 25
Potassium	155	N/A	N/A	N/A	N/A	N/A	383	333	78.0	8,500 - 43,000*
Selenium	U	1.8 B	1.5 B	0.69 B	0.95 B	1.3 B	U	U	9.0	0.1 - 3.9
Silver	0.21 B	3.5	5.1	2.3	3.1	3.8	4.3	3.7	2.0	---
Sodium	9.1 B	N/A	N/A	N/A	N/A	N/A	35 B	29.4 B	83.0	6,000 - 8,000
Thallium	U	N/A	N/A	N/A	N/A	N/A	U	U	3.0	---
Vanadium	3.9	N/A	N/A	N/A	N/A	N/A	13.5	11.6	0.7	1 - 300
Zinc	42.1	N/A	N/A	N/A	N/A	N/A	**130**	**116**	7.0	9 - 50
Hexavalent Chromium	U	7.38	**76.10**	5.56	23.30	U	U	5.88	3.0	1.5 - 40*, (50***)

Qualifiers:
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Notes:
--- : Not established.
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** : Background for metropolitan or suburban areas.
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Bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-6			Boring B-7						
SAMPLE IDENTIFICATION	B-61416	B-61618	B-61820	B-702	B-722	B-724	B-746	B-768	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	14' - 16'	16' - 18'	18' - 20'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'		
DATE OF COLLECTION	5/27/2003	5/27/2003	5/27/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	98	97	97	73	92	91	91	89		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	4,960	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Arsenic	1.2	0.9 B	1.4	11.9	3.5	3.1	4.6	1.5	3.0	3 - 12*
Barium	5.4 B	9 B	7.4 B	36.5	36	35.7	27.7	39.6	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	N/A	N/A	0.23 B	N/A	0.5	0 - 1.75
Cadmium	1.2	0.38	0.51	1.5	**12.1**	8	3.3	3.3	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	N/A	N/A	1,150	N/A	240.0	130 - 35,000*
Chromium	43.2	38.8	30.2	**76.9**	**579**	**532**	**111**	**524**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	N/A	N/A	2.7	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	N/A	N/A	**60.7**	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	N/A	N/A	7,810	N/A	26.0	2,000 - 550,000
Lead	1.5	1.5	1.6	40.9	34.8	45.7	41	14.8	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	N/A	N/A	704	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	N/A	N/A	75.9	N/A	0.8	50 - 5,000
Mercury	U	U	U	**0.25**	0.15	0.12	0.16	0.077	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	N/A	N/A	12.3	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	N/A	N/A	367	N/A	78.0	8,500 - 43,000*
Selenium	U	0.7 B	U	U	0.76 B	0.65 B	U	U	9.0	0.1 - 3.9
Silver	0.26 B	0.16 B	0.2 B	5.7	5.8	3.8	18.7	0.79 B	2.0	---
Sodium	N/A	N/A	N/A	N/A	N/A	N/A	51.4	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Vanadium	N/A	N/A	N/A	N/A	N/A	N/A	17.9	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	N/A	N/A	**107**	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	5.54	U	U	U	3.0	1.5 - 40*, (50***)

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Notes:
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Bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-7									
SAMPLE IDENTIFICATION	B-7810	B-71012	B-71214	B-71416	B-71618	B-71820	B-72022	B-72224	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	20' - 22'	22' - 24'		
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	90	88	59	81	62	97	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	5,840	N/A	N/A	15,900	N/A	N/A	N/A	N/A	17.0	33,000
Antimony	U	N/A	N/A	U	N/A	N/A	N/A	N/A	3.0	---
Arsenic	U	U	U	U	U	U	1.4	0.78 B	3.0	3 - 12*
Barium	62.5	48.8	89.1	107	60.3	82.2	11.3	7.3 B	4.0	15 - 600
Beryllium	0.11 B	N/A	N/A	0.082 B	N/A	N/A	N/A	N/A	0.5	0 - 1.75
Cadmium	6.5	**91.4**	**362**	**414**	**119**	**315**	**30.7**	**13.7**	0.7	0.1 - 1, (10***)
Calcium	2,500	N/A	N/A	14,000	N/A	N/A	N/A	N/A	240.0	130 - 35,000*
Chromium	**3,130**	**2,430**	**9,130**	**10,000**	**4,690**	**9,350**	**173**	39.7	0.6	1.5 - 40*, (50***)
Cobalt	4.1	N/A	N/A	5.4	N/A	N/A	N/A	N/A	0.9	2.5 - 60*
Copper	36.1	N/A	N/A	**830**	N/A	N/A	N/A	N/A	4.0	1 - 50
Iron	5,900	N/A	N/A	8,150	N/A	N/A	N/A	N/A	26.0	2,000 - 550,000
Lead	53	59.5	118	161	80.6	160	5.6	1.7	4.0	200 - 500**
Magnesium	703	N/A	N/A	1,220	N/A	N/A	N/A	N/A	8.0	100 - 5,000
Manganese	74.4	N/A	N/A	133	N/A	N/A	N/A	N/A	0.8	50 - 5,000
Mercury	0.18	0.14	**1.2**	**1.7**	**0.3**	**0.72**	U	U	0.1	0.001 - 0.2
Nickel	4.6	N/A	N/A	**301**	N/A	N/A	N/A	N/A	0.8	0.5 - 25
Potassium	291	N/A	N/A	252	N/A	N/A	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	0.64 B	U	U	U	1.1 B	U	U	9.0	0.1 - 3.9
Silver	2.8	1.5 B	2.1	2.2	1.6 B	1.4 B	0.45 B	U	2.0	---
Sodium	34.8 B	N/A	N/A	59.0 B	N/A	N/A	N/A	N/A	83.0	6,000 - 8,000
Thallium	U	N/A	N/A	1.9	N/A	N/A	N/A	N/A	3.0	---
Vanadium	9	N/A	N/A	U	N/A	N/A	N/A	N/A	0.7	1 - 300
Zinc	**832**	N/A	N/A	**2,830**	N/A	N/A	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	35.00	U	8.08	9.81	U	U	3.0	1.5 - 40*, (50***)

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Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
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☐ : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-8							Boring B-9		
SAMPLE IDENTIFICATION	B-802	B-822	B-824	B-846	B-868	B-8810	B-81012	B-9810	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	8' - 10'		
DATE OF COLLECTION	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	6/10/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	81	88	90	92	92	95	91	95		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	6,040	N/A	N/A	N/A	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	U	N/A	N/A	N/A	N/A	3.0	---
Arsenic	8.8	5.3	5.3	4.6	2.9	0.93 B	1.7	2.2	3.0	3 - 12*
Barium	29.2	28.4	26.3	22	26	7.7 B	9.3 B	10.5	4.0	15 - 600
Beryllium	N/A	N/A	N/A	0.43	N/A	N/A	N/A	N/A	0.5	0 - 1.75
Cadmium	1.9	1.5	0.83	1.5	2	0.6	0.23 B	2.7	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	436	N/A	N/A	N/A	N/A	240.0	130 - 35,000*
Chromium	**84.8**	**66.1**	26.7	49.8	**100**	45.5	15.8	29.9	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	2.1 B	N/A	N/A	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	27.2	N/A	N/A	N/A	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	9,070	N/A	N/A	N/A	N/A	26.0	2,000 - 550,000
Lead	112	23.1	18	20.8	20.9	2.5	2.2	5.0	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	690	N/A	N/A	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	129	N/A	N/A	N/A	N/A	0.8	50 - 5,000
Mercury	0.18	**0.27**	0.20	0.11	0.1	U	0.022 B	U	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	4.1	N/A	N/A	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	250	N/A	N/A	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	0.98 B	U	U	U	U	9.0	0.1 - 3.9
Silver	2.4	8.8	2.6	4.7	3.5	0.17 B	0.22 B	U	2.0	---
Sodium	N/A	N/A	N/A	18.3 B	N/A	N/A	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	U	N/A	N/A	N/A	N/A	3.0	---
Vanadium	N/A	N/A	N/A	12.6	N/A	N/A	N/A	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	**51.6**	N/A	N/A	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
☐ : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-9							Boring B-10		
SAMPLE IDENTIFICATION	B-91012	B-91214	B-91416	B-91618	B-92022	B-92224	B-92426	B-1002		
SAMPLE DEPTH	10' - 12'	12' - 14'	14' - 16'	16' - 18'	20' - 22'	22' - 24'	24' - 26'	0 - 2"	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	98	94	95	95	97	94	96	78		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	1,050	N/A	N/A	N/A	N/A	N/A	1,650	N/A	17.0	33,000
Antimony	0.26 B	N/A	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Arsenic	2.9	0.49 B	1.6	1.2	1.2	1.5	2.1	8.4	3.0	3 - 12*
Barium	5 B	3.8 B	11.3	9.3 B	6.5 B	9.5 B	10	35.6	4.0	15 - 600
Beryllium	0.065 B	N/A	N/A	N/A	N/A	N/A	0.15 B	N/A	0.5	0 - 1.75
Cadmium	U	U	1.1	2.1	0.23 B	0.16 B	0.22 B	1.2	0.7	0.1 - 1, (10***)
Calcium	13.7 B	N/A	N/A	N/A	N/A	N/A	41	N/A	240.0	130 - 35,000*
Chromium	6.6	2	33	45.8	4.4	3.7	6.3	43.1	0.6	1.5 - 40*, (50***)
Cobalt	1.2 B	N/A	N/A	N/A	N/A	N/A	0.85 B	N/A	0.9	2.5 - 60*
Copper	2.4	N/A	N/A	N/A	N/A	N/A	2.6	N/A	4.0	1 - 50
Iron	2,800	N/A	N/A	N/A	N/A	N/A	4,190	N/A	26.0	2,000 - 550,000
Lead	1	0.81	3.9	4.8	1.1	0.99	1	45.7	4.0	200 - 500**
Magnesium	175	N/A	N/A	N/A	N/A	N/A	229	N/A	8.0	100 - 5,000
Manganese	22.5	N/A	N/A	N/A	N/A	N/A	55.2	N/A	0.8	50 - 5,000
Mercury	U	U	U	U	U	0.026 B	0.046	**0.23**	0.1	0.001 - 0.2
Nickel	1.2 B	N/A	N/A	N/A	N/A	N/A	1.7 B	N/A	0.8	0.5 - 25
Potassium	123	N/A	N/A	N/A	N/A	N/A	207	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	U	U	U	U	0.19 B	0.15 B	0.17 B	5.9	2.0	---
Sodium	16.1 B	N/A	N/A	N/A	N/A	N/A	15.0 B	N/A	83.0	6,000 - 8,000
Thallium	U	N/A	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Vanadium	2.9	N/A	N/A	N/A	N/A	N/A	3.9	N/A	0.7	1 - 300
Zinc	3.2	N/A	N/A	N/A	N/A	N/A	6.4	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
: Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-10					Boring B-11				
SAMPLE IDENTIFICATION	B-1022	B-1024	B-1068	B-10810	B-101012	B-1102	B-1122	B-1124	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2" - 2'	2' - 4'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'		
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	5/27/2003	5/27/2003	5/27/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	97	79	100	100	75	92	92		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	7,940	N/A	N/A	N/A	1,080	N/A	N/A	N/A	17.0	33,000
Antimony	U	N/A	N/A	N/A	0.24 B	N/A	N/A	N/A	3.0	---
Arsenic	3.5	3	8.4	0.64 B	0.59 B	8.7	3.4	1.6	3.0	3 - 12*
Barium	22	20.9	4.6 B	4.5 B	5.4 B	35.5	19.4	17.4	4.0	15 - 600
Beryllium	0.23 B	N/A	N/A	N/A	0.088 B	N/A	N/A	N/A	0.5	0 - 1.75
Cadmium	0.61	0.1 B	0.053 B	U	0.079 B	4.4	1.9	0.75	0.7	0.1 - 1, (10***)
Calcium	646	N/A	N/A	N/A	75.6	N/A	N/A	N/A	240.0	130 - 35,000*
Chromium	21.7	8.9	2.1	2.2	4.1	**149**	**107**	**54.8**	0.6	1.5 - 40*, (50***)
Cobalt	3.5	N/A	N/A	N/A	0.63 B	N/A	N/A	N/A	0.9	2.5 - 60*
Copper	13.1	N/A	N/A	N/A	2	N/A	N/A	N/A	4.0	1 - 50
Iron	9,520	N/A	N/A	N/A	2,690	N/A	N/A	N/A	26.0	2,000 - 550,000
Lead	11.9	3.9	11	0.84	1.1	59.8	21.7	5.9	4.0	200 - 500**
Magnesium	1,080	N/A	N/A	N/A	232	N/A	N/A	N/A	8.0	100 - 5,000
Manganese	134	N/A	N/A	N/A	29.6	N/A	N/A	N/A	0.8	50 - 5,000
Mercury	0.08	0.016 B	U	U	U	**0.26**	0.041	U	0.1	0.001 - 0.2
Nickel	5.2	N/A	N/A	N/A	1.1 B	N/A	N/A	N/A	0.8	0.5 - 25
Potassium	357	N/A	N/A	N/A	159	N/A	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	1.9	0.92 B	0.59 B	9.0	0.1 - 3.9
Silver	2.3	0.18 B	0.14 B	U	0.12 B	8.4	3.4	0.51 B	2.0	---
Sodium	26.4 B	N/A	N/A	N/A	12.3 B	N/A	N/A	N/A	83.0	6,000 - 8,000
Thallium	0.17 B	N/A	N/A	N/A	U	N/A	N/A	N/A	3.0	---
Vanadium	13.3	N/A	N/A	N/A	2.2	N/A	N/A	N/A	0.7	1 - 300
Zinc	27.8	N/A	N/A	N/A	3.8	N/A	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
Bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-11									
SAMPLE IDENTIFICATION	B-1146	B-1168	B-11810	B-111012	B-111214	B-111416	B-111618	B-111820	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'		
DATE OF COLLECTION	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003	5/27/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	88	86	92	96	98	92	95	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	1,200	N/A	N/A	755	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	U	N/A	N/A	U	N/A	3.0	---
Arsenic	4.4	3.4	1.4	0.53 B	0.88 B	1.2	0.67 B	0.68 B	3.0	3 - 12*
Barium	28	24.2	20.5	6.9 B	5.3 B	11.6	4.1 B	5.1 B	4.0	15 - 600
Beryllium	N/A	N/A	N/A	0.067 B	N/A	N/A	0.084 B	N/A	0.5	0 - 1.75
Cadmium	3.6	1.3	5.8	0.36	0.099 B	0.88	0.11 B	0.11 B	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	161	N/A	N/A	149	N/A	240.0	130 - 35,000*
Chromium	**69.4**	**53.8**	**289**	5.4	3.1	20.3	5.4	5.7	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	0.91 B	N/A	N/A	1.1 B	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	3.8	N/A	N/A	2.3	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	2,850	N/A	N/A	3,080	N/A	26.0	2,000 - 550,000
Lead	24.2	18.2	38.6	2.9	1.7	6	1.3	1.5	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	229	N/A	N/A	124	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	33.2	N/A	N/A	67.4	N/A	0.8	50 - 5,000
Mercury	0.14	0.095	**0.26**	U	U	0.026 B	U	0.018 B	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	1.3 B	N/A	N/A	1.1 B	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	150 B	N/A	N/A	104 B	N/A	78.0	8,500 - 43,000*
Selenium	1.2 B	1.3 B	U	U	U	1.5 B	U	U	9.0	0.1 - 3.9
Silver	3	3	4.7	0.21 B	0.2 B	0.59 B	0.17 B	0.19 B	2.0	---
Sodium	N/A	N/A	N/A	8.8 B	N/A	N/A	8.2 B	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	U	N/A	N/A	0.15 B	N/A	3.0	---
Vanadium	N/A	N/A	N/A	3.3	N/A	N/A	2.7	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	7	N/A	N/A	3.6	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	11.70	U	U	U	U	U	3.0	1.5 - 40*, (50***)

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☐ : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-12									
SAMPLE IDENTIFICATION	B-12810	B-121012	B-121214	B-121416	B-121618	B-121820	B-122022	B-122224		
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	20' - 22'	22' - 24'	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	84	82	83	87	86	90	91	88		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	6,880	N/A	N/A	6,700	N/A	N/A	17.0	33,000
Antimony	N/A	N/A	5.9	N/A	N/A	20.1	N/A	N/A	3.0	---
Arsenic	5	7.7	6.5	7	6.5	6.5	5.9	6.3	3.0	3 - 12*
Barium	22.9	50.8	46.1	40.6	57.9	52.1	46.6	60.4	4.0	15 - 600
Beryllium	N/A	N/A	0.28	N/A	N/A	0.3	N/A	N/A	0.5	0 - 1.75
Cadmium	1.2	3.3	5.8	3.6	7.6	**15.2**	**22.8**	**12.8**	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	3,490	N/A	N/A	2,510	N/A	N/A	240.0	130 - 35,000*
Chromium	**56.4**	**83.3**	**126**	**94.2**	**664**	**496**	**306**	**376**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	3.2	N/A	N/A	3.1	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	**64**	N/A	N/A	**75.2**	N/A	N/A	4.0	1 - 50
Iron	N/A	N/A	15,900	N/A	N/A	9,530	N/A	N/A	26.0	2,000 - 550,000
Lead	14.2	32.6	36.8	30.2	47.6	55.2	43.8	45.9	4.0	200 - 500**
Magnesium	N/A	N/A	960	N/A	N/A	956	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	195	N/A	N/A	104	N/A	N/A	0.8	50 - 5,000
Mercury	0.12	0.16	**0.26**	0.17	0.12	**0.32**	**0.21**	**0.22**	0.1	0.001 - 0.2
Nickel	N/A	N/A	**25.1**	N/A	N/A	9	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	290	N/A	N/A	328	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	0.62 B	U	U	9.0	0.1 - 3.9
Silver	4.1	2.5	5.2	3.1	4.9	5.5	5.0	5.5	2.0	---
Sodium	N/A	N/A	44.8 B	N/A	N/A	68.9	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	U	N/A	N/A	U	N/A	N/A	3.0	---
Vanadium	N/A	N/A	19.4	N/A	N/A	17.0	N/A	N/A	0.7	1 - 300
Zinc	N/A	N/A	**161**	N/A	N/A	**356**	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
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[ ] : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-12		Boring B-13							
SAMPLE IDENTIFICATION	B-122526	B-122628	B-13810	B-131012	B-131214	B-131416	B-131618	B-131820	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	25' - 26'	26' - 28'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	88	96	87	85	89	90	90	89		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	6,400	N/A	N/A	N/A	N/A	6,050	17.0	33,000
Antimony	N/A	N/A	0.39 B	N/A	N/A	N/A	N/A	1.8	3.0	---
Arsenic	1.1	1.4	3	3.2	4.5	5.6	5.4	4.3	3.0	3 - 12*
Barium	12.6	22.1	29.3	22.3	39.8	52.3	70.4	52.1	4.0	15 - 600
Beryllium	N/A	N/A	0.12 B	N/A	N/A	N/A	N/A	0.15 B	0.5	0 - 1.75
Cadmium	0.13 B	U	2.3	1.8	6.3	**15.4**	4.2	**11.4**	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	783	N/A	N/A	N/A	N/A	23,500	240.0	130 - 35,000*
Chromium	36.5	**68.8**	**53.5**	46.1	**111**	**325**	**83.2**	**261**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	3	N/A	N/A	N/A	N/A	2.8	0.9	2.5 - 60*
Copper	N/A	N/A	18.5	N/A	N/A	N/A	N/A	48	4.0	1 - 50
Iron	N/A	N/A	8,250	N/A	N/A	N/A	N/A	9,550	26.0	2,000 - 550,000
Lead	0.81	1	13.7	16.1	36.5	78.8	**708**	43.5	4.0	200 - 500**
Magnesium	N/A	N/A	1,110	N/A	N/A	N/A	N/A	**11,100**	8.0	100 - 5,000
Manganese	N/A	N/A	93.1	N/A	N/A	N/A	N/A	141	0.8	50 - 5,000
Mercury	U	U	0.084	0.092	**0.21**	0.16	**0.24**	0.15	0.1	0.001 - 0.2
Nickel	N/A	N/A	6.5	N/A	N/A	N/A	N/A	8.7	0.8	0.5 - 25
Potassium	N/A	N/A	340	N/A	N/A	N/A	N/A	337	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	0.14 B	0.13 B	3.4	2.6	5.8	6.5	3.3	5.4	2.0	---
Sodium	N/A	N/A	30 B	N/A	N/A	N/A	N/A	98.1	83.0	6,000 - 8,000
Thallium	N/A	N/A	U	N/A	N/A	N/A	N/A	U	3.0	---
Vanadium	N/A	N/A	12.7	N/A	N/A	N/A	N/A	15.7	0.7	1 - 300
Zinc	N/A	N/A	**52**	N/A	N/A	N/A	N/A	**202**	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
[ ] : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-13			Boring B-14			Boring B-15			
SAMPLE IDENTIFICATION	B-132022	B-132224	B-132426	B-14810	B-141012	B-141214	B-1502	B-1522	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	20' - 22'	22' - 24'	24' - 26'	8' - 10'	10' - 12'	12' - 14'	0 - 2"	2" - 2'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/11/2003	6/11/2003	6/11/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	90	95	98	96	96	97	83	90		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	1,970	N/A	N/A	1,030	N/A	7,220	17.0	33,000
Antimony	N/A	N/A	U	N/A	N/A	U	N/A	U	3.0	---
Arsenic	1.8	0.94	0.79 B	0.68 B	0.74 B	0.89 B	**27.9**	**17.5**	3.0	3 - 12*
Barium	17.8	5.8 B	6.3 B	7.6 B	5.8 B	5.9 B	32	24.2	4.0	15 - 600
Beryllium	N/A	N/A	0.069 B	N/A	N/A	0.12 B	N/A	0.21 B	0.5	0 - 1.75
Cadmium	4.4	U	U	0.1 B	0.11 B	0.084 B	0.87	0.77	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	53.3	N/A	N/A	U	N/A	834	240.0	130 - 35,000*
Chromium	**125**	9.1	7.9	8.1	7.2	7.5	32.9	33.3	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	0.61 B	N/A	N/A	0.89 B	N/A	2.1 B	0.9	2.5 - 60*
Copper	N/A	N/A	2	N/A	N/A	4.9	N/A	19.1	4.0	1 - 50
Iron	N/A	N/A	2,030	N/A	N/A	5,050	N/A	7,810	26.0	2,000 - 550,000
Lead	18.3	1.2	0.96	1.5	0.93	1.1	45.9	27.6	4.0	200 - 500**
Magnesium	N/A	N/A	137	N/A	N/A	199	N/A	857	8.0	100 - 5,000
Manganese	N/A	N/A	12.9	N/A	N/A	39.3	N/A	139	0.8	50 - 5,000
Mercury	0.091	U	U	U	U	U	**0.21**	0.17	0.1	0.001 - 0.2
Nickel	N/A	N/A	1.5 B	N/A	N/A	1.7 B	N/A	4.8	0.8	0.5 - 25
Potassium	N/A	N/A	U	N/A	N/A	125	N/A	321	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	1.2 B	0.098 B	U	0.2 B	0.22 B	0.24 B	4.8	3.7	2.0	---
Sodium	N/A	N/A	22.3 B	N/A	N/A	13.3 B	N/A	35.9 B	83.0	6,000 - 8,000
Thallium	N/A	N/A	U	N/A	N/A	0.21 B	N/A	0.48 B	3.0	---
Vanadium	N/A	N/A	2.2 B	N/A	N/A	3.8	N/A	14.7	0.7	1 - 300
Zinc	N/A	N/A	3.8	N/A	N/A	7	N/A	40.8	7.0	9 - 50
Hexavalent Chromium	U	U	U	4.21	U	4.30	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
☐ : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-15				Boring B-16					
SAMPLE IDENTIFICATION	B-1546	B-1568	B-15810	B-151012	B-1602	B-1622	B-1624	B-1646		
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	6/02/2003	6/02/2003	6/02/2003	6/02/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	97	94	96	97	93	100	89	94		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	1,410	N/A	N/A	6,440	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	U	N/A	N/A	U	N/A	3.0	---
Arsenic	0.83 B	0.5 B	0.6 B	0.64 B	3.2	1.6	2.3	1.5	3.0	3 - 12*
Barium	6.9 B	3.8 B	5.1 B	4.3 B	18.9	13.1	16.8	11.3	4.0	15 - 600
Beryllium	N/A	N/A	N/A	0.12 B	N/A	N/A	0.38	N/A	0.5	0 - 1.75
Cadmium	0.095 B	0.037 B	U	0.039 B	0.81	1.7	0.32	0.049 B	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	92.5	N/A	N/A	726	N/A	240.0	130 - 35,000*
Chromium	3.1	2.5	5.1	3.3	45.2	**131**	23.3	22.6	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	0.74 B	N/A	N/A	2 B	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	2.5	N/A	N/A	4	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	4,690	N/A	N/A	8,370	N/A	26.0	2,000 - 550,000
Lead	1.6	0.83	1.8	1	32.9	7.4	9.7	3.1	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	292	N/A	N/A	759	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	40.9	N/A	N/A	141	N/A	0.8	50 - 5,000
Mercury	U	U	U	U	0.029 B	0.057	0.037	0.019 B	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	1.6 B	N/A	N/A	2.9	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	138	N/A	N/A	202	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	1.2 B	U	9.0	0.1 - 3.9
Silver	0.12 B	0.088 B	U	0.17 B	0.33 B	0.81 B	0.36 B	0.21 B	2.0	---
Sodium	N/A	N/A	N/A	17.9 B	N/A	N/A	13.5 B	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	U	N/A	N/A	U	N/A	3.0	---
Vanadium	N/A	N/A	N/A	3.2	N/A	N/A	10.4	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	5.6	N/A	N/A	21.9	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
: Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-16					Boring B-17				
SAMPLE IDENTIFICATION	B-1668	B-16810	B-161012	B-161214	B-161416	B-1702	B-1722	B-1724	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	0 - 2"	2" - 2'	2' - 4'		
DATE OF COLLECTION	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	87	98	98	97	96	91	94	91		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	1,330	N/A	N/A	6,320	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	U	N/A	N/A	2.7	3.0	---
Arsenic	2.6	1.5	0.68 B	0.74 B	1.8	4.6	2.8	5.3	3.0	3 - 12*
Barium	32.4	5.6 B	2.8 B	3.2 B	6.7 B	23.8	16.6	36.7	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	0.22 B	N/A	N/A	0.16 B	0.5	0 - 1.75
Cadmium	U	U	U	U	0.11 B	U	0.2 B	8.5	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	112	N/A	N/A	2,970	240.0	130 - 35,000*
Chromium	9.6	2.8	2	2.2	7.4	14.3	31	**157**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	0.82 B	N/A	N/A	2.3 B	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	3.7	N/A	N/A	**53**	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	9,110	N/A	N/A	14,900	26.0	2,000 - 550,000
Lead	4.6	0.96	0.75	0.56	1.5	8.1	8.9	35.6	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	271	N/A	N/A	1,600	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	51.2	N/A	N/A	131	0.8	50 - 5,000
Mercury	U	U	U	U	U	0.02 B	0.036	0.16	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	1.3 B	N/A	N/A	8.6	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	177	N/A	N/A	358	78.0	8,500 - 43,000*
Selenium	U	U	U	U	1.1 B	U	U	U	9.0	0.1 - 3.9
Silver	U	0.1 B	U	U	0.28 B	0.77 B	1.2 B	7.4	2.0	---
Sodium	N/A	N/A	N/A	N/A	13.1 B	N/A	N/A	142	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	0.2 B	N/A	N/A	U	3.0	---
Vanadium	N/A	N/A	N/A	N/A	5.6	N/A	N/A	15.5	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	7	N/A	N/A	**142**	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-17									
SAMPLE IDENTIFICATION	B-1746	B-1768	B-17810	B-171012	B-171214	B-171416	B-171618	B-171820		
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91	90	90	90	88	91	91	90		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	N/A	6,310	N/A	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	N/A	9.4	N/A	N/A	3.0	---
Arsenic	4.4	6.9	3.2	5.3	4.6	5	4.7	4.9	3.0	3 - 12*
Barium	43.9	41.9	42.4	50	47.7	42.1	43.8	55.5	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	N/A	0.17 B	N/A	N/A	0.5	0 - 1.75
Cadmium	8.6	**61.5**	**18.3**	7.1	**10.8**	5.1	5.7	9.9	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	N/A	1,990	N/A	N/A	240.0	130 - 35,000*
Chromium	**150**	**815**	**241**	**169**	**191**	**97.9**	**101**	**474**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	N/A	2.9	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	N/A	**74.7**	N/A	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	N/A	8,360	N/A	N/A	26.0	2,000 - 550,000
Lead	47.9	35.7	38.9	65.4	38.9	257	44.7	44.8	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	N/A	814	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	N/A	103	N/A	N/A	0.8	50 - 5,000
Mercury	**0.24**	**0.25**	0.13	0.16	0.17	0.19	**0.33**	0.15	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	N/A	8.2	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	N/A	307	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	9.4	2.7	5.1	4.7	6.7	7.3	12.4	7.2	2.0	---
Sodium	N/A	N/A	N/A	N/A	N/A	73.5	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	N/A	U	N/A	N/A	3.0	---
Vanadium	N/A	N/A	N/A	N/A	N/A	14.8	N/A	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	N/A	**130**	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
: Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-17							Boring B-18		
SAMPLE IDENTIFICATION	B-172022	B-172224	B-172426	B-172830	B-173032	B-173234	B-173436	B-1802		
SAMPLE DEPTH	20' - 22'	22' - 24'	24' - 26'	28' - 30'	30' - 32'	32' - 34'	34' - 36'	0 - 2"	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	5/29/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89	91	89	96	98	92	96	78		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	7,520	N/A	N/A	N/A	N/A	1,360	N/A	17.0	33,000
Antimony	N/A	1.9	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Arsenic	5	6.1	5.6	1	0.93 B	5.9	1.8	5.4	3.0	3 - 12*
Barium	65.3	82.6	65.9	6.2 B	7.7 B	10.8	6.7 B	44.3	4.0	15 - 600
Beryllium	N/A	0.096 B	N/A	N/A	N/A	N/A	0.39	N/A	0.5	0 - 1.75
Cadmium	6	5.1	6.6	2.1	0.08 B	6.3	U	1	0.7	0.1 - 1, (10***)
Calcium	N/A	3,580	N/A	N/A	N/A	N/A	U	N/A	240.0	130 - 35,000*
Chromium	**147**	**138**	**142**	9.6	12.8	**154**	18.5	**53.9**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	3.1	N/A	N/A	N/A	N/A	0.29 B	N/A	0.9	2.5 - 60*
Copper	N/A	**52.1**	N/A	N/A	N/A	N/A	2.1	N/A	4.0	1 - 50
Iron	N/A	12,300	N/A	N/A	N/A	N/A	9,220	N/A	26.0	2,000 - 550,000
Lead	58.9	49.7	127	1.2	1.5	6.6	1.4	71.3	4.0	200 - 500**
Magnesium	N/A	1,100	N/A	N/A	N/A	N/A	121	N/A	8.0	100 - 5,000
Manganese	N/A	131	N/A	N/A	N/A	N/A	23	N/A	0.8	50 - 5,000
Mercury	0.20	0.17	**0.36**	U	U	0.018 B	U	0.16	0.1	0.001 - 0.2
Nickel	N/A	12.1	N/A	N/A	N/A	N/A	2.2 B	N/A	0.8	0.5 - 25
Potassium	N/A	390	N/A	N/A	N/A	N/A	115	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	7.6	5.5	5.8	0.17 B	0.16 B	0.88 B	0.53 B	2.4	2.0	---
Sodium	N/A	79.4	N/A	N/A	N/A	N/A	U	N/A	83.0	6,000 - 8,000
Thallium	N/A	U	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Vanadium	N/A	20	N/A	N/A	N/A	N/A	8.1	N/A	0.7	1 - 300
Zinc	N/A	**243**	N/A	N/A	N/A	N/A	10.6	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
Bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-18							Boring B-19		
SAMPLE IDENTIFICATION	B-1822	B-1824	B-1846	B-1868	B-18810	B-181012	B-181214	B-19810	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	8' - 10'		
DATE OF COLLECTION	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91	89	91	87	96	95	95	91		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	1,240	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Arsenic	1.5	3.1	2	6.2	0.79 B	0.86 B	1.1	3.3	3.0	3 - 12*
Barium	9.1 B	20.7	18.5	29.1	3.8 B	7.8 B	4.7 B	35.5	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	N/A	N/A	0.21 B	N/A	0.5	0 - 1.75
Cadmium	0.66	4.2	2.3	5.8	0.25	0.67	0.25 B	7.1	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	N/A	N/A	68.8	N/A	240.0	130 - 35,000*
Chromium	**54.2**	**123**	**263**	**85.5**	2.6	35.5	3.4	**620**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	N/A	N/A	1.9 B	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	N/A	N/A	2.9	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	N/A	N/A	4,130	N/A	26.0	2,000 - 550,000
Lead	10.2	24.6	18.5	38.9	0.61	4.9	1.1	33.2	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	N/A	N/A	265	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	N/A	N/A	69.8	N/A	0.8	50 - 5,000
Mercury	0.026 B	0.10	0.056	0.081	U	U	U	**0.25**	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	N/A	N/A	1.1 B	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	N/A	N/A	143	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	6.1	21	6.5	13	U	1.4 B	0.17 B	6.1	2.0	---
Sodium	N/A	N/A	N/A	N/A	N/A	N/A	9.5 B	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	N/A	N/A	U	N/A	3.0	---
Vanadium	N/A	N/A	N/A	N/A	N/A	N/A	4.2	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	N/A	N/A	9.3	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	6.28	6.43	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
[ ] : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-19									
SAMPLE IDENTIFICATION	B-191012	B-191214	B-191618	B-191820	B-192224	B-192426	B-192627	B-192728	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	10' - 12'	12' - 14'	16' - 18'	18' - 20'	22' - 24'	24' - 26'	26' - 27'	27' - 28'		
DATE OF COLLECTION	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91	92	85	91	91	91	90	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	6,710	N/A	N/A	6,650	N/A	5,330	N/A	N/A	17.0	33,000
Antimony	5.3	N/A	N/A	4	N/A	2.1	N/A	N/A	3.0	---
Arsenic	4.4	3.8	5.3	5.5	4.4	4.1	4.4	2	3.0	3 - 12*
Barium	53.6	38.4	48.5	61.5	25.4	38.5	40.5	11.5	4.0	15 - 600
Beryllium	0.086 B	N/A	N/A	0.11 B	N/A	0.088 B	N/A	N/A	0.5	0 - 1.75
Cadmium	**22.7**	8.4	5	**10.3**	3.3	3.9	4.1	1.4	0.7	0.1 - 1, (10***)
Calcium	2,990	N/A	N/A	4,750	N/A	7,300	N/A	N/A	240.0	130 - 35,000*
Chromium	**375**	**153**	**137**	**287**	**143**	**148**	**313**	42.9	0.6	1.5 - 40*, (50***)
Cobalt	2.6 B	N/A	N/A	3.1	N/A	5.4	N/A	N/A	0.9	2.5 - 60*
Copper	**56.1**	N/A	N/A	**66.1**	N/A	35.6	N/A	N/A	4.0	1 - 50
Iron	9,890	N/A	N/A	10,600	N/A	9,280	N/A	N/A	26.0	2,000 - 550,000
Lead	42.4	38.8	62.4	53.1	24.2	35.4	59.3	4.7	4.0	200 - 500**
Magnesium	926	N/A	N/A	1,210	N/A	2,390	N/A	N/A	8.0	100 - 5,000
Manganese	113	N/A	N/A	130	N/A	107	N/A	N/A	0.8	50 - 5,000
Mercury	0.16	0.14	**0.29**	**0.21**	0.12	0.11	0.15	U	0.1	0.001 - 0.2
Nickel	9.2	N/A	N/A	13.1	N/A	8.8	N/A	N/A	0.8	0.5 - 25
Potassium	337	N/A	N/A	342	N/A	376	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	6.2	27.1	5.3	7	3.3	5.7	4.2	0.39 B	2.0	---
Sodium	63.7	N/A	N/A	86.6	N/A	81.9	N/A	N/A	83.0	6,000 - 8,000
Thallium	U	N/A	N/A	U	N/A	U	N/A	N/A	3.0	---
Vanadium	15.5	N/A	N/A	37.7	N/A	13.2	N/A	N/A	0.7	1 - 300
Zinc	**232**	N/A	N/A	**294**	N/A	**143**	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	12.90	U	19.90	U	3.0	1.5 - 40*, (50***)

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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
▭ : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-19	Boring B-20								
SAMPLE IDENTIFICATION	B-192830	B-20810	B-201012	B-201214	B-201416	B-201618	B-201820	B-2022524	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	28' - 30'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	22.5' - 24'		
DATE OF COLLECTION	6/09/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003	6/03/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	98	92	93	89	92	91	91	98		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	5,410	N/A	N/A	4,460	N/A	N/A	N/A	17.0	33,000
Antimony	N/A	1.4	N/A	N/A	1.4	N/A	N/A	N/A	3.0	---
Arsenic	1.2	3.5	5.4	6.5	3.5	4.9	3.7	1.1	3.0	3 - 12*
Barium	5.1 B	32.1	39.3	53.6	32.9	49.6	38.2	11.2	4.0	15 - 600
Beryllium	N/A	0.082 B	N/A	N/A	0.069 B	N/A	N/A	N/A	0.5	0 - 1.75
Cadmium	0.031 B	7.8	6.6	5.4	4.5	8.1	4.9	0.035 B	0.7	0.1 - 1, (10***)
Calcium	N/A	3,420	N/A	N/A	3,420	N/A	N/A	N/A	240.0	130 - 35,000*
Chromium	9.4	**99.1**	**112**	**97.2**	**70.3**	**144**	**74.2**	3.6	0.6	1.5 - 40*, (50***)
Cobalt	N/A	2.6 B	N/A	N/A	2.1 B	N/A	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	49.1	N/A	N/A	34.4	N/A	N/A	N/A	4.0	1 - 50
Iron	N/A	8,180	N/A	N/A	7,000	N/A	N/A	N/A	26.0	2,000 - 550,000
Lead	0.82	29.5	33.8	43.8	28.9	48.5	35.9	1.1	4.0	200 - 500**
Magnesium	N/A	877	N/A	N/A	879	N/A	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	109	N/A	N/A	98	N/A	N/A	N/A	0.8	50 - 5,000
Mercury	U	**0.22**	0.15	**0.3**	**0.26**	**0.24**	**0.21**	U	0.1	0.001 - 0.2
Nickel	N/A	8.7	N/A	N/A	7.5	N/A	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	294	N/A	N/A	215	N/A	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	0.13 B	9.7	6.7	5.3	5.1	8.9	8.7	0.12 B	2.0	---
Sodium	N/A	45.5 B	N/A	N/A	42.3 B	N/A	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	U	N/A	N/A	U	N/A	N/A	N/A	3.0	---
Vanadium	N/A	14.6	N/A	N/A	11.4	N/A	N/A	N/A	0.7	1 - 300
Zinc	N/A	**124**	N/A	N/A	**94.3**	N/A	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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Notes:
--- : Not established.
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** : Background for metropolitan or suburban areas.
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[ ] : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-20	Boring B-21								
SAMPLE IDENTIFICATION	B-202426	B-2102	B-2122	B-2124	B-2146	B-2168	B-21810	B-211012	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	24' - 26'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	6/03/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003	6/02/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	97	87	90	93	90	97	97	97		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	1,120	N/A	N/A	4,190	N/A	N/A	N/A	N/A	17.0	33,000
Antimony	U	N/A	N/A	U	N/A	N/A	N/A	N/A	3.0	---
Arsenic	0.69 B	4.1	4.5	1.3	3.4	1.1	0.56 B	1	3.0	3 - 12*
Barium	8.6 B	26.2	25.1	12.6	21.2	7.7 B	5.7 B	8.2 B	4.0	15 - 600
Beryllium	0.055 B	N/A	N/A	0.14 B	N/A	N/A	N/A	N/A	0.5	0 - 1.75
Cadmium	0.079 B	1.1	1.2	1.6	1.2	0.37	0.17 B	0.16 B	0.7	0.1 - 1, (10***)
Calcium	30.4 B	N/A	N/A	344	N/A	N/A	N/A	N/A	240.0	130 - 35,000*
Chromium	4.8	48.1	**59.6**	**107**	**78.4**	5	3.4	10.2	0.6	1.5 - 40*, (50***)
Cobalt	0.61 B	N/A	N/A	1.4 B	N/A	N/A	N/A	N/A	0.9	2.5 - 60*
Copper	3	N/A	N/A	10.8	N/A	N/A	N/A	N/A	4.0	1 - 50
Iron	2,230	N/A	N/A	5,530	N/A	N/A	N/A	N/A	26.0	2,000 - 550,000
Lead	1	43.1	25.7	7.4	23.4	1.4	1.3	1.2	4.0	200 - 500**
Magnesium	144	N/A	N/A	456	N/A	N/A	N/A	N/A	8.0	100 - 5,000
Manganese	63.8	N/A	N/A	92.2	N/A	N/A	N/A	N/A	0.8	50 - 5,000
Mercury	U	0.11	0.074	0.067	0.063	U	U	U	0.1	0.001 - 0.2
Nickel	2.3	N/A	N/A	2.7	N/A	N/A	N/A	N/A	0.8	0.5 - 25
Potassium	115	N/A	N/A	191	N/A	N/A	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	0.46 B	U	U	U	U	9.0	0.1 - 3.9
Silver	0.16 B	2.3	3	6.1	5.6	0.18 B	0.12 B	0.15 B	2.0	---
Sodium	13 B	N/A	N/A	12.6 B	N/A	N/A	N/A	N/A	83.0	6,000 - 8,000
Thallium	U	N/A	N/A	0.26 B	N/A	N/A	N/A	N/A	3.0	---
Vanadium	2.5	N/A	N/A	7	N/A	N/A	N/A	N/A	0.7	1 - 300
Zinc	4.7	N/A	N/A	34.2	N/A	N/A	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
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** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
Bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-22									
SAMPLE IDENTIFICATION	B-22810	B-221012	B-221214	B-221416	B-221618	B-221820	B-222022	B-222224		
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	14' - 16'	16' - 18'	18' - 20'	20' - 22'	22' - 24'	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003	6/09/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91	92	91	95	92	90	88	87		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	5,400	N/A	N/A	N/A	7,820	N/A	N/A	17.0	33,000
Antimony	N/A	4.4	N/A	N/A	N/A	6.4	N/A	N/A	3.0	---
Arsenic	7.9	4.8	5.6	5.1	6	6.3	6.6	6.7	3.0	3 - 12*
Barium	43	37	57.9	48.1	48.1	39.5	43.3	56.9	4.0	15 - 600
Beryllium	N/A	0.29	N/A	N/A	N/A	0.31	N/A	N/A	0.5	0 - 1.75
Cadmium	5.5	5	6.3	4.2	**11**	6.2	9.2	**14.9**	0.7	0.1 - 1, (10***)
Calcium	N/A	20,200	N/A	N/A	N/A	3,490	N/A	N/A	240.0	130 - 35,000*
Chromium	**111**	**99.1**	**116**	**95.7**	**183**	**150**	**247**	**312**	0.6	1.5 - 40*, (50***)
Cobalt	N/A	2.7	N/A	N/A	N/A	2.8	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	**64.9**	N/A	N/A	N/A	34	N/A	N/A	4.0	1 - 50
Iron	N/A	8,100	N/A	N/A	N/A	9,370	N/A	N/A	26.0	2,000 - 550,000
Lead	40.9	39.8	82.1	52.3	45.8	36.2	42.2	46.4	4.0	200 - 500**
Magnesium	N/A	**5,310**	N/A	N/A	N/A	888	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	96.7	N/A	N/A	N/A	129	N/A	N/A	0.8	50 - 5,000
Mercury	**0.32**	**0.33**	**0.27**	0.13	**0.58**	0.13	0.17	**0.21**	0.1	0.001 - 0.2
Nickel	N/A	8.4	N/A	N/A	N/A	7.4	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	341	N/A	N/A	N/A	332	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	0.47 B	1.1 B	0.5 B	0.5 B	U	U	9.0	0.1 - 3.9
Silver	9.1	16.2	10.6	7.8	6.4	4.3	4.0	4.5	2.0	---
Sodium	N/A	54.6	N/A	N/A	N/A	45.9 B	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	U	N/A	N/A	N/A	U	N/A	N/A	3.0	---
Vanadium	N/A	15.7	N/A	N/A	N/A	13.9	N/A	N/A	0.7	1 - 300
Zinc	N/A	**97.1**	N/A	N/A	N/A	**143**	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
[ ] : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-22		Boring B-23							
SAMPLE IDENTIFICATION	B-222526	B-222830	B-2302	B-2322	B-2324	B-2346	B-2368	B-23810	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	25' - 26'	28' - 30'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'		
DATE OF COLLECTION	6/09/2003	6/09/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96	96	54	84	82	74	83	93		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	885	N/A	N/A	5,860	N/A	N/A	N/A	17.0	33,000
Antimony	N/A	U	N/A	N/A	0.69 B	N/A	N/A	N/A	3.0	---
Arsenic	0.87 B	1	1.8 B	1.1	9	2.1	1.7	0.92 B	3.0	3 - 12*
Barium	4.2 B	5.8 B	17 B	11	35.9	15.2	18.2	7.5 B	4.0	15 - 600
Beryllium	N/A	0.052 B	N/A	N/A	0.4	N/A	N/A	N/A	0.5	0 - 1.75
Cadmium	0.42	U	U	U	U	2.5	U	U	0.7	0.1 - 1, (10***)
Calcium	N/A	26.2 B	N/A	N/A	1,260	N/A	N/A	N/A	240.0	130 - 35,000*
Chromium	8.1	4.2	18.6	12.9	9.7	**58.2**	18.6	11.4	0.6	1.5 - 40*, (50***)
Cobalt	N/A	0.56 B	N/A	N/A	4.1	N/A	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	2.1	N/A	N/A	18.5	N/A	N/A	N/A	4.0	1 - 50
Iron	N/A	2,710	N/A	N/A	8,360	N/A	N/A	N/A	26.0	2,000 - 550,000
Lead	1.6	0.74	11	3.6	23.7	10.4	3.9	2.5	4.0	200 - 500**
Magnesium	N/A	107	N/A	N/A	704	N/A	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	46.4	N/A	N/A	102	N/A	N/A	N/A	0.8	50 - 5,000
Mercury	0.11	U	0.047 B	U	0.061	0.02 B	U	U	0.1	0.001 - 0.2
Nickel	N/A	1.1 B	N/A	N/A	7.8	N/A	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	97.2	N/A	N/A	259	N/A	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	1.1 B	0.63 B	U	U	U	3.0	U	U	2.0	---
Sodium	N/A	8 B	N/A	N/A	68.5	N/A	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	U	N/A	N/A	U	N/A	N/A	N/A	3.0	---
Vanadium	N/A	3.3	N/A	N/A	17.3	N/A	N/A	N/A	0.7	1 - 300
Zinc	N/A	3.6	N/A	N/A	32	N/A	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
: Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-23	Boring B-24								
SAMPLE IDENTIFICATION	B-231012	B-2402	B-2422	B-2424	B-2446	B-2468	B-24810	B-241012	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	10' - 12'	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'		
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	94	80	92	90	92	95	97	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A	N/A	863	N/A	N/A	17.0	33,000
Antimony	N/A	N/A	N/A	N/A	N/A	0.27 B	N/A	N/A	3.0	---
Arsenic	0.65 B	**12.1**	1	7.6	4.3	0.51 B	0.53 B	0.58 B	3.0	3 - 12*
Barium	6 B	30.2	5.1 B	81.5	47	4.1 B	4 B	5.4 B	4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A	N/A	0.094 B	N/A	N/A	0.5	0 - 1.75
Cadmium	U	U	U	3.3	0.95	U	U	U	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A	N/A	50.9	N/A	N/A	240.0	130 - 35,000*
Chromium	7.8	14	14.4	33.8	24.9	1.6	3.3	2.8	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A	N/A	0.52 B	N/A	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A	N/A	2.1	N/A	N/A	4.0	1 - 50
Iron	N/A	N/A	N/A	N/A	N/A	3,460	N/A	N/A	26.0	2,000 - 550,000
Lead	1.5	24.6	1.8	24.6	13.1	0.89	0.88	1	4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A	N/A	129	N/A	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A	N/A	24.4	N/A	N/A	0.8	50 - 5,000
Mercury	U	**0.24**	U	0.14	0.033	U	U	U	0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A	N/A	0.9 B	N/A	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A	N/A	111	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	U	U	U	U	U	U	U	U	2.0	---
Sodium	N/A	N/A	N/A	N/A	N/A	8.8 B	N/A	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A	N/A	U	N/A	N/A	3.0	---
Vanadium	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A	0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A	N/A	4.0	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
bold : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	Boring B-25							BCPMW-1		
SAMPLE IDENTIFICATION	B-2502	B-2522	B-2524	B-2546	B-2568	B-25810	B-251012	MW-102	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	0 - 2"	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"		
DATE OF COLLECTION	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	6/10/2003	5/30/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	88	95	91	95	97	97	90	100		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	N/A	N/A	849	N/A	N/A	N/A	962	N/A	17.0	33,000
Antimony	N/A	N/A	U	N/A	N/A	N/A	U	N/A	3.0	---
Arsenic	2.4	1.4	5.8	0.96	0.86 B	0.44 B	1.1	7.4	3.0	3 - 12*
Barium	16.1	7.2 B	3.7 B	5.5 B	3.3 B	3.9 B	4.2 B	19.2	4.0	15 - 600
Beryllium	N/A	N/A	0.13 B	N/A	N/A	N/A	0.13 B	N/A	0.5	0 - 1.75
Cadmium	0.54	0.21 B	0.12 B	0.077 B	0.052 B	0.12 B	0.052 B	0.62	0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	43	N/A	N/A	N/A	55.3	N/A	240.0	130 - 35,000*
Chromium	16.1	11.1	2.1	3.5	3.8	3.4	3.7	27.1	0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	1.4 B	N/A	N/A	N/A	1 B	N/A	0.9	2.5 - 60*
Copper	N/A	N/A	1.8	N/A	N/A	N/A	1.9	N/A	4.0	1 - 50
Iron	N/A	N/A	3,130	N/A	N/A	N/A	3,340	N/A	26.0	2,000 - 550,000
Lead	11.2	1.8	0.98	0.61	0.71	0.51	0.77	24.6	4.0	200 - 500**
Magnesium	N/A	N/A	148	N/A	N/A	N/A	148	N/A	8.0	100 - 5,000
Manganese	N/A	N/A	42.1	N/A	N/A	N/A	49.6	N/A	0.8	50 - 5,000
Mercury	0.054	0.023 B	U	U	U	U	U	0.11	0.1	0.001 - 0.2
Nickel	N/A	N/A	1.7 B	N/A	N/A	N/A	1.2 B	N/A	0.8	0.5 - 25
Potassium	N/A	N/A	94.2	N/A	N/A	N/A	125	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	0.2 B	0.21 B	0.13 B	0.47 B	0.41 B	0.21 B	0.27 B	3.8	2.0	---
Sodium	N/A	N/A	4.9 B	N/A	N/A	N/A	7.7 B	N/A	83.0	6,000 - 8,000
Thallium	N/A	N/A	U	N/A	N/A	N/A	U	N/A	3.0	---
Vanadium	N/A	N/A	2.1 B	N/A	N/A	N/A	2.3 B	N/A	0.7	1 - 300
Zinc	N/A	N/A	3.1	N/A	N/A	N/A	4.3	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	U	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
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** : Background for metropolitan or suburban areas.
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: Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	BCPMW-1						BCPMW-2			
SAMPLE IDENTIFICATION	MW-122	MW-124	MW-146	MW-168	MW-1810	MW-11012	MW-202	MW-222		
SAMPLE DEPTH	2" - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	5/30/2003	5/30/2003	5/30/2003	5/30/2003	5/30/2003	5/30/2003	6/05/2003	6/05/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	100	100	100	92	97	89	81	93		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	7,710	N/A	N/A	N/A	N/A	913	N/A	N/A	17.0	33,000
Antimony	U	N/A	N/A	N/A	N/A	U	N/A	N/A	3.0	---
Arsenic	1.9	1.5	0.81 B	1.9	0.45 B	0.45 B	11.6	2.6	3.0	3 - 12*
Barium	47.2	7.9 B	8.6 B	16.5	5.9 B	5.8 B	36.3	23.6	4.0	15 - 600
Beryllium	0.11 B	N/A	N/A	N/A	N/A	0.054 B	N/A	N/A	0.5	0 - 1.75
Cadmium	0.22 B	0.085 B	0.14 B	0.055 B	0.12 B	0.06 B	1.4	2.3	0.7	0.1 - 1, (10***)
Calcium	U	N/A	N/A	N/A	N/A	U	N/A	N/A	240.0	130 - 35,000*
Chromium	7.9	5.5	2.3	5	2.4	2	**56.7**	**124**	0.6	1.5 - 40*, (50***)
Cobalt	4.7	N/A	N/A	N/A	N/A	0.92 B	N/A	N/A	0.9	2.5 - 60*
Copper	3.7	N/A	N/A	N/A	N/A	2.1	N/A	N/A	4.0	1 - 50
Iron	10,500	N/A	N/A	N/A	N/A	4,930	N/A	N/A	26.0	2,000 - 550,000
Lead	3.8	2.0	0.6	2.4	0.41 B	0.5 B	46.9	17.8	4.0	200 - 500**
Magnesium	558	N/A	N/A	N/A	N/A	121	N/A	N/A	8.0	100 - 5,000
Manganese	444	N/A	N/A	N/A	N/A	59	N/A	N/A	0.8	50 - 5,000
Mercury	0.015 B	U	U	U	U	U	0.16	0.074	0.1	0.001 - 0.2
Nickel	5.2	N/A	N/A	N/A	N/A	1.1 B	N/A	N/A	0.8	0.5 - 25
Potassium	198	N/A	N/A	N/A	N/A	89.1	N/A	N/A	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	U	9.0	0.1 - 3.9
Silver	0.38 B	0.29 B	0.38 B	0.26 B	0.4 B	0.23 B	8.9	4.2	2.0	---
Sodium	11.7 B	N/A	N/A	N/A	N/A	5 B	N/A	N/A	83.0	6,000 - 8,000
Thallium	0.67 B	N/A	N/A	N/A	N/A	0.23 B	N/A	N/A	3.0	---
Vanadium	12.4	N/A	N/A	N/A	N/A	2.1 B	N/A	N/A	0.7	1 - 300
Zinc	21.1	N/A	N/A	N/A	N/A	4	N/A	N/A	7.0	9 - 50
Hexavalent Chromium	U	U	U	U	U	U	U	11.90	3.0	1.5 - 40*, (50***)

Qualifiers:
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
: Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	BCPMW-2					BCPMW-3				
SAMPLE IDENTIFICATION	MW-224	MW-246	MW-268	MW-2810	MW-21012	MW-302	MW-322	MW-324	INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0 - 2"	2" - 2'	2' - 4'		
DATE OF COLLECTION	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003	6/05/2003		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91	90	93	97	93	78	92	91		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Aluminum	3,740	N/A	N/A	N/A	1,890	N/A	N/A	7,420	17.0	33,000
Antimony	2	N/A	N/A	N/A	U	N/A	N/A	91.6	3.0	---
Arsenic	2.3	7.3	0.7 B	0.68 B	2.2	6.3	2.5	U	3.0	3 - 12*
Barium	26.6	23.2	14.7	6.6 B	8.4 B	28.7	18.8	**735**	4.0	15 - 600
Beryllium	0.07 B	N/A	N/A	N/A	0.097 B	N/A	N/A	U	0.5	0 - 1.75
Cadmium	3.5	1	0.29	0.31	0.6	1.2	1.1	**26.6**	0.7	0.1 - 1, (10***)
Calcium	345	N/A	N/A	N/A	32.3 B	N/A	N/A	1,040	240.0	130 - 35,000*
Chromium	**210**	**56.5**	4.5	11.9	26.6	**74.7**	46.1	**4,730**	0.6	1.5 - 40*, (50***)
Cobalt	2.2 B	N/A	N/A	N/A	1 B	N/A	N/A	5.5	0.9	2.5 - 60*
Copper	20.9	N/A	N/A	N/A	6	N/A	N/A	**286**	4.0	1 - 50
Iron	5,010	N/A	N/A	N/A	4,120	N/A	N/A	12,700	26.0	2,000 - 550,000
Lead	22.9	25.1	1.3	1.8	2.3	48.2	13.1	**955**	4.0	200 - 500**
Magnesium	472	N/A	N/A	N/A	263	N/A	N/A	1,030	8.0	100 - 5,000
Manganese	102	N/A	N/A	N/A	54.4	N/A	N/A	122	0.8	50 - 5,000
Mercury	0.079	0.16	U	U	U	0.12	0.038	**1.2**	0.1	0.001 - 0.2
Nickel	3.5	N/A	N/A	N/A	2.2 B	N/A	N/A	**33.3**	0.8	0.5 - 25
Potassium	200	N/A	N/A	N/A	159	N/A	N/A	420	78.0	8,500 - 43,000*
Selenium	U	U	U	U	U	U	U	0.99 B	9.0	0.1 - 3.9
Silver	6.9	6.5	U	0.18 B	0.28 B	3.6	2.5	2.8	2.0	---
Sodium	17.2 B	N/A	N/A	N/A	12.4 B	N/A	N/A	36.5 B	83.0	6,000 - 8,000
Thallium	U	N/A	N/A	N/A	U	N/A	N/A	U	3.0	---
Vanadium	8	N/A	N/A	N/A	4	N/A	N/A	76.1	0.7	1 - 300
Zinc	**113**	N/A	N/A	N/A	15.8	N/A	N/A	**2,640**	7.0	9 - 50
Hexavalent Chromium	4.94	U	U	U	U	U	5.01	U	3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
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N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
☐ : Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-4 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
SOIL SAMPLING RESULTS
TAL/RCRA METALS AND HEXAVALENT CHROMIUM

SAMPLE LOCATION	BCPMW-3									
SAMPLE IDENTIFICATION	MW-346	MW-368	MW-3810	MW-31012					INSTRUMENT DETECTION LIMIT	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'						
DATE OF COLLECTION	6/05/2003	6/05/2003	6/05/2003	6/05/2003						
DILUTION FACTOR	1	1	1	1						
PERCENT SOLIDS	92	85	89	95						
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)					(ug/L)	(mg/kg)
Aluminum	N/A	N/A	N/A	N/A					17.0	33,000
Antimony	N/A	N/A	N/A	N/A					3.0	---
Arsenic	2.7	3.2	1	0.43 B					3.0	3 - 12*
Barium	29.9	48.1	5.9 B	2.8 B					4.0	15 - 600
Beryllium	N/A	N/A	N/A	N/A					0.5	0 - 1.75
Cadmium	1.6	0.2 B	0.056 B	U					0.7	0.1 - 1, (10***)
Calcium	N/A	N/A	N/A	N/A					240.0	130 - 35,000*
Chromium	**119**	21.2	3.6	2.2					0.6	1.5 - 40*, (50***)
Cobalt	N/A	N/A	N/A	N/A					0.9	2.5 - 60*
Copper	N/A	N/A	N/A	N/A					4.0	1 - 50
Iron	N/A	N/A	N/A	N/A					26.0	2,000 - 550,000
Lead	18.8	8.3	0.78	0.72					4.0	200 - 500**
Magnesium	N/A	N/A	N/A	N/A					8.0	100 - 5,000
Manganese	N/A	N/A	N/A	N/A					0.8	50 - 5,000
Mercury	0.095	0.038	U	U					0.1	0.001 - 0.2
Nickel	N/A	N/A	N/A	N/A					0.8	0.5 - 25
Potassium	N/A	N/A	N/A	N/A					78.0	8,500 - 43,000*
Selenium	U	U	U	U					9.0	0.1 - 3.9
Silver	2.2	0.45 B	0.23 B	U					2.0	---
Sodium	N/A	N/A	N/A	N/A					83.0	6,000 - 8,000
Thallium	N/A	N/A	N/A	N/A					3.0	---
Vanadium	N/A	N/A	N/A	N/A					0.7	1 - 300
Zinc	N/A	N/A	N/A	N/A					7.0	9 - 50
Hexavalent Chromium	U	34.70	U	U					3.0	1.5 - 40*, (50***)

Qualifiers:
U: Analyte analyzed for but not detected.
B: Analyte concentration is less than the CRDL, but greater than the IDL.
N/A: Analyte not analyzed for.

Notes:
--- : Not established.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria in TAGM 4046 Appendix A.
: Value exceeds the Eastern USA Background Level or Recommended Soil Cleanup Objective.

TABLE B-5

GROUNDWATER SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

TABLE B-5
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE IDENTIFICATION	BCPMW-1	BCPMW-2	BCPMW-3	BCPMW-1	BCPMW-2	BCPMW-3	CONTRACT	NYSDEC CLASS GA
DATE OF COLLECTION	6/19/2003	6/19/2003	6/19/2003	9/12/03	9/12/03	9/12/03	REQUIRED	GROUNDWATER STANDARDS/
DILUTION FACTOR	1	2	40	1	1	1	DETECTION LIMIT	GUIDANCE VALUES
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Dichlorodifluoromethane	U	U	U	U	U	U	5	5 ST
Chloromethane	U	U	U	U	U	U	5	----
Vinyl Chloride	U	U	U	U	U	**6**	5	2 ST
Bromomethane	U	U	U	U	U	U	5	5 ST
Chloroethane	U	U	U	U	U	U	5	5 ST
Trichlorofluoromethane	U	U	U	U	U	U	5	5 ST
1,1-Dichloroethene	U	U	U	U	U	**11**	5	5 ST
Acetone	U	U	U	U	U	U	5	50 GV
Carbon Disulfide	U	U	U	U	U	U	5	----
Methylene Chloride	U	U	U	4 J	U	U	5	5 ST
trans-1,2-Dichloroethene	U	U	U	U	U	2 J	5	5 ST
Methyl tert-Butyl Ether	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	**18**	U	U	**18**	**10**	5	5 ST
2-Butanone	U	U	U	U	U	U	5	50 GV
cis-1,2-Dichloroethene	4 J	**120**	**5,300**	**6**	**150**	**2,900 D**	5	5 ST
Chloroform	4 J	U	U	3 J	2 J	6	5	7 ST
1,1,1-Trichloroethane	U	U	U	U	1 J	**6**	5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	5	5 ST
1,2-Dichloroethane	U	U	U	U	U	U	5	0.6 ST
Benzene	U	U	U	U	U	U	5	1 ST
Trichloroethene	**83**	**230**	**620**	**76**	**280 D**	**760 D**	5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	5	1 ST
Bromodichloromethane	U	U	U	U	U	U	5	50 GV
cis-1,3-Dichloropropene	U	U	U	U	U	U	5	0.4 ST
4-Methyl-2-pentanone	U	U	U	U	U	U	5	----
Toluene	U	U	U	U	U	U	5	5 ST
trans-1,3-Dichloropropene	U	U	U	U	U	U	5	0.4 ST
1,1,2-Trichloroethane	U	U	U	U	U	U	5	1 ST
Tetrachloroethene	U	U	U	U	2 J	U	5	5 ST
2-Hexanone	U	U	U	U	U	U	5	50 GV
Dibromochloromethane	U	U	U	U	U	U	5	50 GV
1,2-Dibromoethane	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	5	5 ST
Ethylbenzene	U	U	U	U	U	U	5	5 ST

TABLE B-5 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE IDENTIFICATION	BCPMW-1	BCPMW-2	BCPMW-3	BCPMW-1	BCPMW-2	BCPMW-3	CONTRACT	NYSDEC CLASS GA
DATE OF COLLECTION	6/19/2003	6/19/2003	6/19/2003	9/12/03	9/12/03	9/12/03	REQUIRED	GROUNDWATER STANDARDS/
DILUTION FACTOR	1	2	40	1	1	1	DETECTION LIMIT	GUIDANCE VALUES
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
m,p-Xylene	U	U	U	U	U	U	5	5 ST
o-Xylene	U	U	U	U	U	U	5	5 ST
Xylene (total)	U	U	U	U	U	U	5	5 ST
Styrene	U	U	U	U	U	U	5	5 ST
Bromoform	U	U	U	U	U	U	5	50 GV
Isopropylbenzene	U	U	U	U	U	U	5	5 ST
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	5	3 ST
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	5	0.04 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	5	5 ST
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	5	5 ST
Methyl Acetate	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	5	----
Methylcyclohexane	U	U	U	U	U	U	5	----
Total VOCs	91	368	5,920	89	453	3,701		

Qualifiers:
U: Constituent analyzed for but not detected.
J: Constituent detected at a concentration below the CRDL, value estimated.
D: Result taken from reanalysis at a secondary dilution.
U*: Result qualified as non-detect based on validation criteria.

Notes:
ST : Standard.
GV : Guidance value.
---- : Not established.
☐ : Value exceeds Class GA Groundwater Standard/Guidance Value.

TABLE B-5 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE IDENTIFICATION	BCPMW-1	BCPMW-2	BCPMW-3	B24MW-2	B24MW-3	B30MW-1	CONTRACT REQUIRED DETECTION LIMIT	NYSDEC CLASS GA GROUNDWATER STANDARDS/ GUIDANCE VALUES
DATE OF COLLECTION	11/25/03	11/25/03	11/25/03	11/26/03	11/26/03	11/26/03		
DILUTION FACTOR	1	2	40	1	1	1		
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Dichlorodifluoromethane	U	U	U	U	U	U	5	5 ST
Chloromethane	U	U	U	U	U	U	5	----
Vinyl Chloride	U	U	**70 J**	U	U	U	5	2 ST
Bromomethane	U	U	U	U	U	U	5	5 ST
Chloroethane	U	U	U	U	U	U	5	5 ST
Trichlorofluoromethane	U	U	U	U	U	U	5	5 ST
1,1-Dichloroethene	U	U	**44 J**	U	U	U	5	5 ST
Acetone	U	U	U	U	U	U	5	50 GV
Carbon Disulfide	U	U	U	U	U	U	5	----
Methylene Chloride	U*	U	U	U*	U	U	5	5 ST
trans-1,2-Dichloroethene	U	U	U	U	U	U	5	5 ST
Methyl tert-Butyl Ether	U	U	U	U	U	U	5	----
1,1-Dichloroethane	U	**16**	**18**	U	U	U	5	5 ST
2-Butanone	U	U	U	U	U	U	5	50 GV
cis-1,2-Dichloroethene	5	**120**	**5200 D**	U	**6**	U	5	5 ST
Chloroform	2 J	U	U	U	U	U	5	7 ST
1,1,1-Trichloroethane	U	U	U	U	U	U	5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	5	5 ST
1,2-Dichloroethane	U	U	U	U	U	U	5	0.6 ST
Benzene	U	U	U	U	U	U	5	1 ST
Trichloroethene	**60**	**210**	**1800**	1 J	**54**	U	5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	5	1 ST
Bromodichloromethane	U	U	U	U	U	U	5	50 GV
cis-1,3-Dichloropropene	U	U	U	U	U	U	5	0.4 ST
4-Methyl-2-pentanone	U	U	U	U	U	U	5	----
Toluene	U	U	U	U	U	U	5	5 ST
trans-1,3-Dichloropropene	U	U	U	U	U	U	5	0.4 ST
1,1,2-Trichloroethane	U	U	U	U	U	U	5	1 ST
Tetrachloroethene	U	U	U	U	U	U	5	5 ST
2-Hexanone	U	U	U	U	U	U	5	50 GV
Dibromochloromethane	U	U	U	U	U	U	5	50 GV
1,2-Dibromoethane	U	U	U	U	U	U	5	----
Chlorobenzene	U	U	U	U	U	U	5	5 ST
Ethylbenzene	U	U	U	U	U	U	5	5 ST

TABLE B-5 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE IDENTIFICATION	BCPMW-1	BCPMW-2	BCPMW-3	B24MW-2	B24MW-3	B30MW-1	CONTRACT REQUIRED DETECTION LIMIT	NYSDEC CLASS GA GROUNDWATER STANDARDS/ GUIDANCE VALUES
DATE OF COLLECTION	11/25/03	11/25/03	11/25/03	11/26/03	11/26/03	11/26/03		
DILUTION FACTOR	1	2	40	1	1	1		
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
m,p-Xylene	U	U	U	U	U	U	5	5 ST
o-Xylene	U	U	U	U	U	U	5	5 ST
Xylene (total)	U	U	U	U	U	U	5	5 ST
Styrene	U	U	U	U	U	U	5	5 ST
Bromoform	U	U	U	U	U	U	5	50 GV
Isopropylbenzene	U	U	U	U	U	U	5	5 ST
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	5	3 ST
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	5	0.04 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	5	5 ST
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	5	5 ST
Methyl Acetate	U	U	U	U	U	U	5	----
Cyclohexane	U	U	U	U	U	U	5	----
Methylcyclohexane	U	U	U	U	U	U	5	----
Total VOCs	67	346	7,132	1	60	0		

Qualifiers:
U: Constituent analyzed for but not detected.
J: Constituent detected at a concentration below the CRDL, value estimated.
D: Result taken from reanalysis at a secondary dilution.
U*: Result qualified as non-detect based on validation criteria.

Notes:
ST : Standard.
GV : Guidance value.
---- : Not established.
☐ : Value exceeds Class GA Groundwater Standard/Guidance Value.

TABLE B-6

GROUNDWATER SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

TABLE B-6
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE IDENTIFICATION	BCPMW-1	BCPMW-2	BCPMW-3	CONTRACT	NYSDEC CLASS GA
DATE OF COLLECTION	6/19/2003	6/19/2003	6/19/2003	REQUIRED	GROUNDWATER STANDARDS/
DILUTION FACTOR	1	1	1	DETECTION LIMIT	GUIDANCE VALUES
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Phenol	U	U	U	10	1 ST*
bis(2-Chloroethyl)ether	U	U	U	10	1 ST
2-Chlorophenol	U	U	U	10	1 ST*
2-Methylphenol	U	U	U	10	1 ST*
2,2'-oxybis(1-chloropropane)	U	U	U	10	----
4-Methylphenol	U	U	U	10	1 ST*
N-Nitroso-di-n-propylamine	U	U	U	10	----
Hexachloroethane	U	U	U	10	5 ST
Nitrobenzene	U	U	U	10	0.4 ST
Isophorone	U	U	U	10	50 GV
2-Nitrophenol	U	U	U	10	1 ST*
2,4-Dimethylphenol	U	U	U	10	50 GV
2,4-Dichlorophenol	U	U	U	10	5 ST
Naphthalene	U	U	U	10	10 GV
4-Chloroaniline	U	U	U	10	5 ST
bis(2-Chloroethoxy)methane	U	U	U	10	5 ST
Hexachlorobutadiene	U	U	U	10	0.5 ST
4-Chloro-3-methylphenol	U	U	U	10	1 ST*
2-Methylnapthalene	U	U	U	10	----
Hexachlorocyclopentadiene	U	U	U	10	5 ST
2,4,6-Trichlorophenol	U	U	U	10	1 ST*
2,4,5-Trichlorophenol	U	U	U	20	1 ST*
2-Chloronapthalene	U	U	U	10	10 GV
2-Nitroaniline	U	U	U	20	5 ST
Dimethylphthalate	U	U	U	10	50 GV
Acenaphthylene	U	U	U	10	----
2,6-Dinitrotoluene	U	U	U	10	5 ST
3-Nitroaniline	U	U	U	20	5 ST
Acenaphthene	U	U	U	10	20 GV
2,4-Dinitrophenol	U	U	U	20	10 GV
4-Nitrophenol	U	U	U	20	1 ST*
Dibenzofuran	U	U	U	10	----
2,4-Dinitrotoluene	U	U	U	10	5 ST

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE IDENTIFICATION	BCPMW-1	BCPMW-2	BCPMW-3	CONTRACT	NYSDEC CLASS GA
DATE OF COLLECTION	6/19/2003	6/19/2003	6/19/2003	REQUIRED	GROUNDWATER STANDARDS/
DILUTION FACTOR	1	1	1	DETECTION LIMIT	GUIDANCE VALUES
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Diethylphthalate	U	U	U	10	50 GV
4-Chlorophenyl-phenylether	U	U	U	10	----
Fluorene	U	U	U	10	50 GV
4-Nitroanline	U	U	U	20	5 ST
4,6-Dinitro-2-methylphenol	U	U	U	20	1 ST*
N-Nitrosodiphenylamine	U	U	U	10	50 GV
4-Bromophenyl-phenylether	U	U	U	10	----
Hexachlorobenzene	U	U	U	10	0.04 ST
Pentachlorophenol	U	U	U	20	1 ST*
Phenanthrene	U	U	U	10	50 GV
Anthracene	U	U	U	10	50 GV
Carbazole	U	U	U	10	----
Di-n-butylphthalate	U	U	U	10	50 ST
Fluoranthene	U	U	U	10	50 GV
Pyrene	U	U	U	10	50 GV
Butylbenzylphthalate	U	U	U	10	50 GV
3,3'-Dichlorobenzidine	U	U	U	10	5 ST
Benzo(a)anthracene	U	U	U	10	0.002 GV
Chrysene	U	U	U	10	0.002 GV
bis(2-Ethylhexyl)phthalate	U	U	U	10	5 ST
Di-n-octylphthalate	U	U	U	10	50 GV
Benzo(b)fluoranthene	U	U	U	10	0.002 GV
Benzo(k)fluoranthene	U	U	U	10	0.002 GV
Benzo(a)pyrene	U	U	U	10	ND ST
Indeno(1,2,3-cd)pyrene	U	U	U	10	0.002 GV
Dibenzo(a,h)anthracene	U	U	U	10	----
Benzo(g,h,i)perylene	U	U	U	10	----
1,1'-Biphenyl	U	U	U	10	5 ST
Acetophenone	U	U	U	10	----
Atrazine	U	U	U	10	7.5 ST
Benzaldehyde	U	U	U	10	----
Caprolactam	U	U	U	10	----
Total PAHs	0	0	0		
Total CaPAHs	0	0	0		
Total SVOCs	0	0	0		

Qualifiers:
U: Constituent analyzed for but not detected.
J: Constituent detected at a concentration below the CRDL, value estimated.

Notes:
ST : Standard.
GV : Guidance value.
--- : Not established.
* : Applies to the sum of all Phenols

TABLE B-7

GROUNDWATER SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

TABLE B-7
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE IDENTIFICATION	BCPMW-1	BCPMW-2	BCPMW-3	CONTRACT REQUIRED DETECTION LIMIT	NYSDEC CLASS GA GROUNDWATER STANDARDS/ GUIDANCE VALUES
DATE OF COLLECTION	6/19/2003	6/19/2003	6/19/2003		
DILUTION FACTOR	1	1	1		
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Aroclor-1016	U	U	U	1.0	---
Aroclor-1221	U	U	U	1.0	---
Aroclor-1232	U	U	U	1.0	---
Aroclor-1242	U	U	U	1.0	---
Aroclor-1248	U	U	U	1.0	---
Aroclor-1254	U	U	U	1.0	---
Aroclor-1260	U	U	U	1.0	---
TOTAL PCBs	0	0	0		0.09 ST

Qualifiers:
U: Constituent analyzed for but not detected.

Notes:
ST : Standard.
--- : Not established.

TABLE B-8

GROUNDWATER SAMPLING RESULTS
TAL METALS AND HEXAVALENT CHROMIUM

TABLE B-8
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
INVESTIGATION SAMPLING PROGRAM
GROUNDWATER SAMPLING RESULTS
TAL METALS AND HEXAVALENT CHROMIUM

SAMPLE IDENTIFICATION	BCPMW-1		BCPMW-2		BCPMW-3		INSTRUMENT DETECTION LIMITS	NYSDEC CLASS GA GROUNDWATER STANDARDS/ GUIDANCE VALUES
DATE OF COLLECTION	6/19/2003		6/19/2003		6/19/2003			
TOTAL/DISSOLVED	undissolved	dissolved	undissolved	dissolved	undissolved	dissolved		
DILUTION FACTOR	1	1	1	1	1	1		
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Aluminum	19,600	U	55,000	U	24,400	U	17.0	----
Antimony	U	U	**3.8 B**	U	U	U	3.0	3 ST
Arsenic	**52.4**	U	**113**	U	**81.5**	U	3.0	25 ST
Barium	169 B	42.8 B	260	75.1 B	129 B	34.4 B	4.0	1,000 ST
Beryllium	1.3 B	U	2.8 B	U	1.2 B	U	0.50	3 GV
Cadmium	1.1 B	U	U	U	U	U	0.70	5 ST
Calcium	6,840	5,230	43,300	39,700	12,200	9,620	240	----
Chromium	**102**	U	**93.3**	U	36.3	U	0.60	50 ST
Cobalt	13 B	8.7 B	30.3 B	6.1 B	12.8 B	6.8 B	0.90	----
Copper	75	14.4 B	110	U	47.5	U	4.0	200 ST
Iron	**67,800**	44.4 B	**111,000**	29.8 B	**61,300**	**463**	26.0	300 ST
Lead	**41.9**	U	**72.6**	U	**31.4**	U	4.0	25 ST
Magnesium	2,940	2,120	16,500	15,500	4,890	3,610	8.0	35,000 GV
Manganese	**302**	204	**377**	88.1	221	131	0.8	300 ST
Mercury	U	U	U	U	U	U	0.10	0.7 ST
Nickel	28.7 B	10.4 B	32.1 B	3 B	12.8 B	2.7 B	0.80	100 ST
Potassium	9,300	6,100	6,860	2,760	4,540	1,890	78.0	----
Selenium	U	U	U	U	U	U	9.0	10 ST
Silver	2.3 B	U	U	U	U	U	2.0	50 ST
Sodium	**24,500**	**21,700**	17,300	11,800	**27,500**	**23,700**	83.0	20,000 ST
Thallium	U	U	**10.3 B**	U	U	U	3.0	0.5 GV
Vanadium	126	U	313	U	158	U	0.70	----
Zinc	134	42.8 B	147	14.8 B	116	19.8 B	7.0	2,000 GV
Hexavalent Chromium	U	U	U	U	U	U	30	50 ST
Iron and Manganese*	**68,102**	248	**111,377**	118	**61,521**	**594**	----	500 ST

Qualifiers:
U: Analyzed for but not detected.
B: Concentration is less than the CRDL but greater than the IDL.

Notes:
ST : Standard.
GV : Guidance value.
---- : Not established.
* : Value summed from laboratory-reported values.
bold : Value exceeds Class GA Groundwater Standard/Guidance Value.

APPENDIX C

DATA VALIDATION DOCUMENTATION

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B0946 – 21 soils

shallow samples run for PCB, RCRA metals and hex chrom, 5 deeper samples run for VOA, SVOA,PCB , TAL metals and hex chrom

B6(12-14) RUN AS MS/MSD

B11(10-12), B11(18-20), B6(12-14), B6(18-20), B6(4-6) exhibited fuel product contamination

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B6(0-2)	5/28	6/9	6/18-6/20	
B6(2'-2')	5/28	6/9	6/18-6/20	
B6(2-4)	5/28	6/9	6/18-6/20	
B6(4-6)*	5/28	6/6, 6/9	5/30, 6/18, 6/18-6/20	
B6(8-10)	5/28	6/9	6/18-6/20	
B6(10-12)	5/28	6/9	6/18-6/20	
B6(12-14)*	5/28	6/6, 6/9	5/30, 6/18, 6/18-6/20	
B6(14-16)	5/28	6/9	6/18-6/20	
B6(16-18)	5/28	6/9	6/18-6/20	
B6(18-20)*	5/28	6/6, 6/9	5/30, 6/18, 6/18-6/20	
B11(0-2)	5/28	6/9	6/18-6/20	
B11(2'-2')	5/28	6/9	6/18-6/20	
B11(2-4)	5/28	6/9	6/18-6/20	
B11(4-6)	5/28	6/9	6/18-6/20	
B11(6-8)	5/28	6/9	6/18-6/20	
B11(8-10)	5/28	6/9	6/18-6/20	
B11(10-12)*	5/28	6/6, 6/9	5/30, 6/18, 6/18-6/20	
B11(12-14)	5/28	6/9	6/18-6/20	
B11(14-16)	5/28	6/9	6/18-6/20	
B11(16-18)	5/28	6/9	6/18-6/20	
B11(18-20)*	5/28	6/6, 6/9	6/3, 6/18, 6/18-6/20	

* RUN FOR VOA,SVOA OTHERS RUN FOR PCB, PP

VOA,SVOA, PCB TALMETALS, hex cr	FOR PCB, PP METALS, hex cr

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F6930	YES	INITIAL
2. V2F6940A	YES	SAMPLES
3. V2F6970A	YES	SAMPLES
4. V2F7000A	YES	SAMPLES
5.		
6.		
7. S4A0965	YES	INITIAL
8. S4A0973	YES	SAMPLES
9. S4A1075	YES	INITIAL
10. S4A1159	YES	SAMPLES
11.		
12.		
13.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 5/29, 6/17, 6/22

A. Standard Data Files

Standard 1 ID:	V2F6932, S4A0967, S4A1082	Conc:	5, 10
Standard 2 ID:	V2F6935, S4A0968 S4A1076	Conc:	20, 50
Standard 3 ID:	V2F6931, S4A0970, S4A1080	Conc:	50, 80
Standard 4 ID:	V2F6934, S4A0971, S4A1079	Conc:	100, 120
Standard 5 ID:	V2F6933, S4A0966, S4A1078	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments: All ok

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 7/30/03

Fraction: VOA, SVOA

Date of Calibration: 5/29, 6/17, 6/22

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 5/29, 6/17, 6/22

Date of Continuing Calibration: 5/30, 6/2, 6/3, 6/18, 6/25 File ID: V2F6941, V2F6971A, V2F7001, S4A0974, S4A1160

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration (list associated samples)

ok

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes NO*

If No, please note below

Several samples had area counts outside of QC limits but samples were reanalyzed or run at secondary dilutions with similar results, no further action was required

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
Methylene chloride was detected in VBLK2E	2 ppb		MeCl2 results for all associated samples have been qualified as non-detect

List the samples associated with this method blank.

SVOA and PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

For SVOA analysis protocol allows 1 surrogate recovery per fraction to be outside QC limits as long as it is >10%.

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B6(12-14) Matrix: SOIL

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

SVOA several recoveries were slightly below limits but all RPD's were in limits so no action, qualification of the data is required

VOA several recoveries in MSD above limits but RPD ok, no action required

PCB recoveries were high in both MS/MSD but RPD ok

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
B6(0-2)	5/28		5/30-6/4	NO
B6(2'-2')	5/28		5/30-6/4	NO
B6(2-4)	5/28		5/30-6/4	NO
B6(4-6)*	5/28		5/30-6/4	NO
B6(8-10)	5/28		5/30-6/4	NO
B6(10-12)	5/28		5/30-6/4	NO
B6(12-14)*	5/28		5/30-6/4	NO
B6(14-16)	5/28		5/30-6/4	NO
B6(16-18)	5/28		5/30-6/4	NO
B6(18-20)*	5/28		5/30-6/4	NO
B11(0-2)	5/28		5/30-6/4	NO
B11(2'-2')	5/28		5/30-6/4	NO
B11(2-4)	5/28		5/30-6/4	NO
B11(4-6)	5/28		5/30-6/4	NO
B11(6-8)	5/28		5/30-6/4	NO
B11(8-10)	5/28		5/30-6/4	NO
B11(10-12)*	5/28		5/30-6/4	NO
B11(12-14)	5/28		5/30-6/4	NO
B11(14-16)	5/28		5/30-6/4	NO
B11(16-18)	5/28		5/30-6/4	NO
B11(18-20)*	5/28		5/30-6/4	NO

* TAL METALS, OTHERS PP METALS

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

B6(12-14)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

5 analytes had RPD out of limits

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

6(12-14)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes Sb and Cr had %R out of limits, post digest spike run recoveries ok

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of ± w 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B0952 – 23 soils

shallow samples run for PCB, RCRA metals and hex chrom, 5 deeper samples run for VOA, SVOA,PCB , TAL metals and hex chrom

Sample B2(6-8) had a %moisture >50% all results qualified as estimated possibly biased high

Evidence of fuel contamination in sample B2(6-8)

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B1(8-10))	5/29	6/10	6/18-6/19	no
B1(10-12)*	5/29	6/11, 6/10	5/30, 6/25, 6/18-6/19	No
B2(2"-2')	5/29	6/10	6/18-6/19	No
B2(0-2)	5/29	6/10	6/18-6/19	No
B2(2-4)	5/29	6/10	6/18-6/19	No
B2(4-6)	5/29	6/10	6/18-6/19	No
B2(6-8)*	5/29	6/11, 6/10	6/2, 6/27, 6/18-6/19	No
B2(8-10)	5/29	6/10	6/18-6/19	No
B2(10-11)	5/29	6/10	6/18-6/19	No
B2(12-14)*	5/29	6/11, 6/10	5/30, 6/26, 6/18-6/19	No
B4(0-2)	5/29	6/10	6/18-6/19	No
B4(2'-2')	5/29	6/10	6/18-6/19	No
B4(2-3)*	5/29	6/11, 6/10	5/30, 6/26, 6/18-6/19	No
B4(4-6)	5/29	6/10	6/18-6/19	No
B4(6-8)	5/29	6/10	6/18-6/19	No
B4(3-4)	5/29	6/10	6/18-6/19	No
B3(0-2)	5/29	6/10	6/18-6/19	No
B3(2"-2')	5/29	6/10	6/18-6/19	No
B3(2-4)* MS/MSD	5/29	6/11, 6/10	6/2,6/26, 6/18-6/19	No
B3(4-6)	5/29	6/10	6/18-6/19	No
B3(6-8)	5/29	6/10	6/18-6/19	No
B3(8-10)	5/29	6/10	6/18-6/19	No

B2(11-12)	5/29	6/10	6/18-6/19	No
* RUN FOR VOA,SVOA, PCB TALMETALS	OTHERS RUN FOR PCB, PP METALS			

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F6930	YES	INITIAL
2. V2F6940A	YES	SAMPLES
3. V2F6970A	YES	SAMPLES
4. V2F7040	YES	INITIAL
5. V2F7070	YES	MSD
6.		
7. S3C4347	YES	INITIAL
8. S3C4355	YES	SAMPLES
9. S3C4410	YES	SAMPLES
10.		
11.		
12.		
13.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 5/29, 6/4, 6/25

A. Standard Data Files

Standard 1 ID:	V2F6932, V2F7046, S3C4350	Conc:	5, 10
Standard 2 ID:	V2F6935, V2F7045, S3C4348	Conc:	20, 50
Standard 3 ID:	V2F6931, V2F7041, S3C4352	Conc:	50, 80
Standard 4 ID:	V2F6934, V2F7044, S3C4351	Conc:	100, 120
Standard 5 ID:	V2F6933, V2F7043, S3C4349	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 7/30/03

Fraction: VOA, SVOA

Date of Calibration: 5/29, 6/4, 6/25

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 5/29, 6/4, 6/25

Date of Continuing Calibration: 5/30, 6/2, 6/5, 6/25, 6/27 File ID: V2F6941, V2F6971A, V2F7071, S3C4356, S3C4411

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration (list associated samples)

ok

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
Methylene chloride was detected in VBLK2E, vblk2f	2 ppb, 1 ppb		MeCl2 results for all associated samples have been qualified as non-detect

List the samples associated with this method blank.

SVOA and PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

For SVOA analysis protocol allows 1 surrogate recovery per fraction to be outside QC limits as long as it is >10%. PCB RECOVERY LIMITS ARE ADVISORY ONLY

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B3(2-4) Matrix: SOIL

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

SVOA 5 of 120 recoveries were outside limits and 3 of 60 RPD's were out no action, required

VOA 12 of 96 recoveries in MS/MSD above limits 6 of 48 RPD out, no action required

PCB recoveries were high in both MS/MSD but RPD ok

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
B1(8-10))	5/29		6/03-6/9	NO
B1(10-12)*	5/29		6/03-6/9	NO
B2(2"-2')	5/29		6/03-6/9	NO
B2(0-2)	5/29		6/03-6/9	NO
B2(2-4)	5/29		6/03-6/9	NO
B2(4-6)	5/29		6/03-6/9	NO
B2(6-8)*	5/29		6/03-6/9	NO
B2(8-10)	5/29		6/03-6/9	NO
B2(10-11)	5/29		6/03-6/9	NO
B2(12-14)*	5/29		6/03-6/9	NO
B4(0-2)	5/29		6/03-6/9	NO
B4(2'-2')	5/29		6/03-6/9	NO
B4(2-3)*	5/29		6/03-6/9	NO
B4(4-6)	5/29		6/03-6/9	NO
B4(6-8)	5/29		6/03-6/9	NO
B4(3-4)	5/29		6/03-6/9	NO
B3(0-2)	5/29		6/03-6/9	NO
B3(2"-2')	5/29		6/03-6/9	NO
B3(2-4)*	5/29		6/03-6/9	NO
B3(4-6)	5/29		6/03-6/9	NO
B3(6-8)	5/29		6/03-6/9	NO
B3(8-10)	5/29		6/03-6/9	NO
B2(11-12)	5/29		6/03-6/9	NO

* run for TAL metals others PP metals

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

B3(2-4)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

Mn RPD out of limits

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

B3(2-4)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes Sb and Cn had %R out of limits, post digest spike run recoveries ok

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of +/- 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B0973 – 31 soils

shallow samples run for PCB, RCRA metals and hex chrom, deeper samples run for VOA, SVOA, TAL metals and hex chrom

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B5(8-10)	5/30/03	6/11	6/20-6/22	no
B5(10-12)	5/30/03	6/11	6/20-6/22	no
B5(12-14)*	5/30/03	6/11	6/4, 6/28, 6/20-6/22	no
B5(14-16)	5/30/03	6/11	6/20-6/22	no
B5(16-18)	5/30/03	6/11	6/20-6/22	no
B5(18-20)	5/30/03	6/11	6/20-6/22	no
B5(20-22)*	5/30/03	6/11	6/3, 6/25, 6/20-6/22	no
B8(0-2)	5/30/03	6/11	6/20-6/22	no
B8(2”-2’)	5/30/03	6/11	6/20-6/22	no
B8(2-4)	5/30/03	6/11	6/20-6/22	no
B8(4-6)	5/30/03	6/11	6/20-6/22	no
B8(6-8)	5/30/03	6/11	6/20-6/22	no
B8(8-10)	5/30/03	6/11	6/20-6/22	no
B8(10-12)*	5/30/03	6/11	6/4, 6/26, 6/20-6/22	no
B16(0-2)	5/30/03	6/11	6/20-6/22	no
B16(2”-2’)	5/30/03	6/11	6/20-6/22	no
B16(2-4)	5/30/03	6/11	6/20-6/22	no
B16(4-6)	5/30/03	6/11	6/20-6/22	no
B16(6-8)	5/30/03	6/11	6/20-6/22	no
B16(8-10)	5/30/03	6/11	6/20-6/22	no
B16(10-12)	5/30/03	6/11	6/20-6/22	no
B16(12-14)	5/30/03	6/11	6/20-6/22	no
B16(14-16)*	5/30/03	6/11	6/3, 6/25, 6/20-6/22	no

			6/22	
B18(0-2)	5/30/03	6/11	6/20-6/22	no
B18(2-4)*	5/30/03	6/11	6/3, 6/26, 6/20-6/22	no
B18(2"-2')	5/30/03	6/11	6/20-6/22	no
B18(4-6)	5/30/03	6/11	6/20-6/22	no
B18(6-8)	5/30/03	6/11	6/20-6/22	no
B18(8-10)	5/30/03	6/11	6/20-6/22	no
B18(10-12)	5/30/03	6/11	6/20-6/22	no
B18(12-14)* **	5/30/03	6/11	6/3, 6/25, 6/20-6/22	no

* sample run for VOA, SVOA, PCB, TAL Metals and hex Cr	Other samples run for PCB, Ppmetals and hex CR	** Run as MS/MSD

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F6930	YES	INITIAL
2. V2F7000A	YES	SAMPLES
3. V2F7040	YES	INITIAL AND SAMPLES
4.		
5. S3C4347	YES	INITIAL
6. S3C4355	YES	SAMPLES
7. S3C4410	YES	SAMPLES
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 5/29, 6/4, 6/25,

A. Standard Data Files

Standard 1 ID:	V2F6932, V2F7046, S3C4350	Conc:	5, 10
Standard 2 ID:	V2F6935, V2F7045, S3C4348	Conc:	20, 50
Standard 3 ID:	V2F6931, V2F7041, S3C4352	Conc:	50, 80
Standard 4 ID:	V2F6934, V2F7044, S3C4351	Conc:	100, 120
Standard 5 ID:	V2F6933, V2F7043, S3C4349	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/1/03

Fraction: VOA, SVOA

Date of Calibration: 5/29, 6/4, 6/25

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 5/29, 6/4, 6/25

Date of Continuing Calibration: 6/3, 6/4, 6/25, 6/27 File ID: V2F7001, V2F7041, S3C4356, S3C4411

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments:

B. Overall assessment of Continuing Calibration (list associated samples)

ok

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
Methylene chloride was detected in VBLK2H	4 ppb		MeCl2 results for all associated samples have been qualified as non-detect

List the samples associated with this method blank.

PCB blanks were clean

SVOA blank clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA, PCB

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B18(12-14), b16(2-4) PCB only Matrix: SOIL

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

SVOA 2 of 120 spike recoveries were slightly below limits but all RPD's were in limits so no action required

VOA 6 of 96 spike recoveries were outside limits but all RPD ok, no action required

PCB recoveries were within limits for both MS/MSDs

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
B5(8-10)	5/30/03		6/4	NO
B5(10-12)	5/30/03		6/4	NO
B5(12-14)*	5/30/03		6/4	NO
B5(14-16)	5/30/03		6/4	NO
B5(16-18)	5/30/03		6/4	NO
B5(18-20)	5/30/03		6/4	NO
B5(20-22)*	5/30/03		6/4	NO
B8(0-2)	5/30/03		6/4	NO
B8(2"-2')	5/30/03		6/4	NO
B8(2-4)	5/30/03		6/4	NO
B8(4-6)	5/30/03		6/4	NO
B8(6-8)	5/30/03		6/4	NO
B8(8-10)	5/30/03		6/4	NO
B8(10-12)*	5/30/03		6/4	NO
B16(0-2)	5/30/03		6/4	NO
B16(2"-2')	5/30/03		6/4	NO
B16(2-4)	5/30/03		6/4	NO
B16(4-6)	5/30/03		6/4	NO
B16(6-8)	5/30/03		6/4	NO
B16(8-10)	5/30/03		6/4	NO
B16(10-12)	5/30/03		6/4	NO
B16(12-14)	5/30/03		6/4	NO
B16(14-16)*	5/30/03		6/4	NO
B18(0-2)	5/30/03		6/4	NO
B18(2-4)*	5/30/03		6/4	NO
B18(2"-2')	5/30/03		6/4	NO
B18(4-6)	5/30/03		6/4	NO

B18(6-8)	5/30/03	6/4	NO
B18(8-10)	5/30/03	6/4	NO
B18(10-12)	5/30/03	6/4	NO
B18(12-14)* **	5/30/03	6/4	NO

* sample run for, TAL Metals and hex Cr Other samples run for Ppmetals and hex CR ** Run as MS/MSD

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

B18(12-14), B16(2-4)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

B16(2-4) 3 RPDs out Ca, Pb, Zn all RPDs for B18(12-14) were within limits

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

B18(12-14), b16(2-4)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes Sb slightly out in B18(12-14), post digest spike ok, B16(2-4) 2 metals out post digest spike ok.

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of ± w 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B0985 – 7 soils

samples run for PCB, RCRA metals and hex chrom, sample MW1(10-12) run for VOA, SVOA,PCB , TAL metals and hex chrom also MW-1(2”-2’) run for TAL metals

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
MW1(0-2)	5/31/03	6/13	6/19-7/10	No
MW-1(2"-2')	5/31/03	6/13	6/19-7/10	No
MW-1(2-4)	5/31/03	6/13	6/19-7/10	No
MW-1(4-6)	5/31/03	6/13	6/19-7/10	No
MW-1(6-8)	5/31/03	6/13	6/19-7/10	No
MW-1(8-10)	5/31/03	6/13	6/19-7/10	No
MW-1(10-12)*	5/31/03	6/11, 6/13	6/3, 6/25, 6/19-7/10	No

* RUN FOR VOA,SVOA, PCB TAL METALS AND MS/MSD

OTHERS RUN FOR PCB, PP METALS

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F6930	YES	INITIAL
2. V2F7000A	YES	SAMPLES
3.		
4.		
5. S3C4347	YES	INITIAL
6. S3C4355	YES	SAMPLES
7.		
8.		
9.		
10.		
11.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 5/29, 6/25

A. Standard Data Files

Standard 1 ID:	V2F6932, S3C4350	Conc:	5, 10
Standard 2 ID:	V2F6935, S3C4348	Conc:	20, 50
Standard 3 ID:	V2F6931, S3C4352	Conc:	50, 80
Standard 4 ID:	V2F6934, S3C4351	Conc:	100, 120
Standard 5 ID:	V2F6933, S3C4349	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 7/30/03

Fraction: VOA, SVOA

Date of Calibration: 5/29, 6/25

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 5/29, 6/25

Date of Continuing Calibration: 6/3, 6/25 File ID: V2F7001, S3C4356

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration
(list associated samples)

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments

List the samples associated with this method blank.

VOA,SVOA and PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

For SVOA analysis protocol allows 1 surrogate recovery per fraction to be outside QC limits as long as it is >10%.

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: MW1(10-12) Matrix: SOIL

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
MW1(0-2)	5/31/03		6/10-6/11	NO
MW-1(2"-2')*	5/31/03		6/10-6/11	NO
MW-1(2-4)	5/31/03		6/10-6/11	NO
MW-1(4-6)	5/31/03		6/10-6/11	NO
MW-1(6-8)	5/31/03		6/10-6/11	NO
MW-1(8-10)	5/31/03		6/10-6/11	NO
MW-110-12)*	5/31/03		6/10-6/11	NO

* TAL
METALS,
OTHERS PP
METALS

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

MW1(10-12)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

2 analytes had RPD out of limits

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

MW1(10-12)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes Sb HAD %R 69%. Post digest spike ok

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of ± w 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B0987 – 35 soils

shallow samples run for PCB, RCRA metals and hex chrom, deeper samples run for VOA, SVOA, TAL metals and hex chrom

VOA run 6/5-6/13

SVOA ext 6/13 re-extract of b7(12-14) on 6/30, run 6/23-7/1

PCB extracted 6/13 run 6/20-7/17

Sample b7(12-14) had the SVOA portion re-extracted out of hold due to all surrogate recoveries being out of limits in the initial extract, data from the re-extract is considered the best set.

Sample B4(10-12) was mis-labeled in the field as B4(12-14)

Several of the soil samples (b7(6-8), B7(8-10), B7(10-12), B7(12-14), B7(16-18) were analyzed at medium level for volatile analysis

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B4(8-10)	6/3/03	6/13	6/5-7/17	no
B4(10-12)*	6/3/03	6/13	6/5-7/17	no
B3(12-14)*	6/3/03	6/13	6/5-7/17	no
B7(0-2)	6/3/03	6/13	6/5-7/17	no
B7(2"-2')	6/3/03	6/13	6/5-7/17	no
B7(2-4)*)	6/3/03	6/13	6/5-7/17	no
B7(4-6)	6/3/03	6/13	6/5-7/17	no
B7(6-8))*	6/3/03	6/13	6/5-7/17	no
B7(8-10)* **	6/3/03	6/13	6/5-7/17	no
B7(10-12)*	6/3/03	6/13	6/5-7/17	no
B7(12-14)*	6/3/03	6/13	6/5-7/17	no
B7(14-16)	6/3/03	6/13	6/5-7/17	no
B7(16-18)*	6/3/03	6/13	6/5-7/17	no
B7(18-20)	6/3/03	6/13	6/5-7/17	no
B7(20-22)	6/3/03	6/13	6/5-7/17	no
B7(22-24)*	6/3/03	6/13	6/5-7/17	no
B21(0-2)	6/3/03	6/13	6/5-7/17	no
B21(2"-2')	6/3/03	6/13	6/5-7/17	no
B21(2-4)	6/3/03	6/13	6/5-7/17	no
B21(4-6)	6/3/03	6/13	6/5-7/17	no
B21(6-8)	6/3/03	6/13	6/5-7/17	no
B21(8-10)	6/3/03	6/13	6/5-7/17	no
B21(10-12)*	6/3/03	6/13	6/5-7/17	no
B15(0-2)	6/3/03	6/13	6/5-7/17	no
B15(2-4)	6/3/03	6/13	6/5-7/17	no

B15(2”-2’)	6/3/03	6/13	6/5-7/17	no
B15(4-6)	6/3/03	6/13	6/5-7/17	no
B15(6-8)	6/3/03	6/13	6/5-7/17	no
B15(8-10)	6/3/03	6/13	6/5-7/17	no
B15(10-12)*	6/3/03	6/13	6/5-7/17	no
B10(0-2)	6/3/03	6/13	6/5-7/17	no
B10(2”-2’)	6/3/03	6/13	6/5-7/17	no
B10(2-4)	6/3/03	6/13	6/5-7/17	no
B10(4-6)	6/3/03	6/13	6/5-7/17	no
B10(6-8)	6/3/03	6/13	6/5-7/17	no
B10(10-12)* **	6/3/03	6/13	6/5-7/17	no
B10(8-10)	6/3/03	6/13	6/5-7/17	no
* sample run for VOA, SVOA, PCB, TAL Metals and hex Cr	Other samples run for PCB, Ppmetals and hex CR	** Run as MS/MSD		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F7040	YES	INITIAL
2. V2F7070	YES	SAMPLES
3. V2F7130	YES	INITIAL
4. V2F7140	YES	SAMPLES
5. V6C7300	YES	INITIAL-MEDIUM LEVEL
6. V6C7380	YES	SAMPLES- MED
7. V6C7410	YES	SAMPLES - MED
8.		
9. S1D6435	YES	INITIAL
10. S1D6530	YES	SAMPLES
11. S1D6575	YES	INITIAL
12. S1D6538	YES	SAMPLES
13. S3C4347	YES	INITIAL
14. S3C4470	YES	RE-EXTRACT
15. S3C4492	YES	DILUTION
16.		
17.		
18.		
19.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 6/4,6/8, 6/10, 6/20, 6/25, 6/25

A. Standard Data Files

Standard 1 ID:	V2F7046, V2F7137, V6C7302, S1D6438, S1D6578, S3C4350	Conc:	5, 10
Standard 2 ID:	V2F7045, V2F7134, V6C7305, S1D6437, S1D6576, S3C4348	Conc:	20, 50
Standard 3 ID:	V2F7041, V2F7131, V6C7301, S1D6441, S1D6580, S3C4352	Conc:	50, 80
Standard 4 ID:	V2F7044, V2F7133, V6C7304, S1D6442, S1D6579, S3C4351	Conc:	100, 120
Standard 5 ID:	V2F7043, V2F7132, V6C7303, S1D6436, S1D6577, S3C4349	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/1/03

Fraction: VOA, SVOA

Date of Calibration: 6/4, 6/8, 6/10, 6/20, 6/25, 6/25

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 6/4,6/8, 6/10, 6/20, 6/25, 6/25

Date of Continuing Calibration: 6/5, 6/8, 6/12, 6/13, 6/25, 6/30, 7/1

File ID: V2F7071, V2F7141, V6C7381, V6C7411, S1D6531, S1D6584 S3C4471, S3C4494

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration
(list associated samples)

ok

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes – voa, No-Svoa

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments
B7(16-18)	CRY		Sample not reanalyzed
B7(2-4)	PRY		Sample not reanalyzed
B7(6-8)	CRY, PRY		Sample not reanalyzed

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
Methylene chloride was detected in VBLK2I, VBLK2L	2 ppb, 2 ppb,		MeCl2 results for all associated samples have been qualified as non-detect

List the samples associated with this method blank.

PCB blanks were clean

SVOA blank clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA, PCB

For SVOA fraction protocol allows 1 recovery per fraction to be outside QC limits as long as it is >10%.

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B10(10-12), B7(8-10) – med level Matrix: SOIL

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

SVOA 2 of 120 spike recoveries were slightly below limits but all RPD's were in limits so no action required, for B7(8-10) 16 of 120 spike recoveries and 4 of 60 RPDs were outside QC limits

VOA several spike recoveries were outside limits but all RPD ok, no action required

PCB recoveries were within limits for B10(10-12), BUT rpdS OUT. For B7(8-10) all recoveries were out but RPDs were within limits.

Blank spikes were run for all fractions with recoveries within limits

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
B4(8-10)	6/3/03		6/6	NO
B4(10-12)*	6/3/03		6/6	NO
B3(12-14)*	6/3/03		6/6	NO
B7(0-2)	6/3/03		6/6	NO
B7(2"-2')	6/3/03		6/6	NO
B7(2-4)*)	6/3/03		6/6	NO
B7(4-6)	6/3/03		6/6	NO
B7(6-8))*	6/3/03		6/6	NO
B7(8-10)*	6/3/03		6/6	NO
B7(10-12)*	6/3/03		6/6	NO
B7(12-14)*	6/3/03		6/6	NO
B7(14-16)	6/3/03		6/6	NO
B7(16-18)*	6/3/03		6/6	NO
B7(18-20)	6/3/03		6/6	NO
B7(20-22)	6/3/03		6/6	NO
B7(22-24)*	6/3/03		6/6	NO
B21(0-2)	6/3/03		6/6	NO
B21(2"-2')	6/3/03		6/6	NO
B21(2-4)	6/3/03		6/6	NO
B21(4-6)	6/3/03		6/6	NO
B21(6-8)	6/3/03		6/6	NO
B21(8-10)	6/3/03		6/6	NO
B21(10-12)*	6/3/03		6/6	NO
B15(0-2)	6/3/03		6/6	NO
B15(2-4)	6/3/03		6/6	NO
B15(2"-2')	6/3/03		6/6	NO
B15(4-6)	6/3/03		6/6	NO

B15(6-8)	6/3/03	6/6	NO
B15(8-10)	6/3/03	6/6	NO
B15(10-12)*	6/3/03	6/6	NO
B10(0-2)	6/3/03	6/6	NO
B10(2”-2’)	6/3/03	6/6	NO
B10(2-4)	6/3/03	6/6	NO
B10(4-6)	6/3/03	6/6	NO
B10(6-8)	6/3/03	6/6	NO
B10(10-12)*	6/3/03	6/6	NO
B10(8-10)	6/3/03	6/6	NO

* sample run for TAL Metals and hex Cr

Other samples run for Ppmetals and hex CR

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

B10(10-12), B7(8-10)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

B10(10-12) 5 RPDs out . B7(8-10) 4 ANALYTES WERE OUTSIDE LIMITS

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

B10(10-12), B7(8-10)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes B10(10-12) all recoveries ok, B7(8-10) Sb and Pb outside limits – post digest spike run Pb ok Sb had a %R of 4.1%

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of ± w 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B0996 – 37 soils

shallow samples run for PCB, RCRA metals and hex chrom, deeper samples run for VOA, SVOA, TAL metals and hex chrom

Voa run 6/8-6/13 holding times ok

Svoa extracted 6/14 holding time ok

Pcb extracted 6/14, 6/16 holding time within 14 days for SW-846

VOA sample B19(8-10) was not reanalyzed at a secondary dilution for acetone, result qualified as estimated.

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B20(8-10)	6/4/03	6/14, 6/16	6/8-6/13	No
B20(10-12)	6/4/03	6/14, 6/16	6/8-6/13	No
B2012-14)*	6/4/03	6/14, 6/16	6/8-6/13	No
B20(14-16)	6/4/03	6/14, 6/16	6/8-6/13	No
B20(16-18)	6/4/03	6/14, 6/16	6/8-6/13	No
B20(18-20)	6/4/03	6/14, 6/16	6/8-6/13	No
B20(22.5-24)	6/4/03	6/14, 6/16	6/8-6/13	No
B20(24-26)	6/4/03	6/14, 6/16	6/8-6/13	No
B20(6-8)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(28-30)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(8-10)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(10-12)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(12-14)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(16-18)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(18-20)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(22-24)	6/4/03	6/14, 6/16	6/8-6/13	No
B19 (24-26)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(26-27)	6/4/03	6/14, 6/16	6/8-6/13	No
B19(27-28)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(22-24)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(24-26)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(0-2)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(22)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(2-4)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(4-6)	6/4/03	6/14, 6/16	6/8-6/13	No

B17(6-8)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(8-10)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(10-12)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(12-14)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(14-16)*	6/4/03	6/14, 6/16	6/8-6/13	No
B17(16-18)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(18-20)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(20-22)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(30-32)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(32-34)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(34-36)	6/4/03	6/14, 6/16	6/8-6/13	No
B17(28-30)	6/4/03	6/14, 6/16	6/8-6/13	No

*MS/MSD

*Voa, SVOA PCB Tal metals, hex cr, others PCB, PP metals and Hex cr

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F7130	YES	INITIAL
2. V2F7140	YES	SAMPLES
3. V2F7170	YES	SAMPLES
4. V2F7230	YES	SAMPLES
5. V2F7260A	YES	SAMPLES
6. V2F7290	YES	SAMPLES
7.		
8.		
9. S1D6435	YES	INITIAL
10. S1D6554	YES	SAMPLES
11. S1D6575	YES	INITIAL
12. S1D6606	YES	SAMPLES
13. S1D6657	YES	INITIAL
14. S1D6665	YES	SAMPLES
15.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 6/8/03, 6/20, 6/25, 6/28

A. Standard Data Files

Standard 1 ID:	V2F7137, S1D6438, S1D6578, S1D6660	Conc:	5, 10
Standard 2 ID:	V2F7134, S1D6437, S1D6576, S1D6658	Conc:	20, 50
Standard 3 ID:	V2F7131, S1D6441, S1D6580, S1D6662	Conc:	50, 80
Standard 4 ID:	V2F7133, S1D6442, S1D6579, S1D6663	Conc:	100, 120
Standard 5 ID:	V2F7132, S1D6436, S1D6577, S1D6659	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 7/29/03

Fraction: VOA, SVOA

Date of Calibration: 6/8/03, 6/20, 6/25, 6/28

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 6/8/03, 6/20, 6/25, 6/28

Date of Continuing Calibration: 6/8, 6/9, 6/11, 6/12, 6/13,6/24, 6/26, 6/30

File ID: V2F7141, V2F7171, V2F7231A, V2F7261, V2F7292 S1D6555, S1D6607, S1D6666

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration
(list associated samples)

ok

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes NO*

If No, please note below

Several samples had area counts outside of QC limits but samples were reanalyzed or run at secondary dilutions with similar results, no further action was required

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
Methylene chloride was detected in all VOA method blanks	1-4 ppb		MeCl2 results for all associated samples have been qualified as non-detect
Bis-2ethylhexyl phthalate	340 ppb		All concentrations less than 3400 have been qualified as non-detect

List the samples associated with this method blank.

PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA, PCB

For SVOA analysis protocol allows 1 surrogate recovery per fraction to be outside QC limits as long as it is >10%.

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments
B19(8-10)	DCE	136	Sample rerun with similar results

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B17 (14-16), B20 (12-14) Matrix: SOIL

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

SVOA several recoveries were slightly below limits but all RPD's were in limits so no action, qualification of the data is required

VOA several recoveries in MSD above limits but RPD ok, no action required

PCB recoveries were high in both MS/MSD but RPD ok

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
Same as organic list	6/12/03		6/14-18	NO

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

B17(14-16), B20(12-14)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

B17(14-16), B20(12-14

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes: 6 metals had RPD out of limits Sb, Cr, Cu in B17(14-16) Cd and Cr out in B20(12-14) post digest spikes were run and recoveries were within limits.

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of ± w 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B1033 – 14 soils

12 samples run for PCB, RCRA metals and hex chrom, 2 samples run for VOA, SVOA,PCB , TAL metals and hex chrom

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
MW2(0-2)	6/6/03	6/17	6/25	NO
MW2(2"-2')	6/6/03	6/17	6/25	
MW2(2-4)	6/6/03	6/17	6/25	
MW2(4-6)	6/6/03	6/17	6/25	
MW2(6-8)	6/6/03	6/17	6/25	
MW2(8-10)	6/6/03	6/17	6/25	
MW2(10-12)**	6/6/03	6/17	6/13, 6/27, 6/25	
MW3(0-2)	6/6/03	6/17	6/25	
MW3(2"-2')	6/6/03	6/17	6/25	
MW3(2-4)	6/6/03	6/17	6/25	
MW3(6-8)	6/6/03	6/17	6/25	
MW3(8-10)	6/6/03	6/17	6/25	
MW3(10-12)*	6/6/03	6/17	6/12, 6/26, 6/25	
MW3(4-6)	6/6/03	6/17	6/25	

* RUN FOR VOA,SVOA, PCB TALMETALS

OTHERS RUN FOR PCB, PP METALS

** RUN AS MS/MSD

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F7130	YES	INITIAL
2. V2F7260A	YES	SAMPLES
3. V2F7290	YES	SAMPLES
4.		
5. S3C4347	YES	INITIAL
6. S3C4380	YES	SAMPLES
7. S3C4410	YES	BLANK
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 6/8, 6/25

A. Standard Data Files

Standard 1 ID:	V2F7137, S3C4350	Conc:	5, 10
Standard 2 ID:	V2F7134, S3C4348	Conc:	20, 50
Standard 3 ID:	V2F7131, S3C4352	Conc:	50, 80
Standard 4 ID:	V2F7133, S3C4351	Conc:	100, 120
Standard 5 ID:	V2F7132, S3C4349	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/4/03

Fraction: VOA, SVOA

Date of Calibration: 6/8, 6/25

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 6/8, 6/25

Date of Continuing Calibration: 6/12, 6/13, 6/26, 6/27 File ID: V2F7261, V2F7262 S3C4381, S3C4411

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration (list associated samples)

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/4/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
Methylene chloride was detected in the blanks	4 ppb, 3 ppb respectively		MeCl2 results both samples have been qualified as non-detect

List the samples associated with this method blank.

SVOA and PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA, PCB

X. Surrogate Recovery Summary

PCB surrogate recovery limits are advisory only

Were all surrogate recoveries within the contract limits ?

Yes

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: MW2(10-12) Matrix: soil

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes*

If No, please note below.

VOA all recoveries and RPDs were within QC limits

SVOA 11 of 120 recoveries were outside limits but all RPDs were within QC limits

PCB all recoverues and RPDs were within limits

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
MW2(0-2)	6/6/03		6/9-6/14	NO
MW2(2"-2')	6/6/03		6/9-6/14	NO
MW2(2-4)	6/6/03		6/9-6/14	NO
MW2(4-6)	6/6/03		6/9-6/14	NO
MW2(6-8)	6/6/03		6/9-6/14	NO
MW2(8-10)	6/6/03		6/9-6/14	NO
MW2(10-12)**	6/6/03		6/9-6/14	NO
MW3(0-2)	6/6/03		6/9-6/14	NO
MW3(2"-2')	6/6/03		6/9-6/14	NO
MW3(2-4)	6/6/03		6/9-6/14	NO
MW3(6-8)	6/6/03		6/9-6/14	NO
MW3(8-10)	6/6/03		6/9-6/14	NO
MW3(10-12)*	6/6/03		6/9-6/14	NO
MW3(4-6)	6/6/03		6/9-6/14	NO

* RUN FOR TALMETALS OTHERS RUN FOR PP METALS

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Associated Samples: As listed on cover sheet

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

MW2(10-12)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

8 analytes had RPD out of limits

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

MW2(10-12)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   No

   If "No", note analytes Antimony 67.1% recovery, post digest spike run recovery ok

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of +=w 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B1057 – 30 soils

shallow samples run for PCB, RCRA metals and hex chrom, Deeper samples run for VOA, SVOA,PCB , TAL metals and hex chrom

SAMPLE Mw3(2-4) was originally sampled on 6/5 but due to an oversight not requested for VOA and SVOA this fraction was resampled on 6/10

Sample B23(0-2) had %solids 54

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B23(0-2)	6/11/03	6/20	6/28-7/3	NO
B23(2'-2')	6/11/03	6/20	6/28-7/3	NO
B23(2-4)	6/11/03	6/20	6/28-7/3	NO
B23(4-6)	6/11/03	6/20	6/28-7/3	NO
B23(6-8)	6/11/03	6/20	6/28-7/3	NO
B23(8-10)	6/11/03	6/20	6/28-7/3	NO
B23(10-12)	6/11/03	6/20	6/28-7/3	NO
MW3(2-4)*	6/11/03	6/18, 6/20	6/15, 6/24, 6/28-7/3	NO
B24(0-2)	6/11/03	6/20	6/28-7/3	NO
B24(2'-2')	6/11/03	6/20	6/28-7/3	NO
B24(2-4)	6/11/03	6/20	6/28-7/3	NO
B24(4-6)*	6/11/03	6/18, 6/20	6/15, 6/24, 6/28-7/3	NO
B24(6-8)	6/11/03	6/20	6/28-7/3	NO
B24(8-10)	6/11/03	6/20	6/28-7/3	NO
B24(10-12)*	6/11/03	6/18, 6/20	6/15, 6/21, 6/28-7/3	NO
B09(8-10)*	6/11/03	6/18, 6/20	6/15, 6/24, 6/28-7/3	NO
B9(10-12)	6/11/03	6/20	6/28-7/3	NO
B9(12-14)	6/11/03	6/20	6/28-7/3	NO
B9(14-16)	6/11/03	6/20	6/28-7/3	NO
B9(16-18)	6/11/03	6/20	6/28-7/3	NO
B9(20-22)	6/11/03	6/20	6/28-7/3	NO
B9(22-24)	6/11/03	6/18, 6/20	6/15, 6/21, 6/28-7/3	NO

B9(24-26)*	6/11/03	6/20	6/28-7/3	NO
B25(0-2)	6/11/03	6/20	6/28-7/3	NO
B25(2'-2')	6/11/03	6/20	6/28-7/3	NO
B25(2-4)	6/11/03	6/20	6/28-7/3	NO
B25(4-6)	6/11/03	6/20	6/28-7/3	NO
B25(6-8)	6/11/03	6/20	6/28-7/3	NO
B25(8-10)	6/11/03	6/20	6/28-7/3	NO
B25(10-12)*	6/11/03	6/18, 6/20	6/15, 6/21, 6/28-7/3	NO

* RUN FOR VOA,SVOA, PCB TALMETALS

OTHERS RUN FOR PCB, PP METALS

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V5E7440A	YES	INITIAL AND SAMPLES
2.		
3. S1D6435	YES	INITIAL
4. S1D6470	YES	SAMPLES
5. S1D6554	YES	SAMPLES
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 6/15, 6/20

A. Standard Data Files

Standard 1 ID:	V5E7447, S1D6438	Conc:	5, 10
Standard 2 ID:	V5E7446, S1D6437	Conc:	20, 50
Standard 3 ID:	V5E7441, S1D6441	Conc:	50, 80
Standard 4 ID:	V5E7443, S1D6442	Conc:	100, 120
Standard 5 ID:	V5E7442, S1D6436	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/1/03

Fraction: VOA, SVOA

Date of Calibration: 6/15, 6/20

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 6/15, 6/20

Date of Continuing Calibration: 6/15, 6/21, 6/24 File ID: V5E7441, S1D6471, S1D6555

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments:

B. Overall assessment of Continuing Calibration (list associated samples)

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/1/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
Methylene chloride and acetone were detected in the blank	1 ppb, 2 ppb		MeCl2 results of 10 ppb or less and acetone results of 20 ppb or less for all associated samples have been qualified as non-detect

List the samples associated with this method blank.

SVOA and PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA, PCB

For SVOA analysis protocol allows 1 surrogate recovery per fraction to be outside QC limits as long as it is >10%.

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Fraction: VOA, SVOA,PCB

Site specific QC not provided in this data package

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: _____ Matrix: _____

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

Blank spike data was provided and met QC requirements

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
B23(0-2)	6/11/03		6/24-7/16	NO
B23(2'-2')	6/11/03		6/24-7/16	NO
B23(2-4)	6/11/03		6/24-7/16	NO
B23(4-6)	6/11/03		6/24-7/16	NO
B23(6-8)	6/11/03		6/24-7/16	NO
B23(8-10)	6/11/03		6/24-7/16	NO
B23(10-12)	6/11/03		6/24-7/16	NO
MW3(2-4)*	6/11/03		6/24-7/16	NO
B24(0-2)	6/11/03		6/24-7/16	NO
B24(2'-2')	6/11/03		6/24-7/16	NO
B24(2-4)	6/11/03		6/24-7/16	NO
B24(4-6)*	6/11/03		6/24-7/16	NO
B24(6-8)	6/11/03		6/24-7/16	NO
B24(8-10)	6/11/03		6/24-7/16	NO
B24(10-12)*	6/11/03		6/24-7/16	NO
B09(8-10)*	6/11/03		6/24-7/16	NO
B9(10-12)	6/11/03		6/24-7/16	NO
B9(12-14)	6/11/03		6/24-7/16	NO
B9(14-16)	6/11/03		6/24-7/16	NO
B9(16-18)	6/11/03		6/24-7/16	NO
B9(20-22)	6/11/03		6/24-7/16	NO
B9(22-24)	6/11/03		6/24-7/16	NO
B9(24-26)*	6/11/03		6/24-7/16	NO
B25(0-2)	6/11/03		6/24-7/16	NO
B25(2'-2')	6/11/03		6/24-7/16	NO
B25(2-4)	6/11/03		6/24-7/16	NO

DATA VALIDATION – METALS

B25(4-6)	6/11/03	6/24-7/16	NO
B25(6-8)	6/11/03	6/24-7/16	NO
B25(8-10)	6/11/03	6/24-7/16	NO
B25(10-12)*	6/11/03	6/24-7/16	NO
* RUN FOR VOA,SVOA, PCB TALMETALS	OTHERS RUN FOR PCB, PP METALS		

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

B24(6-8), B9(20-22)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

2 analytes had RPD out of limits

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

B24(6-8), B9(20-22)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of +/- 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/1/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B1051 – 31 soils

Several samples run for PCB, RCRA metals and hex chrom, other samples run for VOA, SVOA,PCB , TAL metals and hex chrom

VOA run 6/13-6/19, SVOA extracted 6/17 run 6/27, 7/7, PCB extracted 6/19 & 6/20 run 6/26

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B12(8-10)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(10-12)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(12-14)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(14-16)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(16-18)*				
B12(18-20)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(20-22)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(22-24)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(25-26)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B12(26-28)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(4-6)*				
B22(6-8)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(8-10)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(10-12)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(12-14)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(14-16)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(16-18)*				

DATA VALIDATION – ORGANICS

B22(18-20)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(20-22)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(22-24)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(25-26)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B22(28-30)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(8-10)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(10-12)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(12-14)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(14-16)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(16-18)				
B13(18-20)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(20-22)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(22-24)	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO
B13(24-26)*	6/10	6/17, 6/19, 6/20	6/13-6/19, 6/27, 7/7, 6/26	NO

* RUN FOR VOA,SVOA, PCB TALMETALS	OTHERS RUN FOR PCB, PP METALS

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F7130	YES	Initial
2. V2F7290	YES	SAMPLES
3. V2F7320	YES	SAMPLES
4. V2F7350	YES	SAMPLES
5. V2F7380	YES	INITIAL
6. V2F7390	YES	SAMPLES
7. V2F7440	RES	RERUN
8. V6C7300	YES	INITIAL – MED LEVEL
9. V6C7500	YES	SAMPLE- MED. LEVEL
10.		
11. S3C4347	YES	INITIAL
12. S3C4380	YES	SAMPLES
13. S3C4410	YES	SAMPLES
14. S3C4492	YES	SAMPLE
15. S4A1323	YES	INITIAL
16. S4A1331	YES	RERUN
17.		
18.		
19.		
20.		
21.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 6/8, 6/17, 6/10, 6/25, 7/7

A. Standard Data Files

Standard 1 ID:	V2F7137, V2F7387, V6C7302, S3C4350, S4A1326	Conc:	5, 10
Standard 2 ID:	V2F7134, V2F7386, V6C7305, S3C4348, S4A1324	Conc:	20, 50
Standard 3 ID:	V2F7131, V2F7384, V6C7301, S3C4352, S4A1328	Conc:	50, 80
Standard 4 ID:	V2F7133, V2F7383, V6C7304, S3C4351, S4A1329	Conc:	100, 120
Standard 5 ID:	V2F7132, V2F7382, V6C7303, S3C4349, S4A1325	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/4/03

Fraction: VOA, SVOA

Date of Calibration: 6/8, 6/17, 6/10, 6/25, 7/7

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 6/8, 6/17, 6/10, 6/25, 7/7

Date of Continuing Calibration: 6/13, 6/15, 6/16, 6/17, 6/19, 6/21, 6/26, 6/27, 7/1, 7/7

File ID: V2F7292, V2F7321, V2F7351, V2F7391, V2F7441, V6C7501, S3C4381, S3C4411, S3C4494, S4A1332

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Protocol allows up to 4 %D to be above 25% if < 40%

B. Overall assessment of Continuing Calibration
(list associated samples)

ok

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 8/4/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Several SVOA samples had area counts outside of QC limits samples rerun with similar results.

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments
B12(20-22)	DCB		Sample rerun with similar results
B22(4-6)	DCB		Sample rerun with similar results
B22(6-8)	DCB		Sample rerun with similar results
B22(8-10)	DCB		Sample rerun with similar results

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: File ID:

Compound	Concentration	< CROL	Comments
MeCl2			Results qualified as ND in all associated samples

List the samples associated with this method blank.

SVOA and PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA, PCB

For SVOA analysis protocol allows 1 surrogate recovery per fraction to be outside QC limits as long as it is >10%.

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes*

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments
B22(8-10)	Dibromofluoromethane	135	Sample rerun with similar results
B22(14-16)	Dibromofluoromethane	131	Sample rerun with similar results
B22(16-18)	DCE	134	Sample rerun with similar results
B13(18-20)	Dibromofluromethane	132	Sample run as MS/MSD
B22(14-16)	All base surr. Recoveries were out		Sample rerun with similar results.

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B13(18-20) Matrix: Soil

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

VOA fraction had 32 of 96 recoveries outside limits and only 1 of 48 RPDs out.

SVOA fraction had 29 of 120 recoveries outside limits and only 11 of 60 RPDs

Blank spikes were run for each fraction and recoveries were within limits.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

I. Holding times

Sample		Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
B12(8-10)	6/10			6/23-6/30	NO
B12(10-12)	6/10			6/23-6/30	NO
B12(12-14)	6/10			6/23-6/30	NO
B12(14-16)	6/10			6/23-6/30	NO
B12(16-18)*					
B12(18-20)	6/10			6/23-6/30	NO
B12(20-22)*	6/10			6/23-6/30	NO
B12(22-24)	6/10			6/23-6/30	NO
B12(25-26)	6/10			6/23-6/30	NO
B12(26-28)*	6/10			6/23-6/30	NO
B22(4-6)*					
B22(6-8)*	6/10			6/23-6/30	NO
B22(8-10)*	6/10			6/23-6/30	NO
B22(10-12)*	6/10			6/23-6/30	NO
B22(12-14)*	6/10			6/23-6/30	NO
B22(14-16)*	6/10			6/23-6/30	NO
B22(16-18)*					
B22(18-20)	6/10			6/23-6/30	NO
B22(20-22)	6/10			6/23-6/30	NO
B22(22-24)	6/10			6/23-6/30	NO
B22(25-26)	6/10			6/23-6/30	NO
B22(28-30)*	6/10			6/23-6/30	NO
B13(8-10)	6/10			6/23-6/30	NO
B13(10-12)	6/10			6/23-6/30	NO
B13(12-14)	6/10			6/23-6/30	NO
B13(14-16)	6/10			6/23-6/30	NO
B13(16-18)					

DATA VALIDATION – METALS

B13(18-20)*	6/10	6/23-6/30	NO
B13(20-22)	6/10	6/23-6/30	NO
B13(22-24)	6/10	6/23-6/30	NO
B13(24-26)*	6/10	**6/23-6/30**	**NO**

* RUN FOR TALMETALS
OTHERS RUN FOR PP METALS

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

B22(18-20), B13(18-20)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

4 RPD outside limits for B22(18-20)

3 RPD outside limits for B13(18-20)

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

B22(18-20), B13(18-20)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes: Sb recovery 58.3%, post digest run recovery ok. In B22(18-20), Sb and Cu out in B13(18-20) post digest run all recoveries within limits

Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of +/- 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 8/4/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B1067

2 shallow samples run for PCB, RCRA metals and hex chrom, (12-14) sample run for VOA, SVOA, TAL metals and hex chrom

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B14 (8-10)	6/12	6/20	7/1	Pcb only
B14 (10-12)	6/12	6/20	7/1	Pcb only
B-14 (12-14)	6/12	6/18, 6/20	6/15, 6/21, 7/1	

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F7130	YES	INITIAL
2. V2F7320	YES	SAMPLES
3.		
4. S1D6435	YES	INITIAL
5. S1D6470	YES	SAMPLES
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 6/8/03, 6/20

A. Standard Data Files

Standard 1 ID:	V2F7137, S1D6438	Conc:	5, 10
Standard 2 ID:	V2F7134, S1D6437	Conc:	20, 50
Standard 3 ID:	V2F7131, S1D6441	Conc:	50, 80
Standard 4 ID:	V2F7133, S1D6442	Conc:	100, 120
Standard 5 ID:	V2F7132, S1D6436	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 7/29/03

Fraction: VOA, SVOA

Date of Calibration: 6/8/03, 6/20

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 6/8/03, 6/20

Date of Continuing Calibration: 6/15, 6/21 File ID: V2F7321, S1D6471

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration
(list associated samples)

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: 6/15 File ID: VBLK2R

Compound	Concentration	< CROL	Comments
Methylene chloride	1		Result for sample B14(12-14) qualified as non-detect

List the samples associated with this method blank.

All SVOA, PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA, PCB

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B14 (12-14) Matrix: SOIL

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

SVOA several recoveries were slightly below limits but all RPD's were in limits so no action, qualification of the data is required

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
B14(8-10)	6/12/03		6/12-6/14	NO
B14(10-12)	6/12		6/12-6/14	NO
B14(12-14)	6/12		6/12-6/14	NO

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

B14(12-14)

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   No

   Comments:

6 metals had RPD out of limits AL, Ca, Cu, Fe, Mn, K

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

B14(12-14)

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of ± w 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/29/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: SDG B1098

3 GROUNDWATER samples and 1 FB run for VOA, SVOA, PCB, TAL metals and hex chrom

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
TB-1	6/20		6/24	NO
BCPMW-3	6/20	6/23	6/25, 6/27, 6/29	
BCPMW-2	6/20	6/23	6/25, 6/27, 6/29	
BCPMW-1	6/20	6/23	6/25, 6/27, 6/29	
FB-1	6/20	6/23	6/24, 6/27, 6/29	

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V6C7300	YES	INITIAL
2. V6C7520A	YES	SAMPLES
3. V6C7550	YES	SAMPLES
4. V6C7620	YES	INITIAL AND SAMPLES
5. S1D6575	YES	INITIAL
6. S1D6624	YES	SAMPLES
7.		
8.		
9.		
10.		
11.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 6/10/03, 6/27, 6/25

A. Standard Data Files

Standard 1 ID:	V6C7302, V6C7622, S1D6578	Conc:	5, 10
Standard 2 ID:	V6C7305, V6C7625, S1D6576	Conc:	20, 50
Standard 3 ID:	V6C7301, V6C7626, S1D6580	Conc:	50, 80
Standard 4 ID:	V6C7304, V6C7624, S1D6579	Conc:	100, 120
Standard 5 ID:	V6C7303, V6C7623, S1D6577	Conc:	200, 160

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments:

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park

Laboratory Name: Mitkem

Reviewer: R. Petrella

Date of Review: 7/30/03

Fraction: VOA, SVOA

Date of Calibration: 6/10/03, 6/27, 6/25

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments:

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

CALIBRATION OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 6/10, 6/27 6/25

Date of Continuing Calibration: 6/24, 6/25, 6/27, 6/27 File ID: V6C7521A, V6C7551, V6C7626, S1D6625

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: Carbon tetrachloride slightly above limits, but less than 40%, no action required

B. Overall assessment of Continuing Calibration
(list associated samples)

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

IX. Blank Summary

Date/Time of Analysis: 6/15 File ID: VBLK2R

Compound	Concentration	< CROL	Comments
Methylene chloride found in the trip blank	5		Compound not found in any of the samples, qualification of the data is not required

List the samples associated with this method blank.

All SVOA, PCB blanks were clean

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA, PCB

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Fraction: VOA, SVOA,PCB

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: BCPMW-2 Matrix: WATER

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
BCPMW-3	6/20		6/26-7/7	NO
BCPMW-2*	6/20		6/26-7/7	NO
BCPMW-1	6/20		6/26-7/7	NO
FB-1	6/20		6/26-7/7	NO

* MS/MSD

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

   Yes

   Comments:

_____

_____

_____

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

3. Were the initial calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

   Yes

   Comments:

_____

_____

_____

2. Were the continuing calibration results within the control limits listed below?

   For tin and mercury: 80-120% of the true value
   For all other metals: 90-110% of the true value

   Yes

   If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

   Yes

2. Were all the analytes below the CRDL in the method blank?

   Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

   Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

   Yes

Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

BCPMW-2

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

   Yes

   Comments:

For sample values >5 times the CRDL, the RPD control limit is ±20%.

For sample values ≤ 5 times the CRDL, the RPD control limit is ±CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "*".

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

BCPMW-2

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

   Yes

   If "No", note analytes

   Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

   Yes

   Comments:

2. Were the serial dilution differences within the contract specified limits of +/- 10%?

   Yes

   Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

   Yes

   Comments:

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

   Yes

   Comments:

5. Were the ICP interference check sample results within the control limit of ± 20% of the mean value?

   Yes

   If "No", not analytes

DATA VALIDATION – METALS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 7/30/03

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

   Yes

   Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

   Yes

   Comments:

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 10/9/03

I. Data Deliverable Requirements

A. Legible	(Yes)	No
B. Paginated	(Yes)	No
C. Arranged in order	(Yes)	No
D. Consistent dates	(Yes)	No
E. Case Narrative	(Yes)	No
F. Chain-of-Custody Record	(Yes)	No
G. Sample Data Complete	(Yes)	No
H. Standard Date Complete	(Yes)	No
I. Raw QC Data Complete	(Yes)	No

Comments: 3 groundwaters - VOA

B1458

MW-2 was rerun at 1:2.5 } due to compound
MW-3 was rerun at 1:25 } concentrations exceeding instrument calibration range

COC - VOC does not state list to report

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 10/9/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
BCPMW-1	9/13/03	NA	9/16 ↓ , 9/18	NO
BCPMW-2	↓	↓	9/16, 9/18	↓
*BCPMW-3			9/16	
TB-1				

*Runs MS/MSD

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: MitKem

Reviewer: R. Petrella Date of Review: 10/9/03

Fraction: VOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V2F8800	yes	initial
2. V2F9010	yes	Samples
3. V2F9070A	yes	dilutions / spikes Dups
4.		
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: Mitkem

Reviewer: RPetrella Date of Review: 10/9/03

Fraction: VOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 9/10/03

A. Standard Data Files

Standard 1 ID: V2F8802 Conc: 5

Standard 2 ID: V2F8806 Conc: 20

Standard 3 ID: V2F8801 Conc: 50

Standard 4 ID: V2F8805 Conc: 100

Standard 5 ID: V2F8804 Conc: 200

B. 1. All SPCC met Criteria ?

(Yes) No

2. Calculate a SPCC average RRF

Comments: OK

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 10/9/03

Fraction: VOA Date of Calibration: 9/10/03

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

(Yes) No

Comments: OK

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

(Yes) No

2. Was the calibration conducted within 12 hours of the tune

(Yes) No

Comments:

D. Overall assessment of the initial calibration:
(list the associated samples)

OK

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 10/9/03

Fraction: VOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 9/10/03

Date of Continuing Calibration: 9/16/03, 9/18/03 File ID: V2F9011 V2F9071

A. 1. All SPCC met criteria ?

(Yes) No

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

(Yes) No

Calculate a CCC % D

Comments: Protocol allows up to 4 %D to be out of <40%
Acetone 26.7, vinyl acetate 20% → cmpds not found in samples

B. Overall assessment of Continuing Calibration
(list associated samples)

OK

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: MitKem

Reviewer: RPetrella Date of Review: 10/9/03

Fraction: VOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

(Yes) No

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 10/9/03

Fraction: VOA

IX. Blank Summary

Date/Time of Analysis: _____ File ID: _____

Compound	Concentration	≤ CROL	Comments
method blank	- clean		
trip blank	- clean		

List the samples associated with this method blank.

_____

_____

_____

_____

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: MitKem

Reviewer: R Petrella Date of Review: 10/9/03

Fraction: VOA

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

(Yes) No

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Community Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 10/9/03

Fraction: VOA

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: BCPMW-3 Matrix: Water

Did the MS/MSD recovery data meet the contract recommended requirements ?

(Yes) * No

If No, please note below.

*4 of 132 recoveries out -
0 of 66 %RPD out.

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R.Petrella Date of Review: 12/15/03

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: B1866 - 3 wells FB, TB
B1858 3 wells FB, TB
Samples analyzed for VOCs only

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R. Petrella Date of Review: 12/15/03

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded?
B30MW-1	11/28/03		12/1/03	No
TB	↓		↓	↓
Field Blank				
B24MW-2				
B24MW-3				
BCPMW-01	11/26/03		12/1/03	No
BCPMW-03	↓		12/2/03	↓
TB			↓	
FB				
BCPMW-02				

DATA VALIDATION – ORGANICS

Site Name: Bikpasz Park Laboratory Name: Mitkem

Reviewer: R Petrilla Date of Review: 12/15/03

Fraction: VOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. V1F8930A	yes	initial
2. V1F8940	yes	samples
3. V1F8000	yes	samples
4. V1F8970	yes	samples
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: RPitrella Date of Review: 12/15/03

Fraction: VOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 12/1/03

A. Standard Data Files

Standard 1 ID:	VIF8932	Conc:	5
Standard 2 ID:	VIF8935	Conc:	20
Standard 3 ID:	VIF8931	Conc:	50
Standard 4 ID:	VIF8934	Conc:	100
Standard 5 ID:	VIF8933	Conc:	200

B. 1. All SPCC met Criteria ?

(Yes) No

2. Calculate a SPCC average RRF

Comments: _____

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: R Petrilla Date of Review: 12/15/03

Fraction: VOA Date of Calibration: 12/1/03

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

(Yes) No

Comments: _____

_____

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

(Yes) No

2. Was the calibration conducted within 12 hours of the tune

(Yes) No

Comments: _____

_____

_____

D. Overall assessment of the initial calibration:
(list the associated samples)

_____

OK

_____

_____

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: MHKem

Reviewer: RPetrella Date of Review: 12/15/03

Fraction: VOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 12/1/03

Date of Continuing Calibration: 12/1/03, 12/3/03 File ID: V1F8941

A. 1. All SPCC met criteria ? 12/2/03 V1F9001 V1F8971

(Yes) No

Calculate a SPCC RRF

Comments: _____

2. All CCC met criteria ?

(Yes) No

Calculate a CCC % D

Comments: Protocol allows up to ± %D to be >20% if <40%.

B. Overall assessment of Continuing Calibration
(list associated samples)

OK

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: RPetrella Date of Review: 12/15/03

Fraction: VOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

(Yes) No

If No, please note below

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: RPetrella Date of Review: 12/15/03

Fraction: VOA

IX. Blank Summary

Date/Time of Analysis: _____ File ID: _____

Compound	Concentration	≤ CROL	Comments

All method blanks clear.

List the samples associated with this method blank.

Field blank collected on 11/26 and 11/25. contained MeCl2 at 3ug/l + 4ug/l result detected in B24MW-2, qualified as ND due to field contamination and BCPMW-01

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: RPetrella Date of Review: 12/15/03

Fraction: VOA

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

(Yes) No

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION – ORGANICS

Site Name: Bethpage Park Laboratory Name: Mitkem

Reviewer: RPetrella Date of Review: 12/15/03

Fraction: VOA

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: B30MW-1 Matrix: Water
BCPMW-03

Did the MS/MSD recovery data meet the contract recommended requirements ?

(Yes) No

If No, please note below.

B30MW1 1 spike recovery out of 136 and 1 RPD out of 68 were outside QC limits - No action required.

Both Blank spikes ~~was~~ run all recoveries were within limits

BCPMW03 - 6 of 136 Spike recoveries + 1 of 68 RPD were outside limits - no action required

APPENDIX D

BORINGS LOGS

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-1
Project Location: Bethpage, NY **Sheet** 1 **of** 1
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/28/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/28/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	1	SS	1.5	0.0	0-0.08'	Gray-dark gray, FILL w/silty fine sand, slight fuel oil-like odor
					0.08-1.5'	Orange-tan, poorly sorted fine-coarse SAND w/trace fine-coarse gravel, poorly sorted fine-medium SAND, slight layering
10-12	2	SS	1.5	0.0	0-1.5'	Orange-tan, poorly sorted fine-coarse SAND w/trace fine-coarse gravel, poorly sorted fine-medium SAND, slight layering

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-2
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/28/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/28/03

Boring Completion Depth: 14 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam
0.17-2	2	SS	1.5	0.0	0-1.5'	Brown-dark brown, FILL w/poorly sorted fine-medium sand, some silt and fine gravel, moist
2-4	3	SS	1.0	0.0	0-1'	Dark brown, FILL w/poorly sorted silty fine-medium sand, lenses of gray clay, plastic, wood fragments, wet
4-6	4	SS	1.67	0.0	0-0.83'	SAME AS ABOVE
					0.83-1.67'	Green/biege, FILL w/silt layers, layers of black silty material w/reddish silt lenses, hard
6-8	5	SS	2.0	0.0	0-2'	Black, FILL w/clayey silt, trace pieces of plastic, aluminum foil and wood, slight fuel oil-like odor, moist-wet

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-2
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/28/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/28/03

Boring Completion Depth: 14 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	0.5	19.0	0-0.25'	Black, FILL w/clayey silt, trace plastic, aluminum foil and plywood, slight fuel oil-like odor, moist-wet
					0.25-0.5'	Gray, FILL w/poorly sorted fine-coarse sand, trace fine-coarse gravel
10-12	7	SS	1.67	2.0	0-0.83'	Black, FILL w/clayey silt, slight fuel oil-like odor, moist-wet
					0.83-1.67'	Orange, poorly sorted fine-coarse SAND, trace fine-coarse gravel, layers of poorly sorted fine-medium sand w/trace gravel
12-14	8	SS	1.67	0.0	0-1.67'	Orange, poorly sorted fine-coarse SAND, trace fine-coarse gravel, layers of poorly sorted fine-medium sand w/trace gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12' and 12-14'.

Dvirka and Bartilucci CONSULTING ENGINEERS
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Project No.: 1965-07 **Boring No.:** B-3
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/28/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 14 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam, some fine-coarse gravel
0.17-2	2	SS	1.67	0.0	0-0.83'	Dark brown/gray, FILL w/poorly sorted fine-coarse sand, little fine-coarse gravel, little silt, piece of rubber
					0.83-1.67'	Brown, FILL w/poorly sorted fine-coarse sand, little silt, trace fine-coarse gravel
2-4	3	SS	1.67	0.0	0-1.67'	Brown, FILL w/poorly sorted fine-coarse sand, little silt, trace fine-coarse gravel
4-6	4	SS	2.0	0.0	0-1'	Dark brown/gray, FILL w/poorly sorted fine-coarse silty sand, trace fine-coarse gravel
					1-2'	Orange, poorly sorted fine-coarse SAND and GRAVEL
6-8	5	SS	2.0	0.0	0-0.33'	Orange, poorly sorted fine-coarse SAND and GRAVEL
					0.33-1.5'	Gray, CLAY, cohesive
					1.5-2'	Orange, poorly sorted fine-coarse SAND, trace fine gravel w/coarse sand layers

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-3
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/28/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 14 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.67	0.0	0-0.83'	Gray/brown, CLAY, trace fine gravel, cohesive
					0.83-1.67'	Orange, poorly sorted fine-medium SAND w/layers of fine sand and fine gravel
10-12	7	SS	0.0	N/A		NO RECOVERY
12-14	8	SS	1.67	0.0	0-1.67'	Orange, poorly sorted fine-medium SAND w/layers of fine sand and fine gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 12-14'.
N/A : Not Available

Dvirka and Bartilucci CONSULTING ENGINEERS
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Project No.: 1965-07 **Boring No.:** B-4
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/28/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam
0.17-2	2	SS	1.67	0.0	0-1.67'	Brown, FILL w/poorly sorted fine-medium sand, trace fine gravel
2-4	3	SS	1.67	0.0	0-0.83'	SAME AS ABOVE, some coal fragments
					0.83-1.67'	Brown-light brown, poorly sorted fine-coarse SAND, trace fine gravel, some orange layers of moderately sorted fine-medium sand
4-6	4	SS	1.67	0.0	0-1.67'	Brown-light brown, poorly sorted fine-coarse SAND, trace fine gravel, some orange layers of moderately sorted fine-medium sand
6-8	5	SS	1.67	0.0	0-1.67'	SAME AS ABOVE

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

Dvirka and Bartilucci CONSULTING ENGINEERS
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Project No.: 1965-07 **Boring No.:** B-4
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/28/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.67	0.0	0-1.67'	Orange/brown, poorly sorted fine-medium SAND w/trace fine-coarse gravel, poorly sorted fine-coarse SAND w/some fine gravel, slight layering
10-12	7	SS	2.0	0.0	0-2'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-5
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 22 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	1	SS	2.0	10.4	0-1.17'	Brown, FILL w/poorly sorted fine-medium sand and fine-coarse gravel
					1.17-2'	Gray/dark gray, FILL w/poorly sorted fine-medium sand and fine-coarse gravel, wet
10-12	2	SS	1.0	0.0	0-1'	Gray/dark gray, FILL w/poorly sorted fine-medium sand and fine-coarse gravel, wet
12-14	3	SS	2.0	84.0	0-0.17'	Gray/dark gray, FILL w/poorly sorted fine-medium sand and fine-coarse gravel, wet
					0.17-1.67'	Black, FILL w/poorly sorted fine-coarse sand, trace fine-coarse gravel, plastic bag, fuel oil-like odor
					1.67-2'	Light gray, FILL w/clay lenses
14-16	4	SS	1.0	30.0	0-1'	Brown/black, FILL w/poorly sorted fine-medium sand and fine-coarse gravel, moderate fuel oil-like odor
16-18	5	SS	1.0	2.0	0-1'	SAME AS ABOVE, w/black plastic bag

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

Dvirka and Bartilucci CONSULTING ENGINEERS
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Project No.: 1965-07 **Boring No.:** B-5
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 22 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
18-20	6	SS	2.0	0.0	0-2'	Brown, poorly sorted fine-coarse SAND and GRAVEL, slight layering, brown-orange layers of poorly sorted fine-medium sand and fine-coarse gravel
20-22	7	SS	2.0	0.0	0-2'	SAME AS ABOVE, w/orange layers of moderately sorted fine sand, trace iron concretion, moist

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 18-20' and 20-22'.

Dvirka and Bartilucci CONSULTING ENGINEERS
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Project No.: 1965-07 **Boring No.:** B-6
Project Location: Bethpage, NY **Sheet** 1 **of** 3
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/27/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/27/03

Boring Completion Depth: 20 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Dark brown, FILL w/silty loam, some fine gravel
0.17-2	2	SS	1.5	0.0	0-0.17'	Dark brown/gray, FILL w/silty fine sand
					0.17-1.5'	Orange, FILL w/poorly sorted fine-coarse sand
2-4	3	SS	1.0	0.0	0-0.25'	Light brown, FILL w/fine sand and silt, trace fine gravel
					0.25-1'	Gray, FILL w/silt and fine sand, slight fuel oil-like odor
4-6	4	SS	1.0	14.0	0-1'	Dark brown/gray, FILL w/fine-medium sand, trace silt and fine gravel, moderate fuel oil-like odor
6-8	5	SS	0.0	N/A		NO RECOVERY

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4' and 4-6'.
N/A : Not Available

Dvirka and Bartilucci CONSULTING ENGINEERS
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Project No.: 1965-07 **Boring No.:** B-6
Project Location: Bethpage, NY **Sheet** 2 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/27/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/27/03

Boring Completion Depth: 20 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	2.0	0.0	0-0.25'	Brown, FILL w/poorly sorted fine sand and silt, moist
					0.25-2'	Dark gray, FILL w/poorly sorted fine-medium sand, little silt, trace fine gravel, moderate fuel oil-like odor, wet
10-12	7	SS	2.0	0.0	0-2'	Gray-brown, FILL w/poorly sorted fine-coarse sand, trace fine gravel, moderate fuel oil-like odor, wet
12-14	8	SS	2.0	11.0	0-2'	SAME AS ABOVE, w/lenses of clay
14-16	9	SS	1.0	0.0	0-0.25'	SAME AS ABOVE, wet
					0.25-1'	Orange/light tan, poorly sorted medium-coarse SAND, some fine-coarse gravel, moist
16-18	10	SS	1.0	0.0	0-1'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-6
Project Location: Bethpage, NY **Sheet** 3 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/27/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/27/03

Boring Completion Depth: 20 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description
18-20	11	SS	1.5	0.0	0-1.5' Orange/light tan, poorly sorted medium-coarse SAND and moderately sorted fine-medium SAND, trace fine-coarse gravel, stratified w/thin orange laminations of silt and fine sand

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 18-20'.

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-7
Project Location: Bethpage, NY **Sheet** 1 **of** 3
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 24 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown-dark brown, FILL w/silty loam
0.17-2	2	SS	1.5	0.0	0-0.5'	SAME AS ABOVE
					0.5-1.5'	Dark brown, FILL w/silty fine sand and fine-coarse gravel, brick fragment
2-4	3	SS	1.67	4.4	0-0.83'	Dark brown, FILL w/silty fine sand and fine-coarse gravel, brick fragment
					0.83-1.67'	Dark gray-black, FILL w/poorly sorted silty fine sand, some fine-coarse gravel, slight fuel oil-like odor
4-6	4	SS	2.0	1.4	0-2'	Dark gray-black, FILL w/poorly sorted silty fine sand, some fine-coarse gravel, slight fuel oil-like odor
6-8	5	SS	1.83	188	0-1.83'	SAME AS ABOVE, w/occasional lenses of blue and gray clay

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-7
Project Location: Bethpage, NY **Sheet** 2 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 24 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.83	132	0-1.83'	Dark gray-black, FILL w/poorly sorted silty fine sand, some fine-coarse gravel, occasional lenses of blue and gray clay, slight fuel oil-like odor
10-12	7	SS	1.67	88.0	0-0.83'	SAME AS ABOVE
					0.83-1.67'	Light blue/gray/orange, FILL w/mottled clay, interlayered w/black poorly sorted fine-medium sand, soft, strong layering, wet
12-14	8	SS	2.0	54.0	0-2'	Gray-light blue, FILL w/clay, interlayered w/black poorly sorted fine-coarse sand, pasty, wet
14-16	9	SS	2.0	5.8	0-2'	SAME AS ABOVE
16-18	10	SS	1.83	95.4	0-1.17'	SAME AS ABOVE, more sand than clay
					1.17-1.67'	FILL w/fine-coarse gravel, wet
					1.67-1.83'	Orange, FILL w/moderately sorted fine-medium sand, trace fine gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-7
Project Location: Bethpage, NY **Sheet** 3 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 24 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
18-20	11	SS	1.0	20.4	0-1'	Brown, FILL w/poorly sorted fine-coarse sand, some fine-coarse gravel, trace gray/orange pasty material
20-22	12	SS	1.5	0.0	0-1.5'	Buff, poorly sorted fine-coarse SAND, trace fine gravel, layers of moderately sorted fine-medium sand w/trace fine gravel, stratified w/orange fine sand layers approximately 1/8" thick
22-24	13	SS	2.0	0.0	0-2'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 18-20', 20-22' and 22-24'.

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Project No.: 1965-07 **Boring No.:** B-8
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam
0.17-2	2	SS	2.0	0.0	0-0.5'	SAME AS ABOVE
					0.5-2'	Brown, FILL w/moderately sorted fine-medium sand, little silt and fine-coarse gravel
2-4	3	SS	2.0	0.0	0-2'	Brown, FILL w/moderately sorted fine-medium sand, little silt and fine-coarse gravel
4-6	4	SS	2.0	0.0	0-2'	SAME AS ABOVE
6-8	5	SS	2.0	0.0	0-2'	SAME AS ABOVE

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-8
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	2.0	0.0	0-0.5'	Brown, FILL w/moderately sorted fine-medium silty sand and fine-coarse gravel
					0.5-2'	Orange, layered fine-medium SAND w/trace fine gravel, moderately sorted fine-coarse SAND and fine-coarse GRAVEL
10-12	7	SS	1.5	0.0	0-1.5'	Orange, layered fine-medium SAND w/trace fine gravel, moderately sorted fine-coarse SAND and fine-coarse GRAVEL

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** B-9
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 26 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	1	SS	1.67	51.0	0-0.5'	Black/dark gray, FILL w/silty fine sand, trace fine-coarse gravel, piece of wood
					0.5-1.67'	Orange-brown, FILL w/poorly sorted fine-medium sand, trace fine-coarse gravel
10-12	2	SS	1.67	7.4	0-0.17'	Brown, FILL w/silty fine sand
					0.17-1.67'	Brown, FILL w/silty fine sand and poorly sorted fine-coarse sand
12-14	3	SS	1.67	0.0	0-1.67'	Light brown, FILL w/poorly sorted fine-coarse sand and fine-coarse gravel, moderately sorted fine-medium sand w/trace fine-coarse gravel
14-16	4	SS	1.67	0.0	0-0.83'	Brown, FILL w/poorly sorted silty fine sand, trace fine-coarse gravel, wood fragments
					0.83-1.67'	Buff, FILL w/poorly sorted fine-coarse sand, trace fine-coarse gravel
16-18	5	SS	1.67	9.6	0-0.83'	Brown, FILL w/poorly sorted silty fine sand, trace fine-coarse gravel
					0.83-1.67'	Buff, moderately sorted fine-coarse SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

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Project No.: 1965-07 **Boring No.:** B-9
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 26 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
18-20	6	SS	0.0	N/A		NO RECOVERY
20-22	7	SS	1.67	1.6	0-0.83'	Brown-light brown, poorly sorted fine-medium sand, trace fine-coarse gravel
					0.83-1.67'	Buff, moderately sorted medium SAND, trace fine-coarse gravel
22-24	8	SS	1.5	0.0	0-1.5'	Buff, moderately sorted medium SAND, occasional orange laminations, trace fine-coarse gravel
24-26	9	SS	1.67	0.0	0-1.67'	SAME AS ABOVE, w/fine sand laminations

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 20-22', 22-24' and 24-26'.
N/A : Not Available

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Project No.: 1965-07 **Boring No.:** B-10
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam
0.17-2	2	SS	1.67	0.0	0-1.67'	Dark brown, FILL w/silty fine sand and fine-coarse gravel, some fine-medium sand, moist
2-4	3	SS	1.67	0.0	0-1.67'	Brown, FILL w/silty fine sand, trace fine-coarse gravel and cobbles
4-6	4	SS	0.0	N/A		NO RECOVERY
6-8	5	SS	1.67	0.0	0-1.67'	Orange, moderately sorted fine-medium SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4' and 6-8'.
N/A : Not Available

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Project No.: 1965-07 **Boring No.:** B-10
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	0.5	0.0	0-0.5'	Orange/light brown, fine-medium SAND, trace fine-coarse gravel
10-12	7	SS	2.0	0.0	0-0.83'	Orange, moderately sorted fine-medium SAND, trace fine gravel
					0.83-2'	Buff, poorly sorted medium-coarse SAND, some fine sand and fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** B-11
Project Location: Bethpage, NY **Sheet** 1 **of** 3
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/27/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/27/03

Boring Completion Depth: 20 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam, trace fine gravel
0.17-2	2	SS	1.0	0.0	0-0.5'	SAME AS ABOVE
					0.5-1'	Light brown, FILL w/fine sand, some fine gravel
2-4	3	SS	1.5	0.0	0-1.5'	Light brown, FILL w/poorly sorted fine-coarse sand, some fine-coarse gravel
4-6	4	SS	1.17	0.0	0-1.17'	Dark brown-black, FILL w/poorly sorted silty fine sand, trace fine-coarse gravel, slight fuel oil-like odor
6-8	5	SS	1.17	0.0	0-1.17'	Light brown, FILL w/poorly sorted silty fine-medium sand, trace fine-coarse gravel, trace cobbles

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-11
Project Location: Bethpage, NY **Sheet** 2 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/27/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/27/03

Boring Completion Depth: 20 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.17	0.0	0-1.17'	Light brown, FILL w/poorly sorted silty fine-medium sand, trace fine-coarse gravel, trace cobbles
10-12	7	SS	1.67	0.0	0-1.67'	Orange/light brown, poorly sorted fine-coarse SAND and fine-coarse GRAVEL w/poorly sorted fine-medium SAND, trace fine gravel and coarse sand, strong layering
12-14	8	SS	1.5	0.0	0-1.5'	SAME AS ABOVE, broken gray cobble in upper 3" w/slight fuel oil-like odor
14-16	9	SS	0.5	0.0	0-0.5'	Brown/gray, poorly sorted fine-medium SAND, some fine-coarse gravel
16-18	10	SS	1.67	0.0	0-1.67'	SAME AS ABOVE, light brown/gray

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

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Project No.: 1965-07 **Boring No.:** B-11
Project Location: Bethpage, NY **Sheet** 3 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/27/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/27/03

Boring Completion Depth: 20 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description
18-20	11	SS	1.67	0.0	0-1.67' Light brown/gray, poorly sorted fine-medium SAND, some fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 18-20'.

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Project No.: 1965-07 **Boring No.:** B-12
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/9/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/9/03

Boring Completion Depth: 28 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	1	SS	1.17	2.1	0-1.17'	Brown-dark brown, dark gray, FILL w/poorly sorted silty fine sand, trace fine-coarse gravel
10-12	2	SS	2.0	45.0	0-2'	Brown/black, FILL w/silty fine sand, some fine-coarse gravel, trace cobble, fuel oil-like odor, wet
12-14	3	SS	1.0	38.0	0-1'	SAME AS ABOVE
14-16	4	SS	0.83	42.0	0-0.83'	SAME AS ABOVE, w/concrete and canvas bag in tip of spoon
16-18	5	SS	2.0	112	0-2'	Brown/black, FILL w/silty fine sand, some fine-coarse gravel, trace cobble, piece of rubber hose (1/8" diameter), glass, fuel oil-like odor, wet

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

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Project No.: 1965-07 **Boring No.:** B-12
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/9/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/9/03

Boring Completion Depth: 28 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
18-20	6	SS	1.67	40.0	0-1.67'	Brown/black, FILL w/silty fine sand, some fine-coarse gravel, trace cobble, piece of electrical wire, dense, fuel oil-like odor, moist
20-22	7	SS	1.67	60.0	0-1.67'	SAME AS ABOVE, strand of hair
22-24	8	SS	2.0	15.0	0-1.17'	Brown/black, FILL w/silty fine sand, some fine-coarse gravel, trace cobble, pieces of wood, dense, fuel oil-like odor, moist
					1.17-1.67'	Brown-gray, FILL w/poorly sorted fine-medium sand, trace fine gravel
					1.67-2'	Buff, FILL w/moderately sorted m SAND and f-c GRAVEL
24-26	9	SS	1.0	2.7	0-0.5'	Black, FILL w/silty fine sand, trace cobble
					0.5-1'	Buff, poorly sorted fine-medium SAND w/trace fine-coarse gravel, moderately sorted fine-medium SAND, stratified
26-28	10	SS	1.67	0.0	0-1.67'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 18-20', 20-22', 22-24', 24-26' and 26-28'.

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-13
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/9/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/9/03

Boring Completion Depth: 26 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	1	SS	1.67	10.0	0-0.83'	Brown, FILL w/poorly sorted fine-medium sand, trace fine-coarse gravel, wet
					0.83-1.67'	Black, FILL w/silty fine sand, trace fine-coarse gravel and green clay
10-12	2	SS	1.67	26.0	0-1.67'	Brown-black, FILL w/clayey silty fine sand, trace fine-coarse gravel, wet
12-14	3	SS	1.67	12.0	0-1.67'	Black, FILL w/clayey silty fine sand, trace fine-coarse gravel, pieces of canvas bag, wet
14-16	4	SS	1.67	0.0	0-1.67'	Dark gray, FILL w/clayey silty fine sand, trace fine-coarse gravel, piece of plastic, pieces of canvas bag, wet
16-18	5	SS	2.0	12.0	0-2'	Dark gray/black, FILL w/silty fine sand, trace fine-coarse gravel, some wood and concrete fragments

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

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Project No.: 1965-07 **Boring No.:** B-13
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/9/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/9/03

Boring Completion Depth: 26 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
18-20	6	SS	2.0	42.0	0-2'	Dark gray/black, FILL w/silty fine sand, trace fine-coarse gravel, some wood and concrete fragments
20-22	7	SS	2.0	12.0	0-2'	SAME AS ABOVE
22-24	8	SS	1.67	0.0	0-1.67'	Buff, well sorted medium SAND, slightly stratified
24-26	9	SS	1.83	0.0	0-1.83'	SAME AS ABOVE, w/layers of moderately sorted fine-coarse SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 18-20', 20-22', 22-24' and 24-26'.

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** B-14
Project Location: Bethpage, NY **Sheet** 1 **of** 1
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/11/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/11/03

Boring Completion Depth: 14 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	1	SS	1.67	0.0	0-0.17'	Brown/gray, FILL w/silt and fine sand, trace fine-coarse gravel
					0.17-0.25'	Black, FILL w/well sorted fine sand, trace fine-coarse gravel
					0.25-1.67'	Orange, moderately sorted medium SAND and moderately sorted fine-coarse SAND w/trace fine-coarse gravel, layered
10-12	2	SS	1.67	0.0	0-1.67'	Orange, moderately sorted medium SAND and moderately sorted fine-coarse SAND w/trace fine-coarse gravel, slightly stratified laminations
12-14	3	SS	1.67	0.0	0-1.67'	Buff, moderately sorted medium SAND and moderately sorted fine-coarse SAND w/trace fine-coarse gravel, slightly stratified orange laminations

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12' and 12-14'.

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Project No.: 1965-07 **Boring No.:** B-15
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam
0.17-2	2	SS	1.67	0.0	0-1.67'	Brown, FILL w/silty fine sand, trace fine-coarse gravel, cinder fragment
2-4	3	SS	0.0	N/A		NO RECOVERY
4-6	4	SS	1.67	0.0	0-1.67'	Light brown, poorly sorted fine-coarse SAND and moderately sorted fine-medium SAND, trace fine-coarse gravel
6-8	5	SS	1.5	0.0	0-1.5'	Orange, poorly sorted fine-coarse SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 4-6' and 6-8'.
N/A : Not Available

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Project No.: 1965-07 **Boring No.:** B-15
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description
8-10	6	SS	0.83	0.0	0-0.83' Orange, poorly sorted fine-coarse SAND, trace fine-coarse gravel
10-12	7	SS	1.83	0.0	0-1.83' SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** B-16
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 16 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown/dark gray, FILL w/silty loam, trace fine gravel
0.17-2	2	SS	2.0	0.0	0-0.33'	SAME AS ABOVE
					0.33-0.67'	Orange, FILL w/poorly sorted silty fine sand, some fine-coarse gravel
					0.67-2'	Gray, FILL w/poorly sorted silty fine sand, some fine-coarse gravel
2-4	3	SS	2.0	0.0	0-1.5'	Brown/dark brown, FILL w/poorly sorted fine sand and silt, trace fine-coarse gravel
					1.5-2'	Light brown, FILL w/poorly sorted fine-medium sand and silt, trace fine-coarse gravel
4-6	4	SS	2.0	0.0	0-1.5'	Brown, FILL w/silty fine sand and fine-coarse gravel
					1.5-2'	Light brown, moderately sorted fine-medium SAND, trace fine gravel
6-8	5	SS	2.0	0.0	0-0.5'	Brown-dark brown, poorly sorted fine SAND, some silt and fine gravel
					0.5-0.67'	Orange, well sorted fine SAND
					0.67-2'	Orange-gray, CLAY and silty CLAY w/fine gravel, layered

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-16
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 16 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.67	0.0	0-1.67'	Orange, moderately sorted fine-medium SAND and fine GRAVEL w/poorly sorted medium-coarse SAND and fine GRAVEL, layered
10-12	7	SS	1.67	0.0	0-1.67'	SAME AS ABOVE, w/fine-coarse gravel and orange stained layer (iron and heavy minerals)
12-14	8	SS	1.67	0.0	0-0.5'	SAME AS ABOVE
					0.5-1.67'	Light brown, poorly sorted fine-medium SAND, trace fine gravel
14-16	9	SS	2.0	0.0	0-2'	SAME AS ABOVE, w/poorly sorted fine-coarse sand layer

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14' and 14-16'.

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Project No.: 1965-07 **Boring No.:** B-17
Project Location: Bethpage, NY **Sheet** 1 **of** 4
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 34 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Light brown, FILL w/well sorted fine sand and silt
0.17-2	2	SS	1.67	0.0	0-0.17'	SAME AS ABOVE
					0.17-1.33'	Brown, FILL w/silty fine sand, trace fine-coarse gravel, dense
					1.33-1.67'	Buff, FILL w/moderately sorted fine-medium sand, trace fine gravel
2-4	3	SS	1.83	190	0-1'	Buff, FILL w/moderately sorted fine-medium sand, trace fine gravel
					1-1.83'	Black, FILL w/silty fine sand and fine-coarse gravel
4-6	4	SS	1.67	61.0	0-1.67'	Black/greenish brown, FILL w/silty fine sand and fine-coarse gravel, slight layering
6-8	5	SS	1.67	61.0	0-1.67'	SAME AS ABOVE

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-17
Project Location: Bethpage, NY **Sheet** 2 **of** 4
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 34 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.67	22.0	0-1.67'	Black/greenish brown, FILL w/silty fine sand and fine-coarse gravel, some hard blue/gray fragmented material, wood block, slight layering
10-12	7	SS	1.67	16.0	0-1.67'	SAME AS ABOVE
12-14	8	SS	1.67	235	0-1.67'	SAME AS ABOVE
14-16	9	SS	1.83	51.0	0-1.83'	SAME AS ABOVE, w/pieces of particle board
16-18	10	SS	1.67	62.0	0-1.67'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12', 12-14', 14-16' and 16-18'.

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Project No.: 1965-07 **Boring No.:** B-17
Project Location: Bethpage, NY **Sheet** 3 **of** 4
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 34 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
18-20	11	SS	1.83	40.5	0-1.83'	Black/greenish brown, FILL w/silty fine sand and fine-coarse gravel, some hard blue/gray fragmented material, wood block, slight layering
20-22	12	SS	1.83	17.0	0-1.83'	SAME AS ABOVE, w/piece of plastic
22-24	13	SS	1.67	40	0-1.67'	SAME AS ABOVE
24-26	14	SS	1.83	14.0	0-1.67'	SAME AS ABOVE, w/pieces of rubber, glass and rag fibers
					1.67-1.83'	Brown, poorly sorted fine-coarse SAND
26-28	15	SS	0.0	N/A		NO RECOVERY

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 18-20', 20-22', 22-24' and 24-26'. N/A : Not Available

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Project No.: 1965-07 **Boring No.:** B-17
Project Location: Bethpage, NY **Sheet** 4 **of** 4
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 34 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
28-30	16	SS	1.67	0.0	0-1.67'	Buff, well sorted fine-medium SAND, slightly stratified
30-32	17	SS	1.83	0.0	0-1.83'	SAME AS ABOVE
32-34	18	SS	1.83	0	0-1.83'	Buff/brown, poorly sorted fine-medium SAND, trace fine gravel, mottled

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 28-30', 30-32' and 32-34'.

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Project No.: 1965-07 **Boring No.:** B-18
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 14 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty loam
0.17-2	2	SS	2.0	0.0	0-0.5'	SAME AS ABOVE
					0.5-1.67'	Brown, FILL w/poorly sorted fine-medium sand and silt, some fine-coarse gravel, moist
					1.67-2'	Light brown, FILL w/moderately sorted fine-medium sand, little silt and fine gravel, wet
2-4	3	SS	2.0	0.0	0-1.5'	Light brown, FILL w/moderately sorted fine-medium sand, little silt and fine gravel, wet
					1.5-1.67'	Gray/black, FILL w/silty fine sand, slight fuel oil-like odor
					1.67-2'	Dark brown, FILL w/silty fine sand, some fine-coarse gravel
4-6	4	SS	2.0	0.0	0-2'	Brown-dark brown, FILL w/poorly sorted fine-coarse sand, some of light gray-dark gray silt and clay, slight fuel oil-like odor, wet
6-8	5	SS	2.0	0.0	0-2'	Dark brown, FILL w/poorly sorted fine sand and silt, little fine-coarse gravel, piece of root, occasional dark gray zones

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-18
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/29/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/29/03

Boring Completion Depth: 14 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description
8-10	6	SS	2.0	0.0	0-0.5' gravel, piece of root, occasional dark gray zones 0.5-2' Orange, poorly sorted fine-coarse SAND w/trace fine gravel, moderately sorted fine-medium SAND w/some fine gravel, slight layering
10-12	7	SS	1.5	0.0	0-1.5' Orange, poorly sorted fine-coarse SAND w/trace fine gravel, moderately sorted fine-medium SAND w/some fine gravel, thin gray clay layer at 1.33', slight layering
12-14	8	SS	1.67	0.0	0-1.67' Buff-orange, poorly sorted fine-coarse SAND w/trace fine gravel, moderately sorted fine-medium SAND w/some fine gravel, thin gray clay layer at 1.33', slight layering

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10', 10-12' and 12-14'.

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Project No.: 1965-07 **Boring No.:** B-19
Project Location: Bethpage, NY **Sheet** 1 **of** 3
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 30 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-2	1	SS	2.0	0.0	0-0.5'	Brown, FILL w/silty fine sand
					0.5-2'	Brown, FILL w/silty fine sand, trace fine-coarse gravel, dense
2-4	2	SS	1.67	0.0	0-1.67'	Brown, FILL w/silty fine sand, trace fine-coarse gravel, dense
4-6	3	SS	1.83	25.0	0-0.92'	SAME AS ABOVE
					0.92-1.83'	Brown-dark gray, FILL w/silty fine sand, embedded w/trace fine-coarse gravel, dense
6-8	4	SS	1.83	10.4	0-1.83'	Brown-dark gray, FILL w/silty fine sand, embedded w/trace fine-coarse gravel, dense
8-10	5	SS	1.83	84.0	0-1.83'	Dark gray-black, FILL w/silty fine sand, piece of rubber, dense

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis 8-10'.

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Project No.: 1965-07 **Boring No.:** B-19
Project Location: Bethpage, NY **Sheet** 2 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 30 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
10-12	6	SS	1.67	10.0	0-1.67'	Dark gray-dark brown, FILL w/silty fine sand, pieces of rubber and non-rusting metal, dense
12-14	7	SS	2.0	106	0-2'	SAME AS ABOVE
14-16	8	SS	0.0	N/A		NO RECOVERY
16-18	9	SS	2.0	70.3	0-2'	Dark gray-dark brown, FILL w/silty fine sand, pieces of rubber and non-rusting metal, dense
18-20	10	SS	1.67	156	0-1.67'	Dark gray-dark brown, FILL w/silty fine sand, pieces of wood, rivets, metal

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 10-12', 12-14', 16-18' and 18-20'. N/A : Not Available

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Project No.: 1965-07 **Boring No.:** B-19
Project Location: Bethpage, NY **Sheet** 3 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 30 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)		Lithology Description
20-22	11	SS	0.0	N/A		NO RECOVERY
22-24	12	SS	2.0	16.1	0-2'	Dark gray-dark brown, FILL w/silty fine sand, pieces of wood, rivets, metal
24-26	13	SS	0.67	21.0	0-0.67'	SAME AS ABOVE, cobble in tip of spoon
26-28	14	SS	1.0	26.0	0-0.5'	Black, FILL w/silty fine sand, pieces of wood, loose
					0.5-1'	Buff/orange, well sorted fine SAND
28-30	15	SS	1.0	0.0	0-1'	Buff/orange, well sorted fine SAND

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 22-24', 24-26', 26-27', 27-28' and 28-30'. N/A : Not Available

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Project No.: 1965-07 **Boring No.:** B-20
Project Location: Bethpage, NY **Sheet** 1 **of** 3
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 26 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-2	1	SS	2.0	0.0	0-0.5'	Light brown, FILL w/well sorted medium sand, trace silt and fine gravel
					0.5-2'	Brown-dark brown, FILL w/silty fine sand, trace fine-coarse gravel
2-4	2	SS	2.0	0.0	0-2'	Brown-dark brown, FILL w/silty fine sand, trace fine-coarse gravel
4-6	3	SS	1.0	0.0	0-1'	SAME AS ABOVE
6-8	4	SS	2.0	70.2	0-0.17'	SAME AS ABOVE
					0.17-2'	Gray-dark gray, FILL w/silty fine sand, trace fine-coarse gravel, lens of yellow silt, trace black silty fine sand
8-10	5	SS	1.67	55.4	0-1.67'	Brown/gray, FILL w/silty fine sand, trace fine gravel, some concrete fragments

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 6-8' and 8-10'.

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Project No.: 1965-07 **Boring No.:** B-20
Project Location: Bethpage, NY **Sheet** 2 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 26 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
10-12	6	SS	2.0	55.4	0-2'	Black-dark brown, FILL w/silty fine sand, trace fine-coarse gravel, brick and wood fragments
12-14	7	SS	2.0	105	0-2'	SAME AS ABOVE
14-16	8	SS	2.0	69.7	0-2'	SAME AS ABOVE
16-18	9	SS	1.33	113	0-1.33'	SAME AS ABOVE
18-20	10	SS	2.0	226	0-2'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 10-12', 12-14', 14-16', 16-18' and 18-20'.

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Project No.: 1965-07 **Boring No.:** B-20
Project Location: Bethpage, NY **Sheet** 3 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/3/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/3/03

Boring Completion Depth: 26 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
20-22	11	SS	0.33	31.0	0-0.33'	Black-dark brown-brown, FILL w/silty fine sand, trace fine-coarse gravel, brick and wood fragments
22-24	12	SS	1.67	70.0	0-0.33'	SAME AS ABOVE, black
					0.33-1.67'	Brown-orange, poorly sorted fine-medium SAND, trace fine-coarse gravel
24-26	13	SS	1.17	0.0	0-1.17'	Buff, poorly sorted fine-coarse SAND and GRAVEL

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 22.5-24' and 24-26'.

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Project No.: 1965-07 **Boring No.:** B-21
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown/dark brown, FILL w/silty loam
0.17-2	2	SS	1.5	0.0	0-0.5'	SAME AS ABOVE
					0.5-1.5'	Brown/dark brown, FILL w/silty fine sand, trace fine-coarse gravel, ash fragment
2-4	3	SS	1.67	0.0	0-1.5'	Brown/gray, FILL w/poorly sorted fine-medium sand, some fine-coarse gravel
					1.5-1.58'	Gray, FILL w/silty fine sand
					1.58-1.67'	Brown, FILL w/moderately sorted fine-medium sand, trace fine-coarse gravel
4-6	4	SS	1.67	0.0	0-1.17'	Brown/gray, FILL w/silty fine sand, trace fine gravel
					1.17-1.67'	Orange, FILL w/silty fine sand, trace fine-coarse gravel, trace black mottled silt zones
6-8	5	SS	1.67	0.0	0-1.67'	Buff, moderately sorted fine-medium SAND, trace fine gravel, trace layers of orange moderately sorted fine-coarse sand w/trace fine-coarse gravel

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-21
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/2/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/2/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.83	0.0	0-1.83'	Buff, moderately sorted fine-medium SAND, trace fine gravel, trace layers of orange moderately sorted fine-coarse sand w/trace fine-coarse gravel
10-12	7	SS	1.83	0.0	0-1.83'	Orange, poorly sorted medium-coarse SAND, some fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** B-22
Project Location: Bethpage, NY **Sheet** 1 **of** 3
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/9/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/9/03

Boring Completion Depth: 30 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-2	1	SS	1.67	0.0	0-0.5'	Brown, FILL w/well sorted fine sand
					0.5-1.67'	Dark brown, FILL w/silty fine sand, trace fine-coarse gravel, loose
2-4	2	SS	1.67	0.0	0-0.83'	Dark brown, FILL w/silty fine sand, trace fine-coarse gravel, loose
					0.83-1.67'	Dark gray, FILL w/silty fine sand, trace fine-coarse gravel, loose, slight fuel oil-like odor
4-6	3	SS	1.67	69.0	0-1.33'	Dark gray, FILL w/silty fine sand, trace fine-coarse gravel, loose, piece of slag, slight fuel oil-like odor
					1.33-1.67'	Brown, FILL w/silty fine sand, trace fine-coarse gravel, loose, piece of slag, slight fuel oil-like odor
6-8	4	SS	1.67	53.0	0-1.67'	Brown/dark gray, FILL w/silty fine sand, trace fine-coarse gravel, loose, piece of slag, fuel oil-like odor
8-10	5	SS	0.83	143	0-0.83'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 4-6', 6-8' and 8-10'.

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Project No.: 1965-07 **Boring No.:** B-22
Project Location: Bethpage, NY **Sheet** 2 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/9/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/9/03

Boring Completion Depth: 30 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
10-12	6	SS	1.5	146	0-1.5'	Brown/dark gray, FILL w/silty fine sand, trace fine-coarse gravel, loose, piece of plastic, fuel oil-like odor
12-14	7	SS	1.17	175	0-1.17'	SAME AS ABOVE
14-16	8	SS	2.0	105	0-2'	SAME AS ABOVE, w/piece of concrete
16-18	9	SS	1.67	158	0-1.67'	Brown-green, FILL w/silty fine sand, trace fine-coarse gravel, loose, piece of plastic, fuel oil-like odor
18-20	10	SS	1.67	0.0	0-1.67'	SAME AS ABOVE, no odor

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 10-12', 12-14', 14-16', 16-18' and 18-20'.

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Project No.: 1965-07 **Boring No.:** B-22
Project Location: Bethpage, NY **Sheet** 3 **of** 3
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/9/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/9/03

Boring Completion Depth: 30 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
20-22	11	SS	0.67	0.0	0-0.67'	Brown-green, FILL w/silty fine sand, trace fine-coarse gravel, loose, piece of wire
22-24	12	SS	0.5	0.0	0-0.5'	SAME AS ABOVE
24-26	13	SS	2.0	0.0	0-1'	SAME AS ABOVE
					1-2'	Buff, poorly sorted fine-coarse SAND, trace fine-coarse gravel
26-28	14	SS	0.0	N/A		NO RECOVERY
28-30	15	SS	1.67	0.0	0-1.67'	Buff, poorly sorted fine-coarse SAND and GRAVEL w/layers of moderately sorted medium SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 20-22', 22-24', 25-26' and 28-30'. N/A : Not Available

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Project No.: 1965-07 **Boring No.:** B-23
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Light brown, FILL w/well sorted fine-medium sand
0.17-2	2	SS	1.67	0.0	0-1.5'	Light brown, FILL w/moderately sorted medium-coarse sand, trace fine-coarse gravel, wet
					1.5-1.67'	Dark brown-brown, FILL w/moderately sorted medium sand, trace fine-coarse gravel
2-4	3	SS	2.0	0.0	0-2'	Brown/gray, FILL w/poorly sorted silty fine sand, some fine-coarse gravel, dense, moist
4-6	4	SS	1.0	0.0	0-1'	SAME AS ABOVE, w/piece of wood
6-8	5	SS	2.0	0.0	0-0.67'	Orange, moderately sorted fine-medium SAND, trace fine gravel, dry
					0.67-2'	Gray-orange, variegated clayey SILT and mottled SAND, embedded fine gravel

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-23
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.0	0.0	0-1'	Gray-orange, variegated clayey SILT and mottled SAND, embedded fine gravel
10-12	7	SS	1.67	0.0	0-1.67'	Buff, moderately sorted fine SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** B-24
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silty fine sand, trace pebbles, dense
0.17-2	2	SS	1.67	0.0	0-1.67'	Light brown, FILL w/poorly sorted fine-coarse sand, some fine-coarse gravel
2-4	3	SS	1.67	0.0	0-1.33'	Dark brown, FILL w/silty fine sand, trace fine-coarse gravel, piece of concrete
					1.33-1.67'	Brown-dark brown, FILL w/poorly sorted fine-coarse sand, trace fine-coarse gravel
4-6	4	SS	1.67	3.7	0-1'	SAME AS ABOVE
					1-1.17'	Gray/orange, variegated clayey SILT embedded w/fine gravel
					1.17-1.67'	Orange, moderately sorted medium SAND
6-8	5	SS	2.0	0.0	0-2'	Orange, moderately sorted medium SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-24
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.83	0.0	0-1.83'	Orange/buff, moderately sorted medium-coarse SAND, trace fine-coarse gravel, slight layering
10-12	7	SS	1.83	0.0	0-1.83'	SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** B-25
Project Location: Bethpage, NY **Sheet** 1 **of** 2
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/moderately sorted fine sand
0.17-2	2	SS	1.67	0.0	0-1.67'	Brown-gray, FILL w/moderately sorted fine-coarse sand, trace fine-coarse gravel, silty fine-medium SAND and fine-coarse GRAVEL, layered
2-4	3	SS	0.67	0.0	0-0.67'	Buff, poorly sorted medium-coarse SAND, trace fine-coarse gravel and fine sand
4-6	4	SS	1.0	0.0	0-1'	SAME AS ABOVE, w/layers of moderately sorted medium sand, trace fine-coarse gravel and cobble
6-8	5	SS	1.67	0.0	0-1.67'	Brown-buff, moderately sorted medium SAND w/fine-coarse gravel, slight layering

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** B-25
Project Location: Bethpage, NY **Sheet** 2 **of** 2
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/10/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/10/03

Boring Completion Depth: 12 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.83	0.0	0-0.33'	Orange, moderately sorted medium SAND, trace fine-coarse gravel and cobbles
					0.33-1.83'	Buff, moderately sorted medium-coarse SAND, trace fine-coarse gravel
10-12	7	SS	1.67	0.0	0-1.67'	Buff, moderately sorted medium-coarse SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** BCPMW-1
Project Location: Bethpage, NY **Sheet** 1 **of** 5
Project Name: Bethpage Community Park Investigation Sampling Program **By:** CS

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/30/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/30/03

Boring Completion Depth: 70 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Dark brown, FILL w/silty loam
0.17-2	2	SS	1.83	0.0	0-0.67'	SAME AS ABOVE, w/dark brown silt and fine sand
					0.67-1.33'	Light brown, FILL w/fine sand and silt, some rounded f-c gravel
					1.33-1.83'	Brown, FILL w/poorly sorted fine-medium sand, little silt and fine gravel
2-4	3	SS	1.67	0.0	0-1.67'	Orange, poorly sorted fine-medium SAND w/little fine-coarse gravel and trace silt, moderately sorted fine SAND w/trace fine gravel and silt, layered
4-6	4	SS	1.67	0.0	0-1.67'	SAME AS ABOVE
6-8	5	SS	1.67	0.0	0-0.33'	Dark orange, moderately sorted fine SAND, trace fine-coarse gravel
					0.33-1.33'	Light brown, moderately sorted fine SAND, trace fine-coarse gravel
					1.33-1.67'	Light gray-orange, mottled SILT

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** BCPMW-1
Project Location: Bethpage, NY **Sheet** 2 **of** 5
Project Name: Bethpage Community Park Soil Sampling Program **By:** CS

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/30/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/30/03

Boring Completion Depth: 70 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	2.0	0.0	0-2'	Orange, moderately sorted fine SAND w/trace fine gravel, poorly sorted fine-coarse SAND w/little fine-coarse gravel, layered, well rounded
10-12	7	SS	1.67	0.0	0-1.67'	SAME AS ABOVE
14-16	8	SS	1.67	0.0	0-1.67'	Light brown, moderately sorted fine-coarse SAND, little fine gravel, trace coarse gravel
19-21	9	SS	1.67	0.0	0-1.67'	Orange-buff, fine-coarse GRAVEL, trace cobbles
24-26	10	SS	2.0	0.0	0-2'	SAME AS ABOVE, w/well sorted fine SAND and dark orange mineral laminations, layered

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** BCPMW-1
Project Location: Bethpage, NY **Sheet** 3 **of** 5
Project Name: Bethpage Community Park Soil Sampling Program **By:** CS

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/30/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/30/03

Boring Completion Depth: 70 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
29-31	11	SS	1.67	0.0	0-1.67'	Orange-buff, poorly sorted fine SAND w/fine-coarse GRAVEL, trace cobbles, dark orange heavy mineral laminations, slight layering
34-36	12	SS	1.67	0.0	0-1.67'	SAME AS ABOVE
39-41	13	SS	2.0	0.0	0-0.83'	Buff, well sorted fine-medium SAND
					0.83-2'	Buff, medium-coarse SAND and fine GRAVEL
44-46	14	SS	1.67	0.0	0-0.67'	Brown-buff, moderately sorted fine-medium SAND, trace fine gravel
					0.67-0.83'	Dark gray/beige, silty CLAY
					0.83-1.67'	Biege, CLAY, light varves of dark gray clay
49-51	15	SS	0.75	0.0	0-0.25'	Gray/black, CLAY, layered
					0.25-0.5'	Light brown, poorly sorted fine-medium SAND, trace fine gravel, moist
					0.5-0.75'	Gray/black, CLAY, layered, wet

Sample Type:
SS = Split Spoon

Notes:
No samples selected for analysis.

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** BCPMW-1
Project Location: Bethpage, NY **Sheet** 4 **of** 5
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/30/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/30/03

Boring Completion Depth: 70 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
54-56	16	SS	0.8	0.0	0-0.8'	Black/beige/light green, silty CLAY and CLAY, layered, moist-wet
56-58	17	SS	1.67	0.0	0-0.5'	Orange/black/gray, silty CLAY, layered, stiff, dry
					0.5-1.67'	Gray, CLAY, stiff, dry
58-60	18	SS	1.67	0.0	0-0.5'	Orange/gray/dark gray, silty fine SAND, layered
					0.5-1.67'	Gray-dark gray, silty CLAY, trace embedded cobbles, stiff
60-62	19	SS	1.67	0.0	0-0.83'	Gray/dark gray, silty CLAY, fluffy
					0.83-1.67'	Gray, CLAY, stiff
62-64	20	SS	1.67	0.0	0-0.83'	Gray, silty CLAY w/thin orange layers of silty fine sand, moist
					0.83-1.67'	Gray, CLAY, stiff

Sample Type:
SS = Split Spoon

Notes:
No samples selected for analysis.

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** BCPMW-1
Project Location: Bethpage, NY **Sheet** 5 **of** 5
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 5/30/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 5/30/03

Boring Completion Depth: 70 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description
64-66	21	SS	1.0	0.0	0-0.33' Gray, silty CLAY 0.33-0.5' Orange, silty fine SAND, moist 0.5-1' Beige, CLAY
68-70	22	SS	1.0	0.0	0-0.5' Gray/brown, silty fine SAND, wet 0.5-1' Gray, silty CLAY

Sample Type:
SS = Split Spoon

Notes:
No samples selected for analysis.

Dvirka and Bartilucci CONSULTING ENGINEERS
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Project No.: 1965-07 **Boring No.:** BCPMW-2
Project Location: Bethpage, NY **Sheet** 1 **of** 4
Project Name: Bethpage Community Park Investigation Sampling Program **By:** CS

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/5/03

Boring Completion Depth: 75 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Brown, FILL w/silt and loam
0.17-2	2	SS	1.67	0.0	0-0.5'	SAME AS ABOVE
					0.5-1.67'	Light brown-brown, FILL w/silty fine sand, trace fine-coarse gravel
2-4	3	SS	1.67	0.0	0-1.67'	Brown, FILL w/poorly sorted fine-medium sand, some-little silt and fine-coarse gravel, trace cobbles, moist
4-6	4	SS	1.33	0.0	0-1.33'	SAME AS ABOVE
6-8	5	SS	1.67	0.0	0-1'	Brown-orange, moderately sorted fine-coarse SAND, trace fine-coarse gravel
					1-1.67'	Brown-buff, moderately sorted medium SAND, little fine sand, trace fine gravel

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** BCPMW-2
Project Location: Bethpage, NY **Sheet** 2 **of** 4
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/5/03

Boring Completion Depth: 75 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	0.5	0.0	0-0.5'	Brown-buff, moderately sorted medium SAND, little fine sand, trace fine gravel
10-12	7	SS	1.33	0.0	0-1.33'	Brown-light brown, poorly sorted fine-medium SAND, trace fine gravel
12-14	8	SS	1.5	0.0	0-1.5'	Brown-buff, moderately sorted medium SAND, little silt and fine-coarse gravel, trace cobbles
19-21	9	SS	1.67	0.0	0-1'	Buff, poorly sorted medium-coarse SAND, trace fine-coarse gravel and cobble
					1-1.67'	Buff, moderately sorted medium SAND, trace fine-coarse gravel
24-26	10	SS	1.67	0.0	0-1.67'	Buff/brown, poorly sorted fine-coarse SAND w/fine-coarse GRAVEL

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Project No.: 1965-07 **Boring No.:** BCPMW-2
Project Location: Bethpage, NY **Sheet** 3 **of** 4
Project Name: Bethpage Community Park Soil Sampling Program **By:** CS

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/5/03

Boring Completion Depth: 75 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
29-31	11	SS	1.17	0.0	0-0.75'	Brown/dark brown, fine-medium SAND
					0.75-1.17'	Buff, medium-coarse SAND, trace fine gravel
34-36	12	SS	1.67	0.0	0-0.83'	Buff, moderately sorted fine-medium SAND, trace fine gravel
					0.83-1.67'	Buff, moderately sorted medium-coarse SAND, trace fine-coarse gravel
39-41	13	SS	1.0	0.0	0-0.5'	Brown-beige, fine SAND
					0.5-1'	Beige, clayey SILT, stiff
44-46	14	SS	1.5	0.0	0-1'	Beige, silty fine SAND, some light gray clay, trace embedded cobbles
					1-1.5'	Buff/orange, well sorted fine SAND, stratified
49-51	15	SS	1.83	0.0	0-1.83'	Buff/orange, well sorted fine SAND, stratified

Sample Type:
SS = Split Spoon

Notes:
No samples selected for analysis.

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Project No.: 1965-07 **Boring No.:** BCPMW-2
Project Location: Bethpage, NY **Sheet** 4 **of** 4
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/5/03

Boring Completion Depth: 75 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
54-56	16	SS	1.67	0.0	0-1.59'	Buff/orange, well sorted fine SAND, stratified
					1.59-1.67'	Light gray/light beige, CLAY, stiff
59-61	17	SS	1.67	0.0	0-1.67'	Buff/orange, well sorted fine SAND, stratified
64-66	18	SS	1.67	0.0	0-1.67'	Orange/light gray, moderately sorted fine-medium SAND, stratified, wet at 65'
69-70	19	SS	1.0	0.0	0-1'	Light brown, well sorted medium SAND, little fine-coarse sand

Sample Type:
SS = Split Spoon

Notes:
No samples selected for analysis.

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Project No.: 1965-07 **Boring No.:** BCPMW-3
Project Location: Bethpage, NY **Sheet** 1 **of** 4
Project Name: Bethpage Community Park **By:** CS
Investigation Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/6/03

Boring Completion Depth: 74 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
0-0.17	1	HS	0.17	0.0	0-0.17'	Dark brown, FILL w/silt and loam
0.17-2	2	SS	1.5	0.0	0-0.5'	SAME AS ABOVE
					0.5-1.5'	Brown/gray, FILL w/poorly sorted fine-medium sand, trace fine-coarse gravel
2-4	3	SS	1.67	14.0	0-0.83'	Orange, FILL w/moderately sorted fine-medium sand and fine-coarse gravel
					0.83-1.67'	Dark gray, FILL w/silty fine sand and fine-coarse gravel
4-6	4	SS	2.0	0.0	0-1'	Dark gray, FILL w/silty fine sand and fine-coarse gravel
					1-2'	Orange, moderately sorted fine-coarse SAND, trace fine-coarse gravel
6-8	5	SS	2.0	0.0	0-1'	Orange, moderately sorted fine-coarse SAND, trace fine-coarse gravel
					1-2'	Gray, SILT, little fine sand w/trace fine-coarse gravel

Sample Type:
SS = Split Spoon HS = Hand Sample

Notes:
Samples selected for analysis at 0-2", 2"-2', 2-4', 4-6' and 6-8'.

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Project No.: 1965-07 **Boring No.:** BCPMW-3
Project Location: Bethpage, NY **Sheet** 2 **of** 4
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/6/03

Boring Completion Depth: 74 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
8-10	6	SS	1.5	0.0	0-1.5'	Orange, poorly sorted fine-coarse SAND w/trace fine-coarse gravel, poorly sorted fine-medium SAND w/trace fine-coarse gravel, layered
10-12	7	SS	1.83	0.0	0-0.92'	SAME AS ABOVE
					0.92-1.83'	Buff, well sorted fine-medium SAND
19-21	8	SS	1.67	0.0	0-1.67'	Brown-light brown, moderately sorted medium-coarse SAND, little fine-coarse gravel
24-26	9	SS	1.0	0.0	0-1'	Light brown, poorly sorted fine-coarse SAND and moderately sorted medium SAND, trace coarse gravel, slight layering
29-31	10	SS	0.5	0.0	0-0.5'	Buff, moderately sorted fine-medium SAND, trace fine-coarse gravel

Sample Type:
SS = Split Spoon

Notes:
Samples selected for analysis at 8-10' and 10-12'.

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Project No.: 1965-07 **Boring No.:** BCPMW-3
Project Location: Bethpage, NY **Sheet** 3 **of** 4
Project Name: Bethpage Community Park Soil Sampling Program **By:** CS

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/6/03

Boring Completion Depth: 74 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description	
34-36	11	SS	2.0	0.0	0-1.67'	Buff, poorly sorted medium-coarse SAND, some fine-coarse gravel, little coarse iron grains
					1.67-2'	Orange, well sorted medium SAND, trace fine gravel
39-41	12	SS	1.67	0.0	0-1.67'	Orange/beige, SILT, trace fine sand w/silt, trace clay, stratified
44-46	13	SS	2.0	0.0	0-0.5'	Light gray, CLAY, stiff
					0.5-2'	Orange/light gray, well sorted fine SAND and SILT, stratified
49-51	14	SS	1.83	0.0	0-0.17'	Beige, CLAY
					0.17-1.83'	Buff/orange, well sorted fine SAND, stratified
54-56	15	SS	1.67	0.0	0-1.67'	Buff/orange, well sorted fine SAND, stratified

Sample Type:
SS = Split Spoon

Notes:
No samples selected for analysis.

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Project No.: 1965-07 **Boring No.:** BCPMW-3
Project Location: Bethpage, NY **Sheet** 4 **of** 4
Project Name: Bethpage Community Park **By:** CS
Soil Sampling Program

Drilling Contractor: Clearwater
Driller: B. Vigliotta
Drill Rig: Hollow Stem Auger
Date Started: 6/5/03

Geologist: Al Jaroszewski
Drilling Method: Hollow Stem Auger
Drive Hammer Weight: 140 lbs.
Date Completed: 6/6/03

Boring Completion Depth: 74 ft.
Ground Surface Elevation: -- ft.
Boring Diameter: 8 in.

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (ft.)	PID (ppm)	Lithology Description
59-61	16	SS	1.67	0.0	0-1.67' Buff/orange, well sorted fine SAND, stratified
64-65	17	SS	1.67	0.0	0-1.67' Brown, moderately sorted fine-medium SAND, trace silt, wet
69-71	18	SS	1.67	0.0	0-1.67' SAME AS ABOVE

Sample Type:
SS = Split Spoon

Notes:
No samples selected for analysis.