REMEDIAL INVESTIGATION REPORT

TEE BIRD COUNTRY CLUB – NORTH COURSE
MOREAU, NEW YORK

NYSDEC Site #546028

Prepared for:

Tee Bird Country Club, Inc.

August 12, 2011

ALPHA GEOSCIENCE

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Geology

Hydrology

Remediation

Water Supply

Remedial Investigation Report

Tee Bird Country Club – North Course
Moreau, New York

NYSDEC Site #546028

Prepared for:

Tee Bird Country Club, Inc.

Prepared by:

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I certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

August 12, 2011

Scott M. Hulseapple — Date
Qualified Environmental Professional

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

Appendix A: Boring Logs
Appendix B: Well Construction Logs
Appendix C: Fish and Wildlife Impact Analysis Decision Key

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Adirondack	Adirondack Environmental Services in Albany, NY
bgs	below ground surface
COC	Contaminants of concern
COPC	Contaminants of potential concern
DO	Dissolved oxygen
DUSR	Data Usability Summary Report
EPA	US Environmental Protection Agency
ESA	Environmental Site Assessment
FS	Feasibility Study
ft	feet
GC/MS	Gas chromatogram/mass spectrometry
gpm	gallons per minute
HHRA	Human Health Risk Assessment
mg/kg	milligram per kilogram
mg/kg_{oc}	milligram per kilogram of organic carbon
ug/kg	microgram per kilogram
ug/L	microgram per liter
NAPL	Non-aqueous phase liquid
NCDC	National climatic data center
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
NYSDEC	New York State Department of Environmental Conservation
the "Order"	Order on Consent Number A5-0532-1205
ORP	Oxidation-reduction potential
PCBs	Polychlorinated biphenyls
pH	Hydrogen ion activity
PPL	Priority pollutant list
ppm	parts per million
RAGS	Risk Assessment Guidance for Superfund
RI	Remedial investigation
SCG	Standards, criteria, and guidance
SCO	6NYCRR Part 375 soil cleanup objective
the "Site"	Tee-Bird Country Club - North Course
SSC	NYSDEC sediment screening criteria
SVOC	Semi-volatile organic compound
TIC	Tentatively identified compound
TOC	Total organic carbon
VOC	Volatile organic compound
York	York Analytical Laboratories, Inc. in Stratford, CT

1.0 INTRODUCTION

Alpha Geoscience (Alpha) has prepared this Remedial Investigation Report (RI Report) on behalf of Tee Bird Country Club, Inc. (Tee Bird) for a portion of the Tee Bird Country Club-North Course, on Reservoir Road, Town of Moreau, Saratoga County, New York. The country club is located on the south side of Reservoir Road, approximately one mile west of the Hudson River. Figure 1 is a map showing the location of the property and the Site.

The "Site" consists of the country club parking lot area that had been impacted by polychlorinated biphenyls (PCBs) applied to the surface of the parking lot for dust control circa 1977 before the parking lot was paved in 1984. The Site is being investigated in accordance with Order on Consent Number A5-0532-1205 between Tee-Bird and the New York State Department of Environmental Conservation (NYSDEC). The NYSDEC Site number for the Site is 546028. Figure 2 is a Site map showing the country club parking lot and nearby areas.

1.1 Regulatory Status

In the early 1980's soil sampling by the NYSDEC detected the presence of PCBs in the parking lot at the Site, which was unpaved at the time. The NYSDEC entered into an agreement, dated July 2, 1984, with Tee Bird in which Tee Bird agreed to pave the parking lot as a final remedial measure to address the presence of PCBs. NYSDEC personnel conducted periodic inspections of the paved parking area and collected and analyzed soil samples adjacent to the parking area in 1983, 1984, 1989, and 1990. In 1991, as the site remained a Class 3 site, Tee-Bird extended the paving with the NYSDEC's consent. No further investigation or remedial measures were required as a result of the inspections or soil sampling.

The NYSDEC issued a letter dated June 27, 2005 indicating that it was reclassifying the Site from a Class 3 Inactive Hazardous Waste Site to a Class 2 Site and that a Remedial Investigation and Feasibility Study (RI/FS) is required. Tee Bird and the NYSDEC entered into Order on Consent and Administrative Settlement #A5-0532-1205 (the "Order"). This remedial investigation (RI) has been conducted in accordance with the Order and the September 26, 2008 Remedial Investigation and Feasibility Study Work Plan. The NYSDEC approved the work plan, with modifications, in a letter dated June 8, 2009.

1.2 Remedial Investigation Objectives

The objective of the RI is to define the lateral and vertical extent of impacts of potential contaminants of concern (COCs) on soil, ground water, and sediment. Tasks were conducted to collect sufficient data of adequate quality to define the nature and extent of contamination, identify potential migration pathways, and identify potential receptors. The tasks performed to achieve the RI objectives included collecting samples of soil beneath the asphalt cap, collecting soil samples along the periphery of the cap, installing ground water monitoring wells, collecting ground water samples, sampling the existing water supply well, and collecting samples of

sediment from the pond east of the parking lot. The data from these tasks provide a basis for a feasibility study that will include identification of feasible, additional remedial alternatives that may be necessary to be implemented as an additional or enhanced permanent remedy for the Site.

1.3 Previous Investigations

The samples collected by the NYSDEC in 1983 through 1990 are shown on Figure 3 with isoconcentration contours depicting the concentration of PCBs in the soil. The isoconcentration contours suggest that the lateral extent of PCBs at the Site is relatively limited beyond the asphalt cap. The sample data on the tables shown on Figure 3 indicate that PCB concentrations increase with depth at some locations and decrease with depth at other locations. The samples collected by the NYSDEC in 1983 and 1984 consisted of grab samples. The NYSDEC's samples collected in 1989 and 1990 were prepared by compositing aliquots from two to four locations. Concentrations detected in composite samples do not represent the concentration potentially present in an individual aliquot. Both the grab samples and composite samples were used to depict the isoconcentration lines on Figure 3; therefore, the isoconcentration lines are generalized and were used as a guide for the more detailed remedial investigation.

Alpha conducted a Phase I Environmental Site Assessment (ESA) of the entire property in May 2006. In addition to the presence of PCBs in soils at or near the parking lot, petroleum storage tanks, and stored chemicals (fertilizers, pesticides, and paint) were identified in the vicinity of the maintenance building. These materials are used during the course of normal operations. No indications of significant spills or releases were observed near the maintenance building during the Phase I ESA.

2.0 SITE BACKGROUND

The Site consists of the Country Club parking lot and adjacent areas that may be impacted by PCBs applied to the surface of the parking lot for dust control circa 1977. A remedy approved by the NYSDEC, consisting of an asphalt cap placed over the parking lot, was implemented in 1984 in accordance with an agreement between Tee Bird and the NYSDEC.

Alpha personnel interviewed Dan Irwin, the former owner of the Tee Bird Country Club on April 4, 2006 and May 3, 2006. Mr. Irwin indicated that the property was purchased in 1960 from Richard Huxton. At the time, the property was an inactive farm, with a farm house. The pond northeast of the clubhouse was reportedly present at that time. The club house and golf course were opened in 1962 as a nine-hole course. Subsequently, the golf course was expanded to eighteen holes. Mr. Irwin operated the course for many years and currently leases the areas of the golf course where the parking lot is located to the present operator.

2.1 Existing Conditions

The country club consists of a public, 18-hole championship golf course, with a club house building, a maintenance building, a small open-air food stand, and a cart shed. The buildings are situated around paved and unpaved parking areas located in the north-central part of the property, near Reservoir Road. The paved parking area between the clubhouse and Reservoir Road (Figure 2) constitutes the capped PCB area. The cap consists of approximately 18-inches of gravel sub-base covered by asphalt. Sand fill and natural clay exists immediately beneath the gravel sub-base.

2.2 Adjacent Areas

The Tee Bird property and the subject Site are shown on Figure 1. The area to the north of the Site (i.e., north of Reservoir Road) is wooded. The area to the west of the Site is rural with several residences located along Burt Road. These residences reportedly obtain their water supplies from shallow well points. The area to the south of the Site contains wooded areas, farm fields, and a small cemetery. There are several residences along New York Route 197 approximately ½- to ¾-miles south of the Site. These residences reportedly use deep wells (i.e., drilled bedrock wells) for their water supplies. The area to the east of the Site contains farm fields and wooded areas. There are a few residences located along Reservoir Road approximately ¼- to ½-mile east of the Site entrance. These residences reportedly are served by the Fort Edward municipal water supply.

2.3 Physical Setting

The property is situated in the Hudson River Valley, which is oriented north to south between the Adirondack Mountains to the west and the Taconic and Green Mountains to the east. The property generally slopes gently to the southeast. Steeper slopes occur in several gullies, through which small, intermittent streams drain the property toward the southeast. These small streams join to the southeast of the property, forming the North Branch of the Snook Kill, which subsequently flows into the Snook Kill and then eastward to the Hudson River.

There is a NYSDEC mapped wetland along the stream that drains the pond. The wetland begins approximately 750 feet downstream of the pond. The wetland is identified as number “F-7” (NYSDEC, 1999c) and is shown on Figure 1.

2.3.1 Topography and Surface Drainage Features

Elevations on the property range from approximately 280 feet above mean sea level (amsl) at the northwest corner of the property, along Burt Road, to approximately 200 feet amsl in the ravines at the southeast corner of the property (Figure 1). The parking lot generally slopes gently to the southeast towards the pond. The man made pond is approximately 0.4 acres and is created behind the cart path berm to the southeast. There is an approximate 15 feet difference in

elevation between the water level in the pond and the water level at the outflow to the stream at the bottom of the ravine on the downstream side of the berm.

The on-Site streams are designated as Class "C(T)" which is defined as a waterway for which the existing or expected best usage is for supporting fisheries and is suitable for non-contact activities (NYSDEC, 2007). The "T" standard designation indicates that the stream may support a trout population. No fisheries are located along the pond outflow stream.

2.3.2 Soil Types

The soil at and near the Site consists of the Rhinebeck and Hudson silt loam series (USDA 2006). Both the Rhinebeck and Hudson silt loams are derived from silty and clayey glaciolacustrine deposits. The Rhinebeck silt loam is a somewhat poorly drained soil with slopes of 0 to 3 percent. The Hudson silt loam consists of moderately well drained soil with slopes of 15 to 25 percent, exemplified by the ravine southeast of the parking lot.

2.3.3 Climate and Meteorology

The nearest continuously run, active climate station with a record of at least 30 years is located at the Glens Falls airport (NOAA/NWS Cooperative Climate Station No. 303294) and is approximately 5.3 miles from the Site. The average mean annual precipitation (1971 – 2000) at the Glens Falls Airport is 38.57 inches and the mean annual temperature (1971 – 2000) is 45.4° F (NCDC, 2002).

2.3.4 Regional Geology

The Site is underlain by Ordovician-aged Canajoharie shale according to geologic maps published by the New York State Geologic Survey. Bedrock in the area generally occurs at depths of 50 feet or more. The unconsolidated material above bedrock consists of glaciolacustrine deposits, which primarily consist of silt and clay, with a surficial veneer of sand in some areas.

2.3.5 Hydrogeology and Ground Water Usage

Two water supply wells are present on the property. One well is located near the northeast corner of the clubhouse (the Clubhouse Well) and the other is located near the foundation of a former mobile home (the Trailer Well), north of the pond (Figure 2). Both wells have steel casing extending through the overburden and are drilled into bedrock. The Clubhouse Well is reportedly approximately 243 feet deep with 50 feet of casing. The clubhouse maintains a connection to the Village of Fort Edward water supply, but continues to use the well for water instead of Village water. The Trailer Well adjacent to the mobile home foundation was drilled in

1974 and is approximately 240 feet deep. The Trailer Well reportedly yields about three gallons per minute (gpm) of water with a strong sulfur odor and is not currently used.

3.0 REMEDIAL INVESTIGATION AND SAMPLING ACTIVITIES

This section describes the tasks that were completed during the RI. These tasks included shallow and deep soil borings, soil sampling and analyses, well installation, ground water sampling and analyses, and sediment sampling and analyses from the pond and stream. Table 1 summarizes the identities and analyses chosen for each of the remedial investigation samples that were submitted for laboratory analysis. Sample locations are show on Figure 4.

3.1 Shallow Soil Sampling and Analysis

The natural grade at the Site has not been altered since the PCB contaminated waste oil was sprayed on the driveway and parking area in 1977, according to Mr. Irwin, except for the addition of sub-base gravel and pavement to the parking area as part of the 1984 remedy. No fill reportedly has been placed on areas adjacent to the parking lot or on the cart paths.

Soil core samples were collected beneath the existing asphalt cap at ten locations (SS-1 through SS-10) and adjacent to the asphalt cap at twenty locations (SS-11 through SS-30). The sampling locations are shown on Figure 4 and were recorded with a hand-held GPS unit that has a reported accuracy of +/- 15 feet.

A direct push drilling rig equipped with a macrocore sampler was used to obtain the soil core samples. The macrocore sampler consisted of a five-foot long two-inch diameter stainless steel tube with a clear, acetate liner (sleeve) that is retrieved and cut lengthwise to allow inspection and sample collection by the on-Site hydrogeologist or geologist. Geologic logs for each soil core are included in Appendix A.

3.1.1 Soil Samples Beneath the Asphalt Cap

A total of ten soil cores were collected from beneath the asphalt cap (SS-1 through SS-10 on Figure 4). Samples from three depths (0 to 1 foot, 1 to 2 feet, and 2 to 3 feet) from each core were submitted for analysis. Sample depths for samples beneath the asphalt cap are relative to the bottom of the gravel sub-base beneath the pavement.

Four of the soil cores (SS-1 through SS-4) were collected on August 19, 2009 from the area of the greatest suspected contamination beneath the asphalt cap (based on the NYSDEC's 1984 to 1990 sample results). The samples from these initial cores were submitted for analysis to determine the "contaminants of concern" (COCs) for which all other Site samples would be analyzed. The sample from SS-2 from 2 to 3 feet was divided into two samples: SS-2 (2-2.5 ft) is representative of the bottom of a sand layer and sample SS-2 (2.5-3 ft) is representative of the top of clay layer at that location.

Twelve soil samples from soil cores SS-1 through SS-4 were analyzed by York Analytical Laboratories, Inc. (York) in Stratford, Connecticut for PCBs by EPA Method 8082, volatile organic compounds (VOCs) plus ten tentatively identified compounds (TICs) by EPA Method 8260B, semi-volatile organic compounds (SVOCs) plus twenty TICs by EPA Method 8270C, and eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by USEPA Methods 6010 and 7470. The NYSDEC submitted split samples of nine selected samples to Adirondack Environmental Services (Adirondack) for analysis of PCBs and pesticides. Sample SS-2 (2.5-3), which represents a clay layer, was submitted to York for analysis of PCBs only, with the NYSDEC's approval.

The analytical results for the initial thirteen samples were compared to Part 375 soil clean up objectives (SCOs) to determine the Site specific COCs. As discussed in Section 4.2.1, only PCBs were found in the initial samples analyzed by York and Adirondack at concentrations that exceeded the NYSDEC's SCOs; consequently, the remaining samples collected during the RI were analyzed only for PCBs.

The remaining soil cores beneath the asphalt cap (SS-5 through SS-10) were collected on December 14, 2009. A total of 18 samples (three from each of the six soil cores) were submitted to York for analysis of PCBs by EPA Method 8082.

3.1.2 Soil Samples Beyond the Limits of the Asphalt Cap

Soil samples were collected and analyzed to evaluate the lateral and vertical extent of migration beyond the limit of the asphalt cap. The depths for soil samples collected beyond the limit of the asphalt cap are relative to the existing ground surface or the base of vegetation, if present.

Soil samples were collected on December 14 and 15, 2009 from depths of approximately 0 to 3 feet bgs from locations SS-11 to SS-30 (Figure 4). An attempt was made to submit three samples from each core (0 to 1 foot, 1 to 2 feet, and 2 to 3 feet); however, samples to three feet could not be obtained at some locations (SS-15, SS-16, SS-18, SS-19, SS-20, and SS-24) because of poor recovery. A total of 59 samples from 20 locations were submitted to York for analysis of PCBs by EPA Method 8082. Selected samples were also analyzed for total organic carbon (TOC). The soil samples from locations SS-11 through SS-30 and their analyses are summarized in Table 1.

Samples were collected on June 30, 2010 from 0 to 2 inches bgs from the three locations (SS-21A, SS-23A, and SS-25A) adjacent to where the maximum concentrations of PCBs were detected in the 0 to 1 foot bgs interval (SS-21, SS-23, and SS-25; see Section 4.2.2). The three surface samples were submitted to York for analysis of PCBs by EPA Method 8082. The results of these samples are used in the human health exposure assessment (Section 6.0).

3.2 Soil Borings and Monitoring Well Installations

Four deep soil borings (SB-1 through SB-4) were advanced beneath the asphalt cap. The purpose of these borings was to evaluate the deep soil at the site and to install ground water monitoring wells. The locations of the soil borings and monitoring wells are shown on Figure 4. The soil borings were advanced using a direct-push drilling rig equipped with a macrocore sampler (see Section 3.1). The soil borings were sampled continuously to a total depth of 20 feet (SB-1), 25 feet (SB-2 and SB-3), and 15 feet (SB-4). Bedrock was not encountered in any of the four borings. Geologic logs are included in Appendix A.

Soil samples representing the upper four to six feet in the borings were submitted to York for analysis of PCBs via EPA Method 8082. One soil sample was submitted to York for analysis of PCBs from each of soil borings SB-1 (5 to 6 ft), SB-2 (4 to 5 ft), and SB-3 (4 to 5 ft) and two samples were submitted from soil boring SB-4 (4 to 5 ft and 5 to 6 ft) to evaluate the quality of the "deep" soil at the Site.

Monitoring wells (MW-1 through MW-3) were installed in soil borings SB-1 to SB-3. The purpose of the monitoring wells was to evaluate the ground water flow direction and horizontal gradient, and the potential impacts to ground water quality at the Site. The monitoring wells were constructed of two-inch diameter, flush-threaded, schedule 40, PVC screen and riser. A 15 ft length of 10-slot screen was used for each well. The screen was placed so that the top of the screen extends above the water table. Monitoring well construction diagrams are included in Appendix B.

The wells were completed by placing a clean, Grade 1, filter sand pack approximately 0.5 feet below the base of the screen and extending approximately 1.0 feet above the top of the screen. A bentonite seal with a minimum thickness of two feet was installed above the sand pack. A flush-mounted, protective casing was cemented over each well to prevent unauthorized access and to provide protection for the wells from accidental impact.

Dedicated polyethylene bailers were used to develop each newly-installed monitoring well. The purpose of well development was to remove residual formational silts and clays, thereby reducing turbidity during sampling that could potentially interfere with chemical analysis, to increase the hydraulic communication between the saturated zone and the well, and to improve the well yield.

3.2.1 Surveying

The locations of monitoring wells MW-1, MW-2 and MW-3, and soil boring SB-4 were recorded with a hand-held GPS unit. The elevations of the newly installed monitoring wells and the pond gauging location were surveyed relative to an arbitrary Site datum. The monitoring well elevations include a measurement of the ground surface adjacent to the well and the elevation at the top of the PVC well casing (i.e., reference elevation). The surface water gauging location was marked on the sheet pile near the pond outfall.

3.2.2 Water Level Measurements

Water level measurements in the monitoring wells and surface water gauging station were measured using an electric water level indicator to determine the depth of water to the nearest 0.01 foot at each well location. The depth to water data were converted to relative elevations using the surveyed well elevations (Table 3). The water level measuring equipment was decontaminated between measurements to avoid potential cross contamination.

3.3 Ground Water Sampling and Analysis

One ground water sample was collected from each of the three monitoring wells on June 30, 2010. The ground water samples were collected using the USEPA's Low-Flow sampling protocol (USEPA, 1996) with a peristaltic pump with new polyethylene tubing. Field parameters, including dissolved oxygen (DO), oxidation-reduction potential (ORP), hydrogen ion activity (pH), temperature, specific conductivity, and turbidity, were monitored using a multi-parameter meter with a flow-through cell connected directly to the pump discharge. The pumping rate was controlled using a variable speed drive controller to maintain drawdown in the monitoring well to less than 0.3 feet. Purging was considered complete when the field parameters remained stable during three consecutive measurements recorded at three- to five-minute intervals.

One ground water sample was collected on June 30, 2010 from the clubhouse water supply well via a tap located prior to chlorination. It is Alpha's opinion that the clubhouse water use and purging were sufficient to remove standing water from the plumbing system because the clubhouse was open and the water system was in use. The water was allowed to run for approximately 10 minutes to purge standing water from the plumbing; consequently, the objective to collect a sample representative of the water produced by the clubhouse well was met.

The water samples were placed in laboratory-supplied sample containers and placed in a cooler with ice. The four ground water samples were submitted to York for analysis of PCBs.

3.4 Sediment Sampling and Analysis

Sediment samples were collected on June 30, 2010 from three locations in the nearby pond and one upstream and one downstream location. The sampling locations are shown on Figure 6.

A sediment core sampler was used to collect samples from three locations in the pond from rowboat (SED-2, SED-3, and SED-4). Depths of the pond sediment samples are relative to the bottom of the pond at each location. An attempt was made to collect the sediment core samples to a depth of three feet; however, a dense layer of clayey silt and fine sand prevented driving the sampler by hand beyond a depth of two feet. Samples from 0 feet to 0.5 feet, 0.5 feet to 1.0 feet; and 1.0 feet to 1.5 feet were submitted from locations SED-2 and SED-3 and from 0 feet to 0.5 feet and 0.5 feet to 1.5 feet from SED-4. The deepest samples from each location (SED-2 [1.0 to

1.5 ft], SED-3 [1.0 to 1.5 ft] and SED-4 [0.5 to 1.5 ft]) are representative of the clayey silt. The remaining sediment samples from the pond consisted of dark, organic clay and muck. The NYSDEC agreed that this modification to the RI Work Plan was appropriate and that the shallow samples from each location are representative of recent deposition.

The upstream (SED-1) and downstream (SED-5) samples from the stream were collected from a depth of zero to six inches using a hand trowel. Deeper samples were not considered necessary due to the lower sedimentation rate in the stream.

The sediment samples were placed in a cooler and transferred to the laboratory following chain-of-custody procedures. The samples were analyzed by York for the PCBs and total organic carbon (TOC).

3.5 Investigation-Derived Waste

Soils with NAPL and/or grossly contaminated media were not generated during the investigation. Generation of soil cuttings was limited by the use of GeoProbe drill rig to collect soil samples and install monitoring wells. Soil cuttings not placed in sample jars for laboratory analysis were placed back in the soil borings and covered with bentonite and top soil or cold-patch asphalt. Monitoring well development and purge water was spread on the parking lot surface and allowed to evaporate. No PCBs were detected in ground water samples from the monitoring wells.

4.0 RESULTS

4.1 Site Geology and Hydrogeology

The soil encountered at the Site during the RI consist of up to approximately two feet of top soil and/or fill overlying brown-gray varved clay. The fill consists primarily of a fine to medium-coarse sand with trace gravel and is thickest (four feet) at SS-9 at the north end of the parking lot.

The varved clay was encountered at most of the soil sampling locations and consisted of alternating brown and gray layers of dense clay separated by silt and fine partings. The silt and fine sand partings generally increased in thickness and frequency with depth below approximately five feet bgs, as noted on the boring logs for SB-1 through SB-4 (Appendix A). A 0.25 foot (SB-1) to 6.5 feet (SB-3) thick silty-fine sand layer was encountered at a depth starting between 12 to 15 feet bgs in the deep soil borings. The varved clay and silty fine sand encountered on-Site is consistent with the regional surficial geology (Section 2.3.4) and soil types (Section 2.3.2) noted from published data, which indicated clay and silt deposited in a glaciolacustrine environment.

Ground Water Flow Direction

Figure 5 shows the interpretation of the water table elevation and ground water flow direction beneath the southern portion of the parking lot based on water levels measured on June 30, 2010 (Table 2). As shown on Figure 5, ground water flow beneath the parking lot is to the southeast. Ground water appears to be locally recharged from the pond. The pond is apparently man made and created behind the cart path embankment on the southeast end and it would be expected that ground water would be recharged upstream of the embankment and discharged to the stream downstream of the embankment.

4.2 Nature and Extent of Contaminants

Soil, ground water, drinking water, and pond and stream sediment samples were collected during the RI and analyzed by York. Tables 3 through 7 summarize the detected compounds for each media compared to media-appropriate standards, criteria, and guidelines (SCGs).

4.2.1 Source Area Data

Waste oil containing PCBs was applied to the parking lot for dust control circa 1977. Historic sampling conducted by the NYSDEC indicates that the highest concentrations of PCBs are found on the southern portion of the parking lot (Figure 3). Four soil cores (SS-1 through SS-4) were advanced in this area and samples from these cores were analyzed for PCBs, VOCs, SVOCs, and metals. The analytical results for these initial source area samples from SS-1 through SS-4 are summarized on Table 3. The NYSDEC submitted split samples for analysis of PCBs and organochlorine pesticides. The NYSDEC's analytical results are summarized on Table 4.

Some staining and apparent PCB oil odors were noted in soil samples beneath the asphalt cap (Appendix A). No sheens or indications of non-aqueous phase liquids (NAPL) were noted during the RI.

The maximum concentrations of PCBs detected at all locations were found below the asphalt cap in the 0 to 1 foot interval (544 ppm at SS-1, 39.4 ppm at SS-2, 553 ppm at SS-3, and 0.15 ppm at SS-4). Concentrations of PCBs decrease with depth at each location to no more than 1.18 ppm at SS-2 in the 1 to 2 feet interval (SS-2) and 0.04 ppm in the 2 to 3 feet interval (SS-2 and SS-3). The pattern of decreasing PCB concentrations with depth at each location is consistent with surface application of waste oils used for dust control. The reported concentrations of PCBs in the NYSDEC's split sample results (Table 4) are consistent with the analytical results for samples submitted by Alpha.

Trace levels of VOCs were detected at concentrations less than the unrestricted use SCOs. Acetone and methylene chloride were detected at trace levels in all samples and 2-butanone was detected in sample SS-1 (1 to 2 feet bgs). Acetone, methylene chloride, and 2-butanone are common laboratory contaminants used during the extraction process. Trace levels of the petroleum-related hydrocarbons toluene, ethylbenzene, and xylenes were detected in the samples from SS-1, SS-2, and SS-3, which are located in the central portion of the parking lot. The VOC tentatively identified compounds (TICs) are compounds commonly associated with gasoline and were also only detected at locations

SS-1 and SS-2. The presence of trace levels of petroleum-related VOCs is not unexpected in a vehicle parking lot and is not indicative of a spill or contamination.

No target SVOCs were detected in any of the samples. The SVOC TICs reported include PCB isomers. No metals were detected at concentrations that exceed the unrestricted use SCOs.

The pesticides aldrin and heptachlor epoxide were tentatively identified in the NYSDEC's split samples that also contained PCBs. The USEPA SW-846 Method 8081 procedures state that the presence of PCBs in a sample may interfere with the analysis and identification of organochlorine pesticides such as aldrin and heptachlor epoxide. Re-analysis of the samples by the NYDEC's contracted lab (Adirondack) using gas chromatogram/mass spectral (GC/MS) methods confirmed that pesticides were not present in the samples. Based on the analytical results by York and Adirondack, PCBs are the only contaminant of concern for the Site.

4.2.2 Soil Data

A summary of analytical results for PCBs in shallow soil core samples and deep soil boring samples is included on Table 5. The distribution of PCBs in soils at zero to one foot, one to two feet, and two to three feet is shown on Figure 6, Figure 7, and Figure 8, respectively.

Beneath the Asphalt Cap

Concentrations of PCBs in soils beneath the asphalt cap (SS-1 through SS-10) ranged up to 553 mg/kg (SS-3) in the samples from the 0 to 1-ft depth interval. The maximum concentration at each location where PCBs were detected occurred in the shallowest sample and decreased with depth. Concentrations of PCBs exceeded the NYSDEC's restricted use-commercial SCO in two samples in the 1 to 2 feet interval (1.18 mg/kg at SS-2 and 3.07 mg/kg at SS-5) and one sample below 2 feet (1.01 mg/kg at SB-4 [4-5 ft]). The pattern of decreasing PCB concentrations with depth is consistent with surface application of waste oils used for dust control.

Sample Locations along the Edge of the Asphalt Cap

Concentrations of PCBs in soils along the edge of the asphalt cap (SS-19, SS-21, SS-24, SS-25, and SS-26) ranged up to 36.4 mg/kg at SS-21 (1-2 ft). The maximum concentration at each location was detected in the shallowest sample and decreased with depth, except at location SS-21. Concentrations of PCBs exceeded the NYSDEC's restricted use-commercial SCO at two locations (up to 36.4 mg/kg at SS-21 and up to 10.2 mg/kg at SS-25). The pattern of decreasing PCB concentrations with depth at each location is consistent with surface application of waste oils used for dust control.

No PCBs were detected in the surface soil sample SS-25A (0-2") that was collected from near SS-25. PCBs were detected in the surface soil sample SS-21A (0-2") that was collected from near SS-21, at a concentration of 0.364 mg/kg, which exceeds the NYSDEC's unrestricted use SCO (0.1 mg/kg), but is less than the restricted use-commercial SCO (1 mg/kg). The samples were collected at SS-21A and SS-25A to assess potential human health exposure levels.

Unpaved Portion of Parking Lot Sample Locations

No PCBs were detected above the NYSDEC's unrestricted use SCO in soil samples from soil cores advanced on the unpaved portion of the parking lot (SS-18, SS-20, SS-27, and SS-28). PCBs were detected one sample (0.05 mg/kg at SS-28 [1-2 ft]) on the south end of the parking lot near the club house. The data indicate that significant transport or spreading of PCBs from the paved portion of the parking lot to the unpaved portion has not occurred.

Cart Paths Sample Locations

No PCBs were detected in any of the soil samples from soil cores advanced along the cart paths (SS-13 through SS-17, SS-29, and SS-30). The data indicate that transport or spreading of PCBs from the parking lot to the cart paths has not occurred.

Golf Course Grounds Sample Locations

PCBs were detected two samples (0.05 mg/kg at SS-12 [0-1 ft] and 0.12 mg/kg at SS-23 [0-1 ft]) in soil samples from soil cores advanced on the golf course grounds (SS-11, SS-12, SS-22, and SS-23). This indicates significant transport or spreading of PCBs from the parking lot to the golf course grounds did not occur. The concentration of PCBs at SS-23 (0-1 ft) is slightly above the NYSDEC's unrestricted use SCO (0.1 mg/kg), but less than the restricted use-commercial SCO (1 mg/kg). The concentration of PCBs at SS-12 (0-1 ft) is less than the NYSDEC's unrestricted SCO. No PCBs were detected in the surface soil sample (SS-23A [0-2"]) that was collected from near SS-23 to assess potential human health exposure levels.

Summary

The soil analytical data show that concentrations of PCBs above the NYSDEC's SCO's are limited to beneath or immediately adjacent to the asphalt cap. The depth of impacts is generally limited to one foot below the base of the asphalt cap, with two notable exceptions:

- beneath the south central portion of the parking lot, where concentrations range up to 3.07 mg/kg in the 2-3 ft interval, and
- along the edge of the asphalt on the driveway to the former trailer foundation area, where PCBs were found at 30.4 mg/kg in the 2-3 ft interval.

The distribution pattern and decreasing concentration with depth is consistent with surface application of waste oils used for dust control. The analytical data for samples collected along the cart paths, on the golf course, and on unpaved portions of the parking lot indicate that significant transport or spreading of PCBs from the paved portion of the parking, where the oil was formerly used for dust control, has not occurred.

4.2.3 Ground Water Data

The analytical results for the water samples collected from the three ground water monitoring wells (MW-1 through MW-3) and the drinking water supply well (Clubhouse Well) are summarized on Table 6. No PCBs were detected in any of the water samples. These results indicate that the PCBs found in Site soils do not impact ground water quality.

4.2.4 Sediment Data

The analytical results for the sediment samples are summarized on Table 7. The results are compared to the NYSDEC's sediment screening criteria for Benthic Aquatic Toxicity (acute and chronic) and Wildlife Bioaccumulation (NYSDEC, 1999b). The human health bioaccumulation criteria were not used because the pond is not used for fishing or recreation. The sediment screening criteria (SSC) for non-polar organic contaminants, such as PCBs, are expressed in terms of mass of contaminant in milligrams per kilogram of organic carbon (mg/kg_{oc}).

No PCBs were detected in the sediment samples collected upstream (SED-1) and downstream (SED-5) of the pond. PCBs were only detected in one sample (SED-4 [0-0.5 ft]) at a concentration of 0.0448 mg/kg. Based on a total organic carbon content of 25,000 mg/kg 0.0448 mg/kg is equal to 1.79 mg/kg_{oc} and is less than the benthic aquatic acute (2,760 mg/kg_{oc}) and chronic (19.3 mg/kg_{oc}) toxicity SSC, but slightly above the wildlife bioaccumulation SSC (1.4 mg/kg_{oc}). SED-4 is on the south (downstream) end of the pond near the culvert (Figure 4). PCBs were not detected in any of the remaining sediment samples in the pond indicating that the lateral and vertical extent of PCBs in sediment is limited.

5.0 FATE AND TRANSPORT OF CONTAMINANTS

This section describes fate and transport processes influencing the behavior of the contaminants detected at the Site. The discussion emphasizes the processes that are essential in evaluating potential exposure of human and environmental receptors to the Site contaminants. The following items are presented in this section:

- General description of fate and transport processes occurring in soil, ground water, surface water, sediment, and air systems;
- Identification and description of properties of contaminants detected at the Site above the New York State Standards, Criteria, and Guidelines (SCGs); and
- Medium-specific and contaminant-specific evaluation of fate and transport occurring at the Site.

Contaminants identified at the Site in exceedance of SCGs include PCBs. Levels of PCBs above SCGs were detected in soil and sediment and are discussed in Section 4.2 of this report.

5.1 Transport Processes – Subsurface Environment

Three processes that contribute to transport of PCBs in the subsurface environment are mass partitioning, advection, and dispersion. These processes are discussed below.

Advection and Dispersion

The primary transport mechanisms for contaminants dissolved in ground water or partitioned to soil vapor are advection and dispersion. Advection is the movement of contaminants with soil vapor or dissolved in ground water. Dispersion refers to contaminants spreading due to the presence of non-uniformities in the flow field. Dispersion results in a general widening of the plume, as well as smearing the plume boundaries. No PCBs were detected in ground water and impacts to soil were limited to above the water table; therefore the ground water transport process is considered unimportant at the Site. The low volatility of PCBs limits the soil vapor phase migration pathway.

Contaminant transport in the subsurface can also occur as movement of nonaqueous phase liquid (NAPL) in both the vadose zone and saturated zone. No indications of NAPL were observed during the RI; therefore, advection of a free-phase component is not considered important at the Site.

Mass Partitioning

Mass partitioning is a process by which contaminants move between different environmental media or phases. For example, contaminants dissolved in ground water may sorb onto soil particles or volatilize into the soil gas. The process may involve mass transfer in any direction between any of the environmental media. The net result of mass partitioning is the distribution of the contaminant between all phases that remain in physical contact. Typically, mass partitioning acts to inhibit the migration of contaminants in ground water or soil gas by immobilizing a part of the mass in the soil matrix (retardation). However, the process maybe reversed, resulting in the slow release of the sorbed contamination into the ground water or soil gas. PCBs partition primarily to soil particles because of their low solubility, low volatility, and high organic carbon to water partitioning coefficient.

The unconfined ground water table at the Site occurs seven to ten feet bgs in interbedded glaciolacustrine silts and clays. A 0.5 to 3.0 feet thick layer of fine sand overlies the clay across most of the Site. Soil impacts at the Site were found only in the unsaturated, fine sand layer above approximately three feet. In the unsaturated zone, the total mass of a contaminant is partitioned between the dissolved phase (soil moisture), the gas phase (soil gas), and the solid phase (soil matrix). Under equilibrium conditions, each phase contains a fraction of the total contaminant mass present in the system. The relative mass fractions are determined by the properties of each contaminant and by the nature of the soil matrix. Equilibrium conditions may be disturbed by phenomena such as migration of the more or less contaminated water or soil gas into an area, or removal of contaminant mass from one of the media through degradation processes or gravity flow. The concentration gradients created by these circumstances result in the occurrence of mass transfer between the media.

The PCBs in soil are generally limited to the upper foot beneath the asphalt cap. No indications of NAPL were observed and no PCBs were detected in ground water. These observations and the physical properties of PCBs (low solubility, low volatility, and affinity to absorb to organic matter in soil) indicate that mass partitioning is important process limiting the mobility of PCBs at the site.

5.2 Transport Processes – Surface and Near Surface Environment

Advection can also occur when a contaminant sorbs to a solid particle, such as colloidal material. The contaminant mass sorbed onto the soil matrix is essentially immobile. The exception is the contaminants in the topmost soil layer that are not beneath the asphalt cap, which can be transported by processes (such as wind or surface runoff) capable of moving soil particles. However, since most of the Site area is paved, and because concentrations of PCBs in surface soils (0 to 2 inches) are below the NYSDEC's SCOs, this is not considered a significant transport pathway for the Site.

Most of the PCB-impacted soil is beneath the asphalt cap. Concentrations of PCBs in surface soil (0 to 2 inches) outside of the asphalt cap are below the NYSDEC's restricted use-commercial SCO. Therefore, erosion and transport of surface soil by runoff is considered unimportant at the Site. This is supported by the limited trace concentration extent in sediment and the limited lateral extent of PCBs in soils outside of the asphalt cap.

Transport of contaminants dissolved in the soil moisture in the unsaturated zone is generally limited as a result of very low flow rates in the absence of full saturation. The only significant mechanism may be a gravity-driven, downward flow during wet-weather periods. The shallow vertical extent of impacts since 1977 indicate that downward flow has not been a significant transport mechanism at the Site; consequently, downward flow is not expected to be an important mechanism of contamination in the future at this Site. The presence of the clay layer further limits downward migration. The limited rate of downward flow as a transport mechanism at the Site is supported by the non-detected (SB-1, SB-2, and SB-3) and trace concentrations of PCBs in "deep" soil samples (SB-4) and non-detected concentrations in Site ground water.

5.3 Transport Processes – Surface Water and Sediments

Contaminant transport processes for surface water and sediment are essentially the same as those described in Section 5.1 for the subsurface environment (advection, dispersion, and mass partitioning). There is, however, a substantial difference in the relative rates of the transport mechanisms. Flow velocities in surface water are typically much higher than in the ground water; therefore, advection potentially plays a much more significant role. Surface water transport mechanisms at the Site are not considered an important transport process based on the limited extent found, trace concentrations in sediment (Section 4.2.5) and low solubility of PCBs.

5.4 Contaminant Mass Destruction Processes

Contaminant mass destruction can occur naturally by exposure to sunlight or the atmosphere, and by microbial or abiotic degradation. Most contaminant mass at the Site is not exposed to sunlight or the atmosphere; therefore, mass destruction processes within the water-bearing zone, which rely on the presence of air or exposure to sunlight (such as photolysis), are of little importance and will not be discussed. The exception is contaminant mass at the ground surface. The amount of contaminant mass at, or near, ground surface, however, is typically low relative to the contaminant mass in the subsurface.

The most significant contaminant mass destruction process that takes place in the subsurface environment is microbial degradation. The microbial degradation processes that act on organic contaminants in ground water systems are: biological oxidation, reductive dechlorination, and cometabolic degradation. There are also abiotic mechanisms that result in the destruction or transformation of the mass of organic contaminants, such as hydrolysis and photolysis. However, rates of abiotic reactions are relatively low under the temperature and light conditions that normally prevail in subsurface environments. The importance of these processes in the overall rate of mass destruction is typically low. PCBs in soil and sediment are highly resistant to both microbial and abiotic degradation. Destruction mechanisms are not considered important at this Site for all of the above reasons.

5.5 Summary of Fate and Transport Processes

PCBs are relatively inert and immobile in the environment. PCBs are typically confined to soil and sediment particles. The mode of release (i.e. surface application for dust control) Site conditions, and immobile nature of PCBs has limited the migration of PCBs at the Site as evidenced by ground water and deep soil analytical results. The extent of impacts is limited to the unsaturated zone beneath and immediately adjacent to the asphalt cap.

6.0 QUALITATIVE HUMAN HEALTH RISK ASSESSMENT

The purpose of the qualitative Human Health Risk Assessment (HHRA) is to identify pathways through which people can be exposed under current and potential future use scenarios. The exposure assessment uses the current conditions at the Site and surrounding area to determine existing or potential exposure scenarios and exposure concentrations. Future uses of the Site and surrounding area are also considered.

This qualitative HHRA follows the general format and procedures set forth in the USEPA's Risk Assessment Guidance for Superfund (RAGS) (USEPA 1989). As such, it includes three of the four required components (the fourth component, risk characterization, is not included because this assessment is qualitative):

- Identification of Chemicals of Potential Concern
- Exposure Assessment

- Toxicity Assessment

These components are presented in the following subsections.

6.1 Identification of Chemicals and Media of Potential Concern

Section 4.2 presented the analytical results for samples collected from different Site media (soil, sediment, and ground water). Shallow soil samples were collected from the area where PCBs were previously detected at the greatest concentrations and analyzed for PCBs, VOCs, SVOCs, and metals. Split samples were also analyzed by the NYSDEC for pesticides. Only PCBs were detected in these samples at concentrations that exceed the NYSDEC's Unrestricted Use 6NYCRR Part 375 SCO. Thus, PCBs are the only contaminants of potential concern (COPCs) for the Site. The remaining soil, ground water, and sediment samples were analyzed for PCBs only. PCBs were detected in soil and sediment, but not in ground water.

6.2 Exposure Assessment

An exposure pathway is the manner by which an individual may come in contact with a contaminant. The elements of a completed exposure pathway include: the contaminated environmental media (i.e., soil, water, surface water, sediment, or air); the receptor (e.g., resident, trespasser, industrial worker) potentially exposed to the contamination; and the routes of exposure or how the contaminant enters the body (i.e., inhalation, ingestion, and/or absorption through the skin). Tables 8 and 9 present the exposure pathways assessed for the Site under current and future land use scenarios, respectively. The following subsections discuss the rationale for determining whether, or not, completed exposure pathways exist for the various media.

The previous and current use of the Site as a golf course is considered commercial (DER-10, Section 1.12). Potential receptors are limited to Site workers and recreational users, under the current use scenario. After-hours and off-season trespassers are also considered potential receptors under the current use scenario because site access is not limited. The exposure assessment for the current use scenario is summarized on Table 8.

The potential future uses include continued commercial use of the property as a golf course, and possible future construction activities at the Site. Construction workers are identified as potential receptors if construction occurs in the future. The exposure assessment for potential future use is summarized on Table 9.

6.2.1 Air

There are no exposures through the inhalation of volatile contaminants under the current and future use scenarios. Sampling performed indicated that volatile COPCs were not identified. Concentrations of PCBs in surficial soil samples SS-21A (0-2") (0.364 mg/kg), SS-23A (0-2")

(not detected), and SS-25A (0-2") (not detected) are less than the NYSDEC's restricted use-commercial SCOs (Section 4.2.2 and Table 5); consequently, the exposure pathway to potential receptors via fugitive dust under the current use scenario is not complete. Under future scenarios (Table 9), excavation work could potentially occur in areas where subsurface soil is contaminated by COPCs. Excavation work in these areas may potentially result in exposure via fugitive dust to construction workers.

6.2.2 Ground water

Under the current and future use scenario, there are no exposures through ground water route. No COPCs were detected in ground water and drinking water samples collected during the RI (Section 4.2.3 and Table 6).

6.2.3 Soil

Concentrations of PCBs in soil exceeded the NYSDEC's restricted use-commercial SCO only in subsurface samples (i.e. below 2-inches) beneath, or immediately adjacent to, the asphalt cap (Section 4.2). Subsurface soils in these areas are not accessible; therefore the exposure pathway is considered incomplete for all potential receptors under the current use scenario. Intrusive activities from possible excavation or construction efforts may result in exposure of construction workers to subsurface soil under the future use scenario.

6.2.4 Sediments and Surface Water

Trace levels of PCBs were detected in only one of the eight sediment samples (SED-4 [0-0.5'] – 0.0448 mg/kg) from the pond (Section 4.2.4 and Table 7). PCBs were not detected in the upstream or down stream sediment samples. The pond and stream are not used for recreation or for fishing. Access to the pond and stream is limited by steep slopes and vegetation except near the south end of the pond near the culvert. These factors limit the potential for contact by recreational users and trespassers. Site workers may contact sediments during maintenance activities; however, the limited extent and levels of PCBs (well below the NYSDECs restricted use SCO) suggest that sediment is not a completed pathway.

Surface water was not analyzed during the RI. Exposure to COPCs via contact with surface water is not expected because of the relatively insoluble nature of PCBs, the limited lateral and vertical extent, and the low levels found in Site sediments.

6.3 Toxicity Assessment

The COPCs identified in Section 6.1 can be categorized by their toxicity and their relative effects on human health. Toxicological effects are divided into carcinogenic (cancer causing) and

noncarcinogenic effects, with noncarcinogenic data further subdivided into chronic and long-term subchronic (less than seven years) critical effects.

6.3.1 Carcinogenic Effects

The USEPA's Integrated Risk Information System (IRIS) classifies chemicals for carcinogenicity based on the "weight-of-evidence" expressing the degree of confidence relating to the likelihood that exposure to a given chemical could cause cancer in humans (USEPA 1989). PCBs are classified as a probable human carcinogen by the USEPA and given a weight-of-evidence class "B2" (USEPA, 2010). Class "B2" includes agents for which there is sufficient evidence from animal studies, but for which there is inadequate or no data from epidemiologic studies in humans.

6.3.2 Noncarcinogenic Effects

Critical effects express the toxic endpoint(s) of an adverse response (such as liver damage) associated with the exposure to noncarcinogenic chemicals. PCBs are classified by the USEPA as noncarcinogenic systemic contaminants that may affect the immune system (USEPA, 2010).

6.4 Qualitative Human Health Risk Assessment Summary

PCBs were identified as the only COPCs for the Site based on their presence at concentrations that exceed the NYSDEC's restricted use-commercial SCOs. The USEPA has classified PCBs as "B2" probable human carcinogens and also as noncarcinogenic systemic contaminants.

Under the current use scenario, there are no exposures through the air route. Under future scenarios, excavation work may be conducted in areas where subsurface soil is impacted by COPCs. Excavation work in these areas may result in exposure to construction workers or nearby recreational users via fugitive dust.

Under the current and future use scenarios, ground water is not a medium of concern.

Under the current use scenario, direct contact with surface and subsurface soil is not considered a complete exposure pathway. Under the future use scenario, direct contact to soil beneath the asphalt cap is considered a potential exposure pathway for construction workers under the future use scenario.

Direct contact to surface water and sediments is not considered a completed exposure route under existing and future use scenarios.

7.0 FISH AND WILDLIFE IMPACT ANALYSIS

The Fish and Wildlife Impact Analysis (FWIA) decision matrix for the Site is presented in Appendix C. The FWIA decision matrix uses information collected during the remedial investigation and data collected as part of previous investigations to assess whether a more detailed FWIA is warranted to assess impacts to fish and wildlife in the immediate and surrounding areas. Based on the FWIA decision matrix and Site data, a FWIA is not needed.

8.0 SUMMARY AND CONCLUSIONS

Alpha presents the following conclusions, based on the data presented in this RI Report.

Site Background

- The country club consists of a public, 18-hole golf course, with a clubhouse building, a maintenance building, a small open-air food stand, and a cart shed. The buildings are situated around paved and unpaved parking areas located in the north-central part of the property, near Reservoir Road.

- The Site consists of the Country Club parking lot and adjacent areas that may be impacted by PCBs applied to the surface of the parking lot for dust control circa 1977. A remedy approved by the NYSDEC, consisting of an asphalt cap placed over the parking lot, was implemented in 1984 in accordance with an agreement between Tee Bird and the NYSDEC.

- The paved parking area between the clubhouse and Reservoir Road constitutes the capped PCB area. The cap consists of approximately 18-inches of gravel sub-base covered by asphalt.

- Sand fill and natural clay exists immediately beneath the gravel sub-base.

- Ground water flow beneath the parking lot is to the southeast.

- The pond is apparently man made and created behind the embankment on the southeast end. Ground water appears to be locally recharges from the pond, and discharges to the stream south of the pond.

Nature & Extent of Contamination

- Historic sampling conducted by the NYSDEC indicated that the highest concentrations of PCBs were found on the southern portion of the parking lot.

- Some staining and apparent PCB oil odors were noted in soil samples beneath the asphalt cap. No sheens or indications of non-aqueous phase liquids (NAPL) were noted during the RI.

- No target SVOCs or pesticides were detected in any of the samples. The SVOC TICs reported include PCB isomers. No metals or VOCs were detected at concentrations that exceed the unrestricted use SCOs.

- PCBs are the only contaminant of concern for the Site.

- The soil analytical data show that concentrations of PCBs above the NYSDEC's SCO's are limited to beneath or immediately adjacent to the asphalt cap.

- The distribution pattern and decreasing concentration with depth is consistent with surface application of waste oils used for dust control. The analytical data for samples collected along the cart paths, on the golf course, and on unpaved portions of the parking lot indicate that significant transport or spreading of PCBs from the paved portion of the parking, where the oil was formerly used for dust control, has not occurred.

- PCBs were not detected in any of the ground water samples. These results indicate that the PCBs found in Site soils do not impact ground water quality.

- PCBs were not detected in the stream upstream (SED-1) and downstream (SED-5) of the pond. PCBs were only detected in one sample in the pond (SED-4 [0-0.5 ft]) at a concentration of 0.0448 mg/kg, indicating that the lateral and vertical extent of PCBs in sediment is limited.

Fate & Transport of Site Contaminants

- PCBs are relatively inert and immobile in the environment. PCBs are typically confined to soil and sediment particles. The mode of release (i.e. surface application for dust control), Site conditions, and immobile nature of PCBs has limited the migration of PCBs at the Site as evidenced by ground water and "deep" soil analytical results.

Qualitative Human Health Risk Evaluation

- Under the current use scenario, there are no exposures through the air route. Under future scenarios, excavation work may be conducted in areas where subsurface soil is impacted by PCBs. Excavation work in these areas may result in exposure to construction workers or nearby recreational users via fugitive dust.

- Under the current and future use scenarios, ground water is not a medium of concern.

- Direct contact with surface and subsurface soil is not considered a complete exposure pathway under the current use scenario. Under the future use scenario, direct contact to

subsurface soil beneath the asphalt cap is considered a potential exposure pathway for construction workers.

- Direct contact to surface water sediments is not considered an existing or future direct contact exposure route.

Fish & Wildlife Impact Analysis

- A FWIA is not needed, based on the FWIA decision matrix and Site data.

9.0 RECOMMENDATIONS

Based on the results of the investigation presented in this RI, sufficient data has been collected to evaluate remedial options for the site. Alpha recommends that no further sampling be conducted and that a *Feasibility Study Report* be prepared.

10.0 REFERENCES

National Climatic Data Center (NCDC), 2002. *Climatology of the United States,* No. 81, 1971-2000 – New York.

NYSDEC, 1994. *Fish and Wildlife Impact Assessment for Inactive Hazardous Waste Sites*. October 1, 1994.

NYSDEC, 1999a. *Guidance for the Development of Data Usability Summary Reports*. Division of Environmental Remediation. June 1999.

NYSDEC, 1999b. *Technical Guidance for Screening Contaminated Sediments.* Division of Fish, Wildlife, and Marine Resources. January 1999.

NYSDEC, 1999c. "New York State Regulatory Freshwater Wetlands for Saratoga County (ArcExport:1999)". Pub April 28, 1999.

NYSDEC, 2002. *Draft DER-10 Technical Guidance for Site Investigation and Remediation.* Division of Environmental Remediation. December 25, 2002

NYSDEC, 2005. *Analytical Services Protocol*. July 2005.

NYSDEC, 2010 "Water Quality Classification – NYS". Polyline Shapefile. Division of Water, Bureau of Flood Protection and Dam Safety, revised April 2010.

USEPA. 1987. A *Compendium of Superfund Field Operations Methods,* EPA/540/P-87-001, (OSWER Directive 9355.0-14). December 1987.

USEPA, 1988. *Superfund Exposure Assessment Manual*. EPA/540/1-88/001. April 1988.

USEPA, 1989. *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Interim Final, Part A*. EPA/540/1-89/002.

USEPA, 1990a. *Exposure Factors Handbook.* EPA/600/8-89/043. March 1990.

USEPA, 1990b. *Guidance for Data Usability in Risk Assessment, Interim Final*. EPA/540/G-90/008. October 1990.

USEPA, 1992. *Guidance on Risk Characterization for Risk Managers and Risk Assessor*s. Memorandum. February 26, 1992

USEPA. 1993. *Data Quality Objectives Process for Superfund, Interim Final Guidance.* September. EPA540-R-93-071.

USEPA, 1996. *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.* EPA/540/S-95/504. April 1996.

USEPA, 2010. "Integrated Risk Information System (IRIS)." Webpage accessed September 10, 2010. http://www.epa.gov/ncea/iris/.

USEPA SW-846. Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods.

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TABLES

FIGURES

APPENDIX A
Boring Logs

APPENDIX B
Monitoring Well Construction Logs

APPENDIX C
Fish and Wildlife Impact Assessment
Decision Key

TABLE 3
Summary of Initial Source Area Analytical Results
August 19, 2009
Tee-Bird Country Club
Moreau, New York

Analyte	Soil Cleaup Objectives				SS-1 (0-1 ')	SS-1 (1-2 ')	SS-1 (2-3 ')	SS-2 (0-1 ')	SS-2 (1-2 ')	SS-2 (2.5-3 ')	SS-2 (2-2.5 ')	SS-3 (0-1 ')	SS-3 (1-2 ')
	Un-restricted Use	Restricted Use											
		Restricted Use (Com-mercial)	Protection of Ecological Resources	Protec-tion of Ground Water									
Polychlorinated Biphenyls													
Aroclor 1248	NS	NS	NS	NS	544	0.71	<0.0044	39.4	1.18	0.10	0.04	553	0.41
Aroclor 1254	NS	NS	NS	NS	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
Total PCBs	***0.1***	***1.0***	***1.0***	***3.2***	***544***	***0.71***	***ND***	***39.4***	***1.18***	***0.10***	***0.04***	***553***	***0.41***
Volatile Organic Compounds													
Target Compounds													
Methyl ethyl ketone (2-Butanone)	0.12	500	100	0.12	<0.00516	0.023	<0.00516	<0.00516	<0.00516	NA	<0.00516	<0.00516	<0.00516
Toluene	0.7	500	36	0.7	<0.00046	<0.00046	<0.00046	<0.00046	0.003J	NA	<0.00046	<0.00046	<0.00046
Ethylbenzene	1	390	NS	1	<0.0007	0.005J	<0.0007	0.007J	0.008J	NA	<0.0007	<0.0007	<0.0007
Xylene (total)	0.26	500	0.26	1.6	0.008J	0.025	0.007J	0.034	0.041	NA	0.005J	0.011J	<0.0021
				Total TCL VOCs	***0.008***	***0.053***	***0.007***	***0.041***	***0.052***	***NA***	***0.005***	***0.011***	***ND***
Tentatively Identified Compounds													
1,2,4-Trimethylbenzene	3.6	190	NS	3.6	NI	NI	NI	NI	0.021	NA	NI	NI	NI
4-Ethyltoluene	100	500	100	1,000	NI	NI	NI	0.011	0.014	NA	NI	NI	NI
Ethyl Methyl Benzene isomer	100	500	100	1,000	NI	0.019	NI	0.028	0.035	NA	NI	NI	NI
				Total VOC TICs	***ND***	***0.019***	***ND***	***0.039***	***0.049***	***NA***	***ND***	***ND***	***ND***
Semivolatile Organic Compounds													
Target Compounds				***Total TCL SVOCs***	***ND***	***ND***	***ND***	***ND***	***ND***	***NA***	***ND***	***ND***	***ND***
Tentatively Identified Compounds													
Trichlorobiphenyl isomers	NS	NS	NS	NS	9.6	NI	NI	3.7	NI	NA	NI	53	NI
Tetrachlorobiphenyl isomers	NS	NS	NS	NS	19.6	NI	NI	15.8	NI	NA	NI	79	NI
Pentachlorobiphenyl isomers	NS	NS	NS	NS	13.6	NI	NI	1.8	NI	NA	NI	6	NI
Hexachlorobiphenyl isomers	NS	NS	NS	NS	NI	NI	NI	1.5	NI	NA	NI	NI	NI
				Total SVOC TICs	***33.2***	***ND***	***ND***	***19.1***	***ND***	***NA***	***ND***	***85***	***ND***
Metals													
Arsenic	13	16	13	16	3.91	2.55	3.98	3.28	2.52	NA	1.89	2.84	1.54
Barium	350	400	433	820	31	46.1	118	24.6	27.9	NA	23.5	23.3	15.3
Cadmium	2.5	9.3	4	7.5	0.73	0.66	1.12	0.73	<0.13	NA	<0.13	<0.13	<0.13
Chromium	30	1,500	41	NS	11.8	11.1	21.9	15.4	9.31	NA	6.17	6.42	4.45
Lead	63	1,000	63	450	22.1	6.22	6.98	44.4	6.02	NA	2.15	21.1	4.72

TABLE 3
Summary of Initial Source Area Analytical Results
August 19, 2009
Tee-Bird Country Club
Moreau, New York

Analyte	Soil Cleaup Objectives				SS-3 (2-3 ')	SS-4 (0-1 ')	SS-4 (1-2 ')	SS-4 (1-2 ') Duplicate	SS-4 (2-3 ')
	Un-restricted Use	Restricted Use							
		Restricted Use (Com-mercial)	Protection of Ecological Resources	Protec-tion of Ground Water					
Polychlorinated Biphenyls									
Aroclor 1248	NS	NS	NS	NS	0.04	0.07	<0.0044	<0.0044	<0.0044
Aroclor 1254	NS	NS	NS	NS	<0.0044	0.08	<0.0044	<0.0044	<0.0044
Total PCBs	***0.1***	***1.0***	***1.0***	***3.2***	***0.04***	***0.15***	***ND***	***ND***	***ND***
Volatile Organic Compounds									
Target Compounds									
Methyl ethyl ketone (2-Butanone)	0.12	500	100	0.12	<0.00516	<0.00516	<0.00516	<0.00516	<0.00516
Toluene	0.7	500	36	0.7	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Ethylbenzene	1	390	NS	1	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
Xylene (total)	0.26	500	0.26	1.6	0.006J	<0.0021	<0.0021	<0.0021	<0.0021
Total TCL VOC					***0.006***	***ND***	***ND***	***ND***	***ND***
Tentatively Identified Compounds									
1,2,4-Trimethylbenzene	3.6	190	NS	3.6	NI	NI	NI	NI	NI
4-Ethyltoluene	100	500	100	1,000	NI	NI	NI	NI	NI
Ethyl Methyl Benzene isomer	100	500	100	1,000	NI	NI	NI	NI	NI
Total VOC TICs					***ND***	***ND***	***ND***	***ND***	***ND***
Semivolatile Organic Compounds									
Target Compounds ***Total TCL SVOC***					***ND***	***ND***	***ND***	***ND***	***ND***
Tentatively Identified Compounds									
Trichlorobiphenyl isomers	NS	NS	NS	NS	NI	NI	NI	NI	NI
Tetrachlorobiphenyl isomers	NS	NS	NS	NS	NI	NI	NI	NI	NI
Pentachlorobiphenyl isomers	NS	NS	NS	NS	NI	NI	NI	NI	NI
Hexachlorobiphenyl isomers	NS	NS	NS	NS	NI	NI	NI	NI	NI
Total SVOC TICs					***ND***	***ND***	***ND***	***ND***	***ND***
Metals									
Arsenic	13	16	13	16	2.38	2.44	2.9	2.47	2.56
Barium	350	400	433	820	53.1	17.9	94.4	72.9	113
Cadmium	2.5	9.3	4	7.5	0.64	<0.13	1.05	0.83	0.97
Chromium	30	1,500	41	NS	11.5	5.99	21.3	15.6	19.7
Lead	63	1,000	63	450	3.74	5.45	7.07	5.58	5.51

TABLE 3
Summary of Initial Source Area Analytical Results
August 19, 2009
Tee-Bird Country Club
Moreau, New York

Notes:

Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
Samples collected August 19, 2009
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
< - analyte was not detected above the method detection limit (MDL).
J - approxmiate value above the MDL, but less than the pratical quantitation limit (PQL).
B - analyte was detected in the laboratory method blank.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
TIC - Tentatively identified compound.
NI - TIC not identified.
NS - No soil cleanup objective established.
TCL - Target compound list
All results are preliminary pending data validation.

TABLE 4
Summary of NYSDEC Split Soil Sample Analytical Results
August 19, 2009
Tee-Bird Country Club
Moreau, New York

Analyte	Soil Cleaup Objectives				SS-1 (0-1 ')		SS-1 (1-2 ')		SS-1 (2-3 ')		SS-2 (0-1 ')		SS-2 (1-2 ')	
	Un-restricted Use	Restricted Use												
		Restricted Use (Com-mercial)	Protection of Ecological Resources	Protec-tion of Ground Water										
					Alpha	DEC	Alpha	DEC	Alpha	DEC	Alpha	DEC	Alpha	DEC
Polychlorinated Biphenyls														
Aroclor 1248	NS	NS	NS	NS	544	610	0.71	0.58	<0.0044	0.049	39.4	60.0	1.18	0.78
Aroclor 1254	NS	NS	NS	NS	<0.0044	<35	<0.0044	<0.039	<0.0044	<0.042	<0.0044	<19	<0.0044	<0.041
Total PCBs	***0.1***	***1.0***	***1.0***	***3.2***	***544***	***610***	***0.71***	***0.58***	***ND***	***0.049***	***39.4***	***60.0***	***1.18***	***0.78***
Pesticides														
Aldrin	0.005	0.68	0.14	0.19	NA	R	NA	<0.0020	NA	<0.0023	NA	<0.980	NA	<0.0021
Heptachlor epoxide	NS	0.19*	NS	0.7*	NA	R	NA	R	NA	<0.0023	NA	<0.980	NA	R

Analyte	Soil Cleaup Objectives				SS-2 (2-2.5 ')		SS-2 (2.5-3 ')		SS-3 (0-1 ')		SS-3 (1-2 ')		SS-3 (2-3 ')	
	Un-restricted Use	Restricted Use												
		Restricted Use (Com-mercial)	Protection of Ecological Resources	Protec-tion of Ground Water										
					Alpha	DEC	Alpha	DEC	Alpha	DEC	Alpha	DEC	Alpha	DEC
Polychlorinated Biphenyls														
Aroclor 1248	NS	NS	NS	NS	0.04	<0.039	0.10	<0.046	553	460	0.41	0.98	0.04	NA
Aroclor 1254	NS	NS	NS	NS	<0.0044	<0.039	<0.0044	<0.046	<0.0044	<36	<0.0044	<0.038	<0.0044	NA
Total PCBs	***0.1***	***1.0***	***1.0***	***3.2***	***0.04***	***ND***	***0.10***	***ND***	***553***	***460***	***0.41***	***0.98***	***0.04***	***NA***
Pesticides														
Aldrin	0.005	0.68	0.14	0.19	NA	<0.0020	NA	<0.0024	NA	R	NA	R	NA	NA
Heptachlor epoxide	NS	0.19*	NS	0.7*	NA	<0.0020	NA	<0.0024	NA	R	NA	R	NA	NA

TABLE 4
Summary of NYSDEC Split Soil Sample Analytical Results
August 19, 2009
Tee-Bird Country Club
Moreau, New York

Analyte	Soil Cleaup Objectives				SS-4 (0-1 ')		SS-4 (1-2 ')		SS-4 (2-3 ')	
	Un-restricted Use	Restricted Use								
		Restricted Use (Com-mercial)	Protection of Ecological Resources	Protec-tion of Ground Water						
					Alpha	DEC	Alpha	DEC	Alpha	DEC
Polychlorinated Biphenyls										
Aroclor 1248	NS	NS	NS	NS	0.07	0.14	<0.0044	NA	<0.0044	NA
Aroclor 1254	NS	NS	NS	NS	0.08	<0.037	<0.0044	NA	<0.0044	NA
Total PCBs	***0.1***	***1.0***	***1.0***	***3.2***	***0.15***	***0.14***	***ND***	***NA***	***ND***	***NA***
Pesticides										
Aldrin	0.005	0.68	0.14	0.19	NA	<0.0019	NA	NA	NA	NA
Heptachlor epoxide	NS	0.19*	NS	0.7*	NA	<0.0019	NA	NA	NA	NA

Notes:
Analysis of "Alpha" samples was performed by York Analytical Laboritories, Inc., Stratford, CT
Analysis of "DEC" samples was performed by Adirondack Environmental Services, Albany, NY
Samples collected August 19, 2009
All values reported in milligrams per kilogram (mg/kg), which is approximately equivalent to parts per million (ppm).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
* SCOs shown for heptachlor epoxide are USEPA preliminary remediation goals (industrial and protection of ground water.)
< - analyte was not detected above the method detection limit (MDL).
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.
Data validation flags for pesticide results were added by Alpha based on a review of the Adirondacks analytical data package.
R - Data rejected or unusable. Re analysis by GC/MS confirmed that heptachlor epoxide and alrin were not present in samples.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	NYSDEC Soil Cleanup Objective					SB-1 (5-6) 12/15/09	SB-2 (4-5) 12/15/09	SB-3 (4-5) 12/15/09	SB-4 (4-5) 12/15/09	SB-4 (5-6) 12/15/09	SS-1 (0-1) 8/19/09	SS-1 (1-2) 8/19/09
	Un-restricted Use	Residential	Restricted Use (Commercial)	Protection of Ecological Resources	Protection of Ground Water							
Aroclor 1016	NS	NS	NS	NS	NS	0.0245U	0.0267U	0.0245U	0.027U	0.0262U	13.5U	0.0308U
Aroclor 1221	NS	NS	NS	NS	NS	0.0245U	0.0267U	0.0245U	0.027U	0.0262U	13.5U	0.0308U
Aroclor 1232	NS	NS	NS	NS	NS	0.0245U	0.0267U	0.0245U	0.027U	0.0262U	13.5U	0.0308U
Aroclor 1242	NS	NS	NS	NS	NS	0.0245U	0.0267U	0.0245U	0.027U	0.0262U	13.5U	0.0308U
Aroclor 1248	NS	NS	NS	NS	NS	0.0245U	0.0267U	0.0245U	1.01	0.05	544	0.71
Aroclor 1254	NS	NS	NS	NS	NS	0.0245U	0.0267U	0.0245U	0.027U	0.0262U	13.5U	0.0308U
Aroclor 1260	NS	NS	NS	NS	NS	0.0245U	0.0267U	0.0245U	0.027U	0.0262U	13.5U	0.0308U
Total PCBs	*0.1*	*1*	*1*	*1*	*3.2*	*ND*	*ND*	*ND*	*1.01*	*0.05*	*544*	*0.71*
Total Organic Carbon	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	SS-1 (2-3) 8/19/09	SS-2 (0-1) 8/19/09	SS-2 (1-2) 8/19/09	SS-2 (2.5-3) 8/19/09	SS-2 (2-2.5) 8/19/09	SS-3 (0-1) 8/19/09	SS-3 (1-2) 8/19/09	SS-3 (1-2) 8/19/09 Duplicate	SS-3 (2-3) 8/19/09	SS-4 (0-1) 8/19/09	SS-4 (1-2) 8/19/09	SS-4 (2-3) 8/19/09	SS-5 (0-1) 12/14/09	SS-5 (1-2) 12/14/09
Aroclor 1016	0.0326U	1.43U	0.0311U	0.0355U	0.0292U	13.8U	0.0286U	0.0274U	0.0328U	0.0286U	0.0309U	0.0326U	2.04U	0.1U
Aroclor 1221	0.0326U	1.43U	0.0311U	0.0355U	0.0292U	13.8U	0.0286U	0.0274U	0.0328U	0.0286U	0.0309U	0.0326U	2.04U	0.1U
Aroclor 1232	0.0326U	1.43U	0.0311U	0.0355U	0.0292U	13.8U	0.0286U	0.0274U	0.0328U	0.0286U	0.0309U	0.0326U	2.04U	0.1U
Aroclor 1242	0.0326U	1.43U	0.0311U	0.0355U	0.0292U	13.8U	0.0286U	0.0274U	0.0328U	0.0286U	0.0309U	0.0326U	74.4	3.07
Aroclor 1248	0.0326U	39.4	1.18	0.1	0.04	553	0.41	0.0274U	0.04	0.07	0.0309U	0.0326U	2.04U	0.1U
Aroclor 1254	0.0326U	1.43U	0.0311U	0.0355U	0.0292U	13.8U	0.0286U	0.0274U	0.0328U	0.08	0.0309U	0.0326U	2.04U	0.1U
Aroclor 1260	0.0326U	1.43U	0.0311U	0.0355U	0.0292U	13.8U	0.0286U	0.0274U	0.0328U	0.0286U	0.0309U	0.0326U	2.04U	0.1U
Total PCBs	*ND*	*39.4*	*1.18*	*0.1*	*0.04*	*553*	*0.41*	*ND*	*0.04*	*0.15*	*ND*	*ND*	*74.4*	*3.07*
Total Organic Carbon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15,200	1,780

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	SS-5 (2-3) 12/14/09	SS-6 (0-1) 12/14/09	SS-6 (0-1) 12/14/09 Duplicate	SS-6 (1-2) 12/14/09	SS-6 (2-3) 12/14/09	SS-7 (0-1) 12/14/09	SS-7 (1-2) 12/14/09	SS-7 (2-3) 12/14/09	SS-8 (0-1) 12/14/09	SS-8 (1-2) 12/14/09	SS-8 (2-3) 12/14/09	SS-9 (0-1) 12/14/09	SS-9 (1-2) 12/14/09	SS-9 (2-3) 12/14/09
Aroclor 1016	0.0224U	0.192U	0.0192U	0.0214U	0.0233U	0.369U	0.0204U	0.0209U	0.952U	0.0213U	0.0228U	0.947U	0.0195U	0.0207U
Aroclor 1221	0.0224U	0.192U	0.0192U	0.0214U	0.0233U	0.369U	0.0204U	0.0209U	0.952U	0.0213U	0.0228U	0.947U	0.0195U	0.0207U
Aroclor 1232	0.0224U	0.192U	0.0192U	0.0214U	0.0233U	0.369U	0.0204U	0.0209U	0.952U	0.0213U	0.0228U	0.947U	0.0195U	0.0207U
Aroclor 1242	0.25	0.192U	0.0192U	0.0214U	0.0233U	0.369U	0.0204U	0.0209U	38	0.0213U	0.0228U	44.6	0.0195U	0.0207U
Aroclor 1248	0.0224U	5.28	0.5	0.0214U	0.0233U	8.38	0.17	0.0209U	0.952U	0.04	0.0228U	0.947U	0.0195U	0.0207U
Aroclor 1254	0.0224U	0.192U	0.0192U	0.0214U	0.0233U	0.369U	0.0204U	0.0209U	0.952U	0.0213U	0.0228U	0.947U	0.0195U	0.0207U
Aroclor 1260	0.0224U	0.192U	0.0192U	0.0214U	0.0233U	0.369U	0.0204U	0.0209U	0.952U	0.0213U	0.0228U	0.947U	0.0195U	0.0207U
Total PCBs	*0.25*	*5.28*	*0.5*	*ND*	*ND*	*8.38*	*0.17*	*ND*	*38*	*0.04*	*ND*	*44.6*	*ND*	*ND*
Total Organic Carbon	750	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,050	1,100	NA	NA

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	SS-10 (0-1) 12/14/09	SS-10 (1-1.5) 12/14/09	SS-10 (1.5-2) 12/14/09	SS-11 (0-1) 12/14/09	SS-11 (1-2) 12/14/09	SS-11 (2-3) 12/14/09	SS-12 (0-1) 12/14/09	SS-12 (1-2) 12/14/09	SS-12 (2-3) 12/14/09	SS-13 (0-1) 12/14/09	SS-13 (0-1) 12/14/09 Duplicate	SS-13 (1-2) 12/14/09	SS-13 (2-3) 12/14/09	SS-14 (0-1) 12/14/09
Aroclor 1016	0.202U	0.0481U	0.0218U	0.0211U	0.0207U	0.0219U	0.0202U	0.0195U	0.0207U	0.0206U	0.0206U	0.0214U	0.0218U	0.0209U
Aroclor 1221	0.202U	0.0481U	0.0218U	0.0211U	0.0207U	0.0219U	0.0202U	0.0195U	0.0207U	0.0206U	0.0206U	0.0214U	0.0218U	0.0209U
Aroclor 1232	0.202U	0.0481U	0.0218U	0.0211U	0.0207U	0.0219U	0.0202U	0.0195U	0.0207U	0.0206U	0.0206U	0.0214U	0.0218U	0.0209U
Aroclor 1242	0.202U	0.0481U	0.0218U	0.0211U	0.0207U	0.0219U	0.0202U	0.0195U	0.0207U	0.0206U	0.0206U	0.0214U	0.0218U	0.0209U
Aroclor 1248	7.47	0.0481U	0.0218U	0.0211U	0.0207U	0.0219U	0.0202U	0.0195U	0.0207U	0.0206U	0.0206U	0.0214U	0.0218U	0.0209U
Aroclor 1254	0.202U	0.0481U	0.0218U	0.0211U	0.0207U	0.0219U	0.05	0.0195U	0.0207U	0.0206U	0.0206U	0.0214U	0.0218U	0.0209U
Aroclor 1260	0.202U	0.0481U	0.0218U	0.0211U	0.0207U	0.0219U	0.0202U	0.0195U	0.0207U	0.0206U	0.0206U	0.0214U	0.0218U	0.0209U
Total PCBs	*7.47*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.05*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
Total Organic Carbon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	SS-14 (1-2) 12/14/09	SS-14 (2-3) 12/14/09	SS-15 (0-1) 12/14/09	SS-15 (1-1.5) 12/14/09	SS-15 (1.5-2) 12/14/09	SS-16 (0-1) 12/14/09	SS-16 (1-1.5) 12/14/09	SS-16 (1.5-2) 12/14/09	SS-17 (0-1) 12/14/09	SS-17 (1-2) 12/14/09	SS-17 (2-3) 12/14/09	SS-18 (0-0.5) 12/14/09	SS-18 (0.5-1) 12/14/09	SS-18 (1-2) 12/14/09
Aroclor 1016	0.0209U	0.0214U	0.0209U	0.0213U	0.0221U	0.0197UJ	0.0219U	0.0216U	0.0197U	0.0197U	0.0214U	0.0206U	0.0202U	0.0228U
Aroclor 1221	0.0209U	0.0214U	0.0209U	0.0213U	0.0221U	0.0197UJ	0.0219U	0.0216U	0.0197U	0.0197U	0.0214U	0.0206U	0.0202U	0.0228U
Aroclor 1232	0.0209U	0.0214U	0.0209U	0.0213U	0.0221U	0.0197UJ	0.0219U	0.0216U	0.0197U	0.0197U	0.0214U	0.0206U	0.0202U	0.0228U
Aroclor 1242	0.0209U	0.0214U	0.0209U	0.0213U	0.0221U	0.0197UJ	0.0219U	0.0216U	0.0197U	0.0197U	0.0214U	0.0206U	0.0202U	0.0228U
Aroclor 1248	0.0209U	0.0214U	0.0209U	0.0213U	0.0221U	0.0197UJ	0.0219U	0.0216U	0.0197U	0.0197U	0.0214U	0.0206U	0.0202U	0.0228U
Aroclor 1254	0.0209U	0.0214U	0.0209U	0.0213U	0.0221U	0.0197UJ	0.0219U	0.0216U	0.0197U	0.0197U	0.0214U	0.0206U	0.0202U	0.0228U
Aroclor 1260	0.0209U	0.0214U	0.0209U	0.0213U	0.0221U	0.0197UJ	0.0219U	0.0216U	0.0197U	0.0197U	0.0214U	0.0206U	0.0202U	0.0228U
Total PCBs	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
Total Organic Carbon	NA	NA	4,600	NA	NA	NA	NA	NA	NA	NA	NA	6,300	NA	NA

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	SS-19 (0-1) 12/14/09	SS-19 (1-2) 12/14/09	SS-19 (2-2.5) 12/14/09	SS-20 (0-1) 12/14/09	SS-20 (1-1.5) 12/14/09	SS-20 (1.5-2.5) 12/14/09	SS-20 (1.5-2.5) 12/14/09 Duplicate	SS-21A (0-2") 6/30/10	SS-21 (0-1) 12/14/09	SS-21 (0-1) 12/14/09 Duplicate	SS-21 (1-2) 12/14/09	SS-21 (2-2.5) 12/14/09	SS-22 (0-1) 12/14/09	SS-22 (1-2) 12/14/09
Aroclor 1016	0.0207U	0.0218U	0.0228U	0.0204U	0.0204U	0.0213U	0.023U	0.0247U	0.391U	0.952U	1.22U	1.04U	0.0209U	0.0224U
Aroclor 1221	0.0207U	0.0218U	0.0228U	0.0204U	0.0204U	0.0213U	0.023U	0.0247U	0.391U	0.952U	1.22U	1.04U	0.0209U	0.0224U
Aroclor 1232	0.0207U	0.0218U	0.0228U	0.0204U	0.0204U	0.0213U	0.023U	0.0247U	0.391U	0.952U	1.22U	1.04U	0.0209U	0.0224U
Aroclor 1242	0.0207U	0.0218U	0.0228U	0.0204U	0.0204U	0.0213U	0.023U	0.0247U	13.1J	28.8J	36.4	30.4	0.0209U	0.0224U
Aroclor 1248	0.0207U	0.0218U	0.0228U	0.0204U	0.0204U	0.0213U	0.023U	0.364	0.391U	0.952U	1.22U	1.04U	0.0209U	0.0224U
Aroclor 1254	0.0207U	0.0218U	0.0228U	0.0204U	0.0204U	0.0213U	0.023U	0.0247U	0.391U	0.952U	1.22U	1.04U	0.0209U	0.0224U
Aroclor 1260	0.0207U	0.0218U	0.0228U	0.0204U	0.0204U	0.0213U	0.023U	0.0247U	0.391U	0.952U	1.22U	1.04U	0.0209U	0.0224U
Total PCBs	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.364*	*13.1*	*28.8*	*36.4*	*30.4*	*ND*	*ND*
Total Organic Carbon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	SS-22 (2-3) 12/14/09	SS-23A (0-2") 6/30/10	SS-23 (0-1) 12/14/09	SS-23 (1-2) 12/14/09	SS-23 (2-3) 12/14/09	SS-24 (0-1) 12/14/09	SS-24 (1-1.5) 12/14/09	SS-25A (0-2") 6/30/10	SS-25 (0-1) 12/14/09	SS-25 (1-2) 12/14/09	SS-25 (2-3) 12/14/09	SS-26 (0-1) 12/15/09	SS-26 (0-1) 12/15/09 Duplicate	SS-26 (1-2) 12/15/09
Aroclor 1016	0.0223U	0.0177U	0.0207U	0.0214U	0.0221U	0.0202U	0.0223U	0.0178U	0.211U	0.05U	0.0194U	0.0202U	0.0201U	0.0213U
Aroclor 1221	0.0223U	0.0177U	0.0207U	0.0214U	0.0221U	0.0202U	0.0223U	0.0178U	0.211U	0.05U	0.0194U	0.0202U	0.0201U	0.0213U
Aroclor 1232	0.0223U	0.0177U	0.0207U	0.0214U	0.0221U	0.0202U	0.0223U	0.0178U	0.211U	0.05U	0.0194U	0.0202U	0.0201U	0.0213U
Aroclor 1242	0.0223U	0.0177U	0.0207U	0.0214U	0.0221U	0.0202U	0.0223U	0.0178U	0.211U	0.05U	0.0194U	0.0202U	0.0201U	0.0213U
Aroclor 1248	0.0223U	0.0177U	0.0207U	0.0214U	0.0221U	0.43	0.0223U	0.0178U	10.2	1.63	0.2	0.16J	0.42J	0.0213U
Aroclor 1254	0.0223U	0.0177U	0.12	0.0214U	0.0221U	0.0202U	0.0223U	0.0178U	0.211U	0.05U	0.0194U	0.0202U	0.0201U	0.0213U
Aroclor 1260	0.0223U	0.0177U	0.0207U	0.0214U	0.0221U	0.0202U	0.0223U	0.0178U	0.211U	0.05U	0.0194U	0.0202U	0.0201U	0.0213U
Total PCBs	*ND*	*ND*	*0.12*	*ND*	*ND*	*0.43*	*ND*	*ND*	*10.2*	*1.63*	*0.2*	*0.16*	*0.42*	*ND*
Total Organic Carbon	NA	NA	NA	NA	NA	NA	NA	NA	NA	7,300	NA	NA	NA	NA

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
2009 - 2010
Tee-Bird Country Club
Moreau, New York

Analyte	SS-26 (2-3) 12/15/09	SS-27 (0-1) 12/14/09	SS-27 (1-2) 12/14/09	SS-27 (2-3) 12/14/09	SS-28 (0-1) 12/14/09	SS-28 (1-2) 12/14/09	SS-28 (2-3) 12/14/09	SS-29 (0-1) 12/14/09	SS-29 (1-2) 12/14/09	SS-29 (2-3) 12/14/09	SS-30 (0-1) 12/14/09	SS-30 (1-2) 12/14/09	SS-30 (2-3) 12/14/09
Aroclor 1016	0.0231U	0.0206U	0.0201U	0.0218U	0.0206U	0.0207U	0.0201U	0.0209U	0.0218U	0.0236U	0.0216U	0.0221U	0.023U
Aroclor 1221	0.0231U	0.0206U	0.0201U	0.0218U	0.0206U	0.0207U	0.0201U	0.0209U	0.0218U	0.0236U	0.0216U	0.0221U	0.023U
Aroclor 1232	0.0231U	0.0206U	0.0201U	0.0218U	0.0206U	0.0207U	0.0201U	0.0209U	0.0218U	0.0236U	0.0216U	0.0221U	0.023U
Aroclor 1242	0.0231U	0.0206U	0.0201U	0.0218U	0.0206U	0.0207U	0.0201U	0.0209U	0.0218U	0.0236U	0.0216U	0.0221U	0.023U
Aroclor 1248	0.0231U	0.0206U	0.0201U	0.0218U	0.0206U	0.05	0.0201U	0.0209U	0.0218U	0.0236U	0.0216U	0.0221U	0.023U
Aroclor 1254	0.0231U	0.0206U	0.0201U	0.0218U	0.0206U	0.0207U	0.0201U	0.0209U	0.0218U	0.0236U	0.0216U	0.0221U	0.023U
Aroclor 1260	0.0231U	0.0206U	0.0201U	0.0218U	0.0206U	0.0207U	0.0201U	0.0209U	0.0218U	0.0236U	0.0216U	0.0221U	0.023U
Total PCBs	*ND*	*ND*	*ND*	*ND*	*ND*	*0.05*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
Total Organic Carbon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
All values reported in milligrams per kilogram (mg/kg).
Sample depths are relative to the base of the pavement and gravel sub-base.
Final unrestricted and restricted use soil cleanup objectives as presented in 6NYCRR Part 375
Shaded values exceed the restricted use - commercial soil cleanup objective
U - analyte was not detected above the practical quantitation limit (PQL).
J - approxmiate value.
NA - sample was not analyzed for the indicated analyte.
ND - Not detected
NS - No soil cleanup objective established.

TABLE 6
Summary of Ground Water Analytical Results
June 30, 2010
Tee-Bird Country Club
Moreau, New York

Analyte	Ground Water Standard*	MW-1	MW-2	MW-2 (Duplicate)	MW-3	Clubhouse Well
Aroclor 1016	--	0.0541U	0.0541U	0.0541U	0.0526U	0.0513U
Aroclor 1221	--	0.0541U	0.0541U	0.0541U	0.0526U	0.0513U
Aroclor 1232	--	0.0541U	0.0541U	0.0541U	0.0526U	0.0513U
Aroclor 1242	--	0.0541U	0.0541U	0.0541U	0.0526U	0.0513U
Aroclor 1248	--	0.0541U	0.0541U	0.0541U	0.0526U	0.0513U
Aroclor 1254	--	0.0541U	0.0541U	0.0541U	0.0526U	0.0513U
Aroclor 1260	--	0.0541U	0.0541U	0.0541U	0.0526U	0.0513U
Total PCBs	***0.09****	***ND***	***ND***	***ND***	***ND***	***ND***

Notes:
Analyses performed by York Analytical Laboritories, Inc., Stratford, CT
Samples collected June 30, 2010
All values reported in micrograms per liter (ug/L).
< - analyte was not detected above the practical quantitation limit (PQL).
ND - Not detected
* - New York State Ambient Water Quality Standard - Class "GA."
** - The standard applies to the sum of these substances.

TABLE 7
Summary Sediment Sample Analytical Results
June 30, 2010
Tee-Bird Country Club
Moreau, New York

Analyte	Sediment Screening Criteria*			SED-1 (0-0.5)	SED-1 (0-0.5) Duplicate	SED-2 (0-0.5)	SED-2 (0.5-1.0)	SED-2 (1.0-1.5)	SED-3 (0-0.5)	SED-3 (0.5-1.0)	SED-3 (1.0-1.5)	SED-4 (0-0.5)	SED-4 (0.5-1.5)	SED-5 (0-0.5)
	Benthic Aquatic Acute Toxicity	Benthic Aquatic Chronic Toxicity	Wildlife Bioaccum-ulation											
Aroclor 1016	--	--	--	0.0115U	0.0143U	0.0205UJ	0.0149U	0.0131U	0.0276UJ	0.0172UJ	0.0159UJ	0.0140U	0.0207UJ	0.0116U
Aroclor 1221	--	--	--	0.0115U	0.0143U	0.0205UJ	0.0149U	0.0131U	0.0276UJ	0.0172UJ	0.0159UJ	0.0140U	0.0207UJ	0.0116U
Aroclor 1232	--	--	--	0.0115U	0.0143U	0.0205UJ	0.0149U	0.0131U	0.0276UJ	0.0172UJ	0.0159UJ	0.0140U	0.0207UJ	0.0116U
Aroclor 1242	--	--	--	0.0115U	0.0143U	0.0205UJ	0.0149U	0.0131U	0.0276UJ	0.0172UJ	0.0159UJ	0.0140U	0.0207UJ	0.0116U
Aroclor 1248	--	--	--	0.0115U	0.0143U	0.0205UJ	0.0149U	0.0131U	0.0276UJ	0.0172UJ	0.0159UJ	0.0448	0.0207UJ	0.0116U
Aroclor 1254	--	--	--	0.00988U	0.0123U	0.0176UJ	0.0128U	0.0113U	0.0238UJ	0.0148UJ	0.0137UJ	0.0120U	0.0178UJ	0.00997U
Aroclor 1260	--	--	--	0.00988U	0.0123U	0.0176UJ	0.0128U	0.0113U	0.0238UJ	0.0148UJ	0.0137UJ	0.0120U	0.0178UJ	0.00997U
Aroclor 1262	--	--	--	0.00988U	0.0123U	0.0176UJ	0.0128U	0.0113U	0.0238UJ	0.0148UJ	0.0137UJ	0.0120U	0.0178UJ	0.00997U
Aroclor 1268	--	--	--	0.00988U	0.0123U	0.0176UJ	0.0128U	0.0113U	0.0238UJ	0.0148UJ	0.0137UJ	0.0120U	0.0178UJ	0.00997U
Total PCBs (mg/kg)	--	--	--	***ND***	***ND***	***ND***	***ND***	***ND***	***ND***	***ND***	***ND***	***0.0448***	***ND***	***ND***
Total Organic Carbon (mg_{oc}/kg)	--	--	--	5,520	5,080	37,600J	16,300	35,800	18,000J	26,500J	43,500J	25,000	22,900J	7,900
Percent Solids (%)	--	--	--	68.8	55.4	38.6	53.2	60.3	28.6	46.0	49.6	56.5	38.1	68.2
Total PCBs (mg/kg_{oc})**	**2,760**	**19.3**	**1.4**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.79**	**ND**	**ND**

Notes:

Analyses performed by York Analytical Laboritories, Inc., Stratford, CT

Samples collected June 30, 2010

All values reported in milligrams per kilogram of sediment (mg/kg) on a dry weight basis.

< - analyte was not detected above the practical quantitation limit (PQL).

J - Results are estimated.

ND - Not detected

* - Sediment criteria for non-polar contaminants from "Technical Guidance for Screening Contaminated Sediments" (NYSDEC Division of Fish, Wildlife, & Marine Resources, January 1999). are reported in milligrams per kilograms of organic carbon (mg/kg_{oc}) and applies to the sum of detected PCBs.

** - Total PCBs (mg/kg_{oc}) = Total PCBs (mg/kg) $x10^6$/TOC (mg_{oc}/kg)

The sediment screening criteria apply to the sum of these substances.

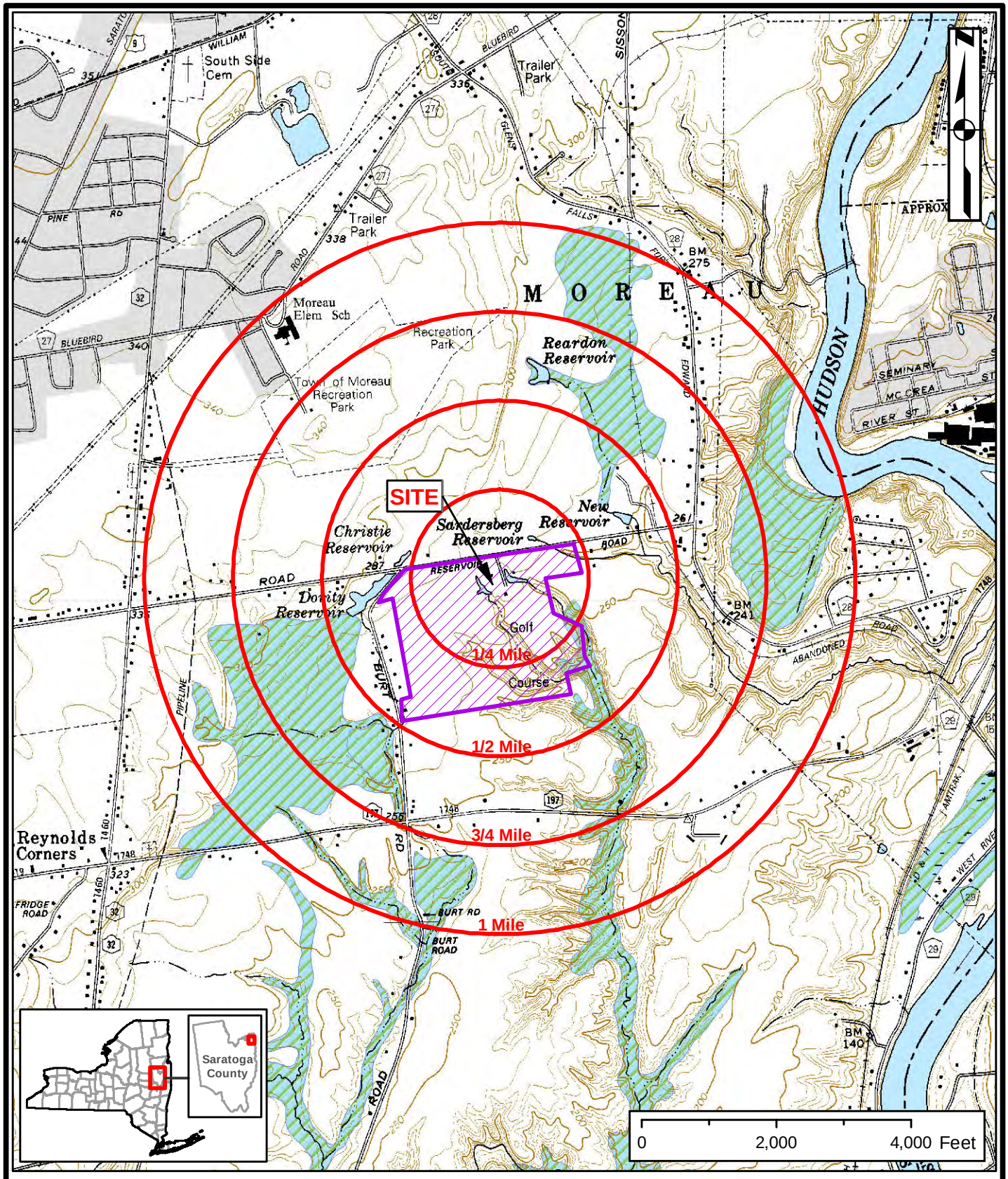
TABLE 8
Potential Pathways of Exposure
Current Use Scenarios
Tee-Bird Country Club
Moreau, New York

Matrix	Potential Receptors	Potential Routes of Exposure	Pathway Complete?
Air	Site Workers Recreational Users Trespassers	Inhalation of volatile contaminants from soil or fugitive dust	No. Volatile COPCs were not identified Impacted surface soils are limited to beneath asphalt cap.
Ground Water	Site Workers Recreational Users	Dermal absorption Ingestion Inhalation	No. COPCs were not detected in ground water or site drinking water.
Suface Soil	Site Workers Recreational Users Trespassers	Dermal absorption Ingestion	No. Impacted surface soils are limited to beneath asphalt cap.
Subsurface Soil	Site Workers Recreational Users Trespassers	Dermal absorption Ingestion	No. Access to subsurface soil is not anticipated under current site conditions
Sediment	Site Workers Recreational Users Trespassers	Dermal absorption Ingestion	No. Contact is possible, concentrations are below commercial use SCOs.
Surface Water	Site Workers Recreational Users Trespassers	Dermal absorption	No. COPCs are not suspected present in surface waters

TABLE 9
Potential Pathways of Exposure
Future Use Scenarios
Tee-Bird Country Club
Moreau, New York

Matrix	Potential Receptors	Potential Routes of Exposure	Pathway Complete?
Air	Site Workers Recreational Users Trespassers	Inhalation of volatile contaminants from soil or fugitive dust	No. Volatile COPCs were not identified Impacted surface soils are limited to beneath asphalt cap.
	Construction Workers	Inhalation of fugitive dust	Yes. Construction workers may be exposed to fugistive dust if activities disturb impacted soil beneath the asphalt cap
Ground Water	Site Workers Recreational Users	Dermal absorption Ingestion Inhalation	No. COPCs were not detected in ground water or site drinking water.
Suface Soil	Site Workers Recreational Users Trespassers	Dermal absorption Ingestion	No. Impacted surface soils are limited to beneath asphalt cap.
Subsurface Soil	Site Workers Recreational Users Trespassers	Dermal absorption Ingestion	No. Impacted soils are limited to beneath asphalt cap.
	Construction Workers	Dermal absorption Ingestion	Yes. Incidental contact is possible during construction and/or maintenance activities if parking lot soils are disturbed.
Sediment	Site Workers Recreational Users Trespassers	Dermal absorption Ingestion	No. Contact is possible, concentrations are below commercial use SCOs.
Surface Water	Site Workers Recreational Users Trespassers	Dermal absorption	No. COPCs are not suspected present in surface waters

FIGURES



LEGEND

- Property Boundary (approx.)
- NYSDEC Mapped Wetland

Source:
-NYSDOT 7.5-minute topographic map (Portions of Gansevoort, Fort Miller, Glens Falls, and Hudson Falls quadrangles)
-New York State Regulatory Freshwater Wetlands For Saratoga County (ARC Export : 1999)

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Proj. No. 05132

FIGURE 1
Site Location Map

Tee Bird Country Club, Inc.
Town of Moreau, New York

Saratoga County, New York

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Proj. No. 05132

FIGURE 2
Site Map

Tee Bird Country Club, Inc.
Town of Moreau, New York

Saratoga County, New York

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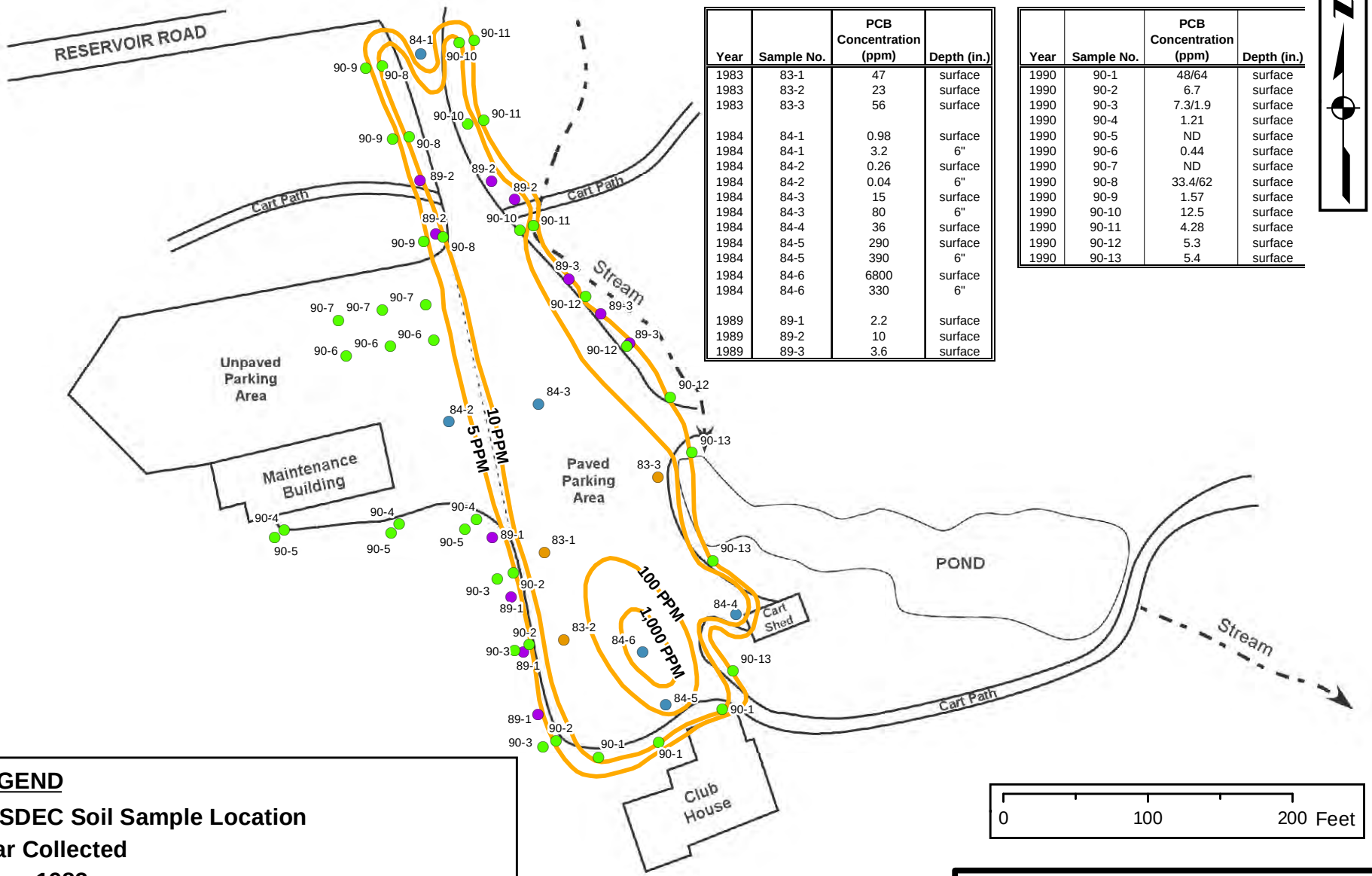

Year	Sample No.	PCB Concentration (ppm)	Depth (in.)
1983	83-1	47	surface
1983	83-2	23	surface
1983	83-3	56	surface
1984	84-1	0.98	surface
1984	84-1	3.2	6"
1984	84-2	0.26	surface
1984	84-2	0.04	6"
1984	84-3	15	surface
1984	84-3	80	6"
1984	84-4	36	surface
1984	84-5	290	surface
1984	84-5	390	6"
1984	84-6	6800	surface
1984	84-6	330	6"
1989	89-1	2.2	surface
1989	89-2	10	surface
1989	89-3	3.6	surface

Year	Sample No.	PCB Concentration (ppm)	Depth (in.)
1990	90-1	48/64	surface
1990	90-2	6.7	surface
1990	90-3	7.3/1.9	surface
1990	90-4	1.21	surface
1990	90-5	ND	surface
1990	90-6	0.44	surface
1990	90-7	ND	surface
1990	90-8	33.4/62	surface
1990	90-9	1.57	surface
1990	90-10	12.5	surface
1990	90-11	4.28	surface
1990	90-12	5.3	surface
1990	90-13	5.4	surface

LEGEND

NYSDEC Soil Sample Location

Year Collected

- **1983**
- **1984**
- **1989**
- **1990**

PCB Concentration Contour - Shallow Soil

Notes:
- Basemap: Features traced using SaratogaCounty 12-inch Resolution Natural Color Orthoimagery (April 2007), NYS Office of Cyber Security & Critical Infrastructure Coordination.
- Soil sample locations are approximate based on unscaled NYSDEC drawings.

ALPHA GEOSCIENCE
Proj. No. 05132

FIGURE 3
NYSDEC Sample Results 1983 - 1990
Tee Bird Country Club, Inc.
Town of Moreau, New York

Saratoga County, New York

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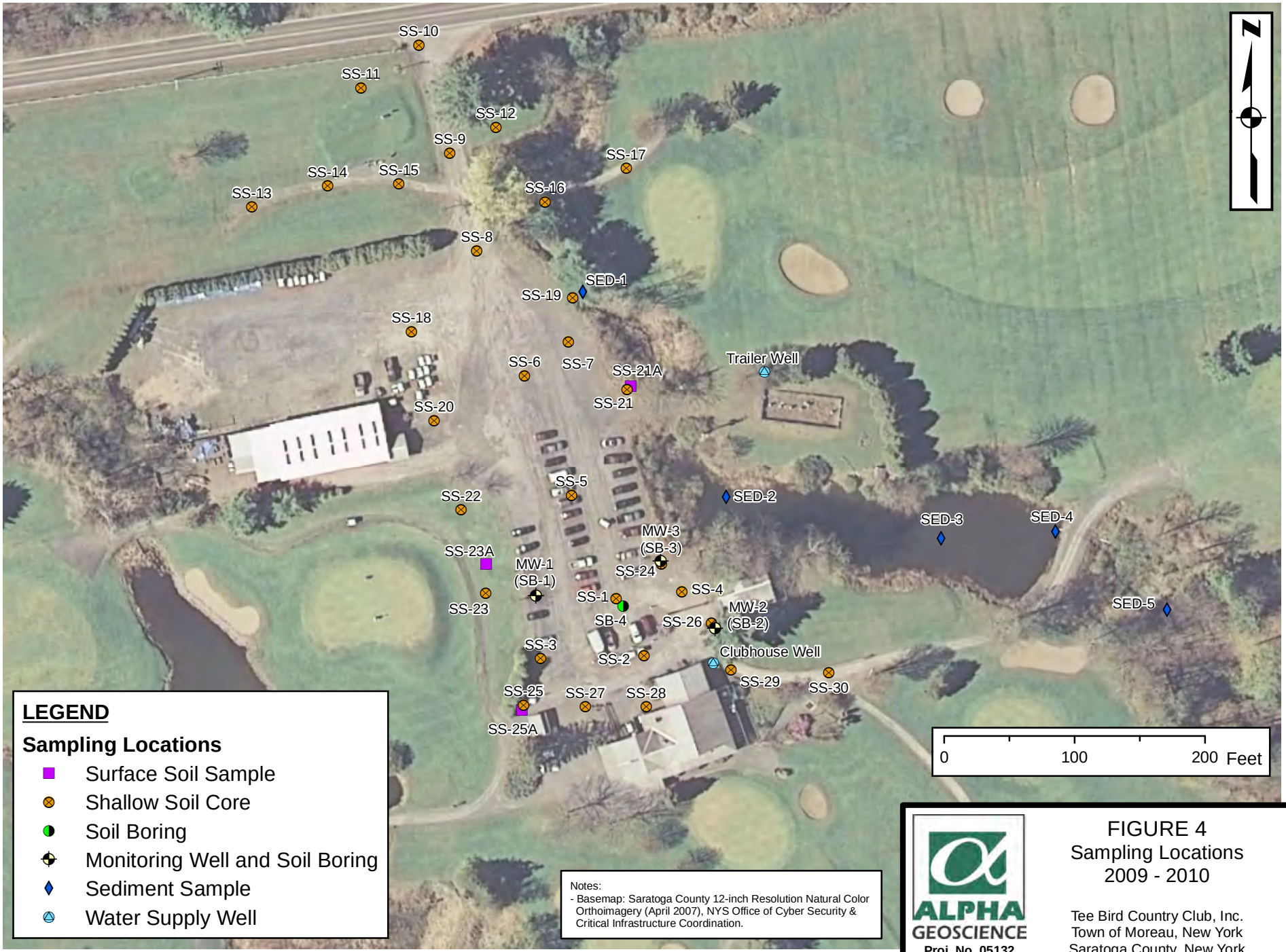

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FIGURE 4
Sampling Locations
2009 - 2010

Tee Bird Country Club, Inc.
Town of Moreau, New York
Saratoga County, New York

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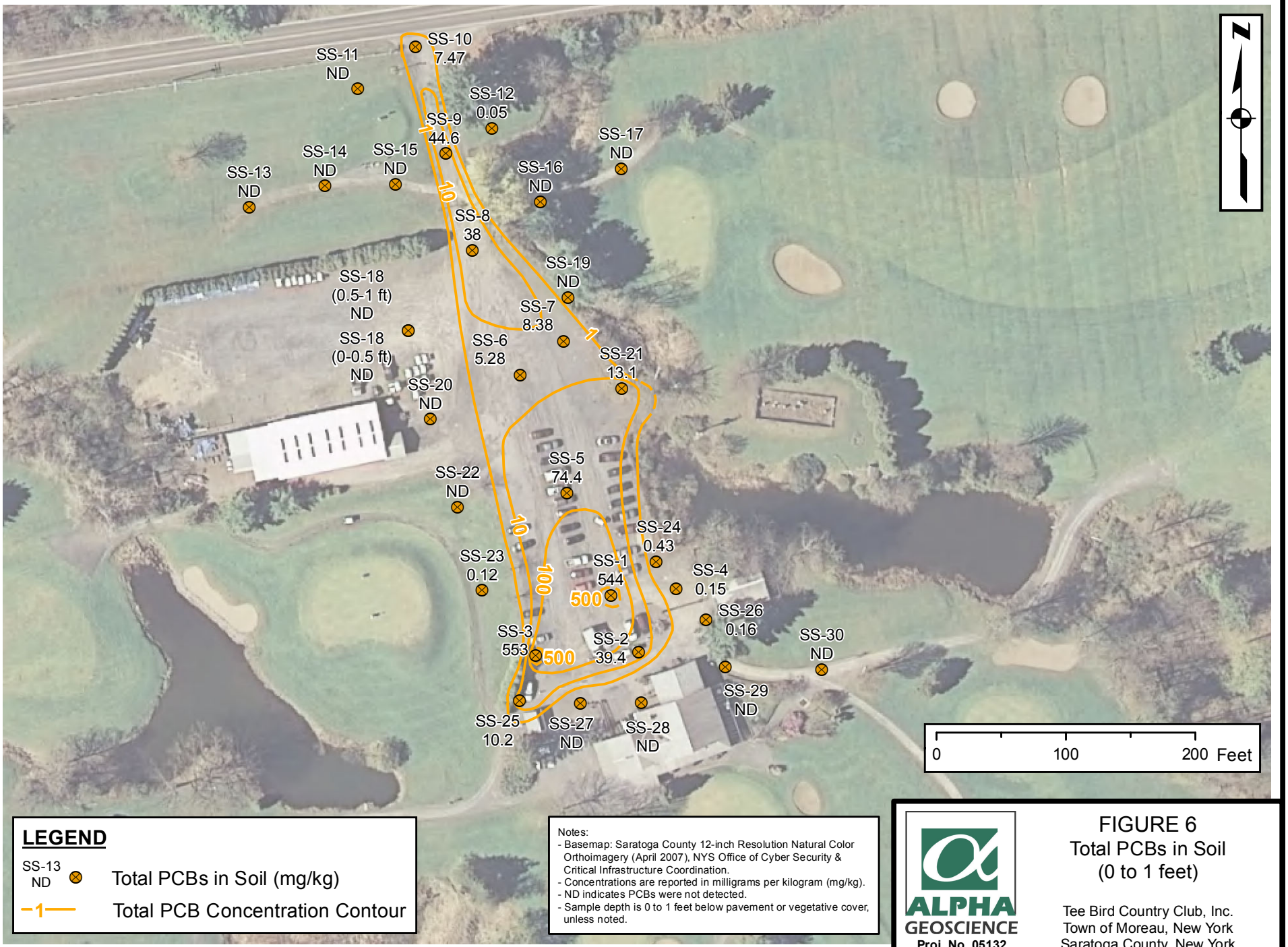

LEGEND

SS-13 ND — Total PCBs in Soil (mg/kg)

1 — Total PCB Concentration Contour

Notes:
- Basemap: Saratoga County 12-inch Resolution Natural Color Orthoimagery (April 2007), NYS Office of Cyber Security & Critical Infrastructure Coordination.
- Concentrations are reported in milligrams per kilogram (mg/kg).
- ND indicates PCBs were not detected.
- Sample depth is 0 to 1 feet below pavement or vegetative cover, unless noted.

ALPHA GEOSCIENCE
Proj. No. 05132

FIGURE 6
Total PCBs in Soil (0 to 1 feet)

Tee Bird Country Club, Inc.
Town of Moreau, New York
Saratoga County, New York

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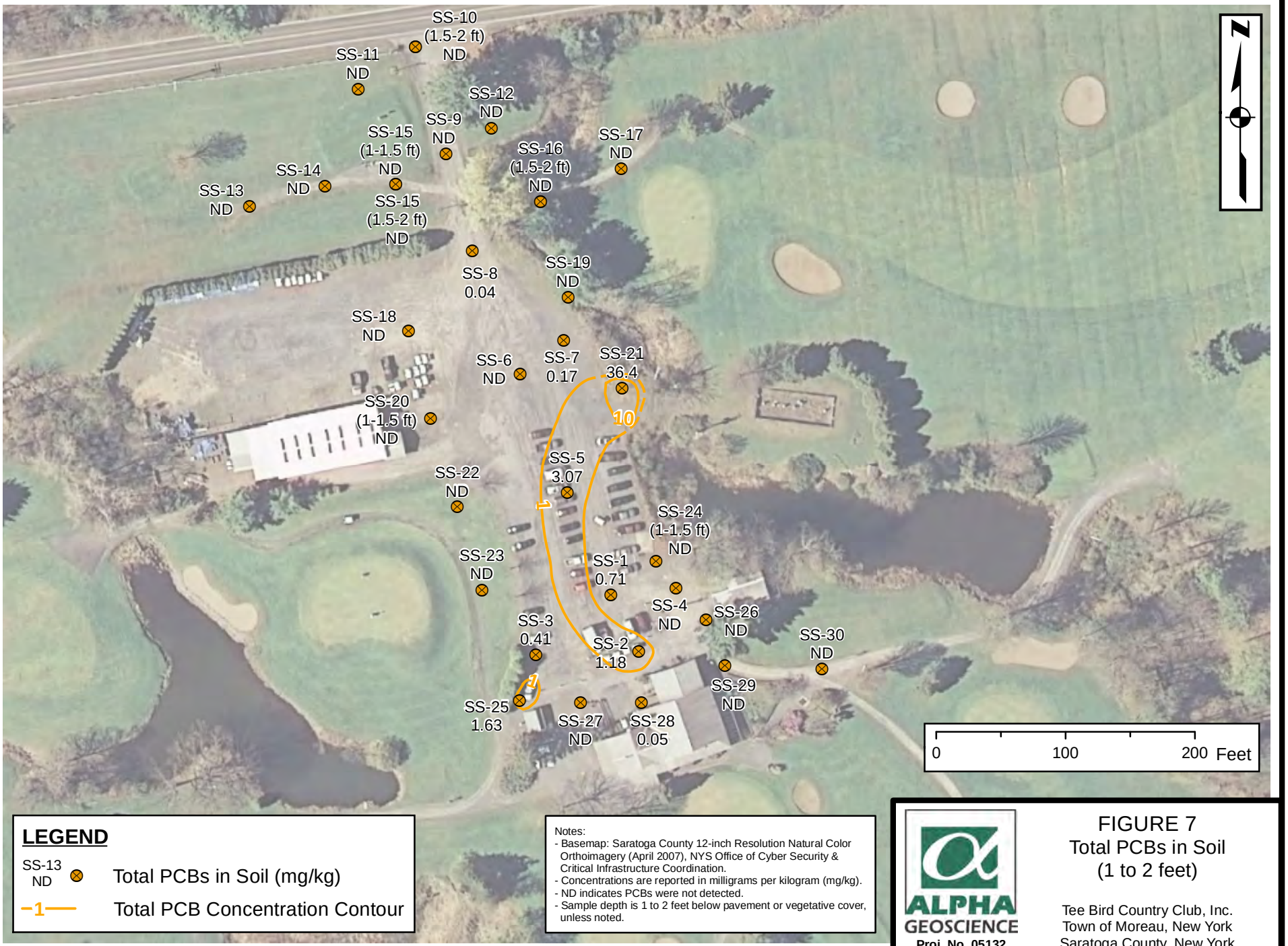

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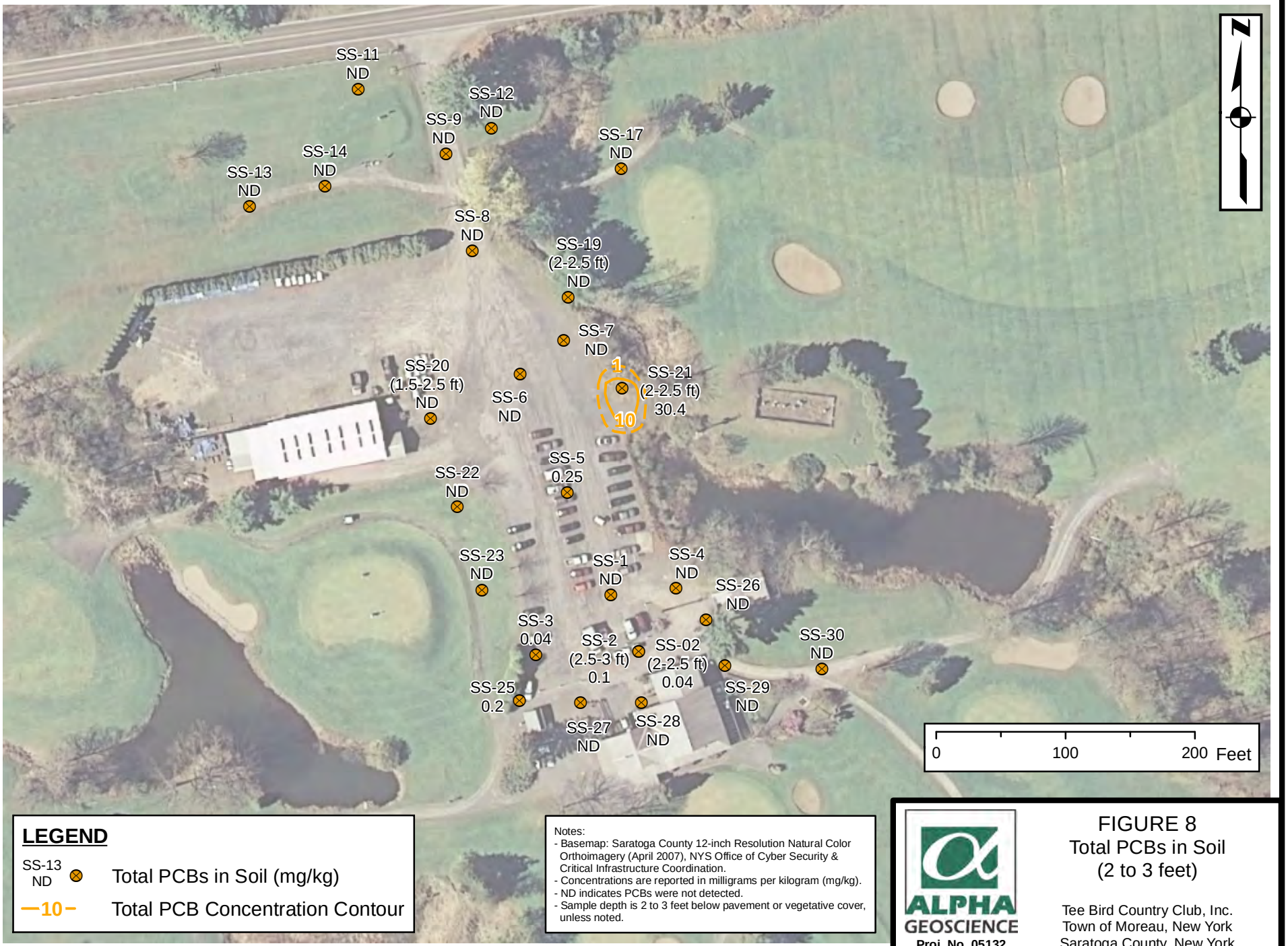

LEGEND

SS-13 ND — Total PCBs in Soil (mg/kg)

10 — Total PCB Concentration Contour

Notes:
- Basemap: Saratoga County 12-inch Resolution Natural Color Orthoimagery (April 2007), NYS Office of Cyber Security & Critical Infrastructure Coordination.
- Concentrations are reported in milligrams per kilogram (mg/kg).
- ND indicates PCBs were not detected.
- Sample depth is 2 to 3 feet below pavement or vegetative cover, unless noted.

ALPHA GEOSCIENCE
Proj. No. 05132

FIGURE 8
Total PCBs in Soil (2 to 3 feet)

Tee Bird Country Club, Inc.
Town of Moreau, New York
Saratoga County, New York

Path: Z:\projects\2005\05121-05140\05132 - TeeBird PCBs\Figures and Drawings\GIS\PCBs_2-3.mxd
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APPENDIX A
Boring Logs

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SB-1/MW-1** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/ B. Stelmack Start/ 12/15/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 3" casing

Sampling Method: Macrocore 2" x 5' Well Installed? Yes, MW-1

Elevation/Ground Surface: 102.52 (site datum)

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	NS				No sample to 5.0'
2				2.0'	
3					
4					
5	S-1	0.6	36	Gray to brown varved clay	Lab sample submitted from 5-6' interval
6					
7					
8					
9					
10				10.0'	
11	S-2		60	Gray clay with occasional fine to medium sand and gravel or silty sand lenses	wet at 12.5' based on color change
12					
13					2" sand lense at 13'
14					
15	S-3		60		
16					
17					3" silty fine sand seam at 17.3'
18					
19					very fine to fine silty sand at 19.8'
20					

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-2/MW-2

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/ B. Stelmack Start/ 12/15/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? Yes

Elevation/Ground Surface:

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1				Brown fine to medium sand with trace gravel; moist; no odor	No sample from 0-4' Stratigraphy based on SS-26
				1.0'	
2				Gray to brown varved clay with occasional silt partings; moist; no odor	
3					
4					
5	S-1	0.5			Soil sample collected for laboratory analysis from the 4-5' interval
6					
7					
8					
9					
10				Silt partings became more frequent with depth	wet at 10'
11					
12	S-2				
13					
14					
15				15.5'	
16				Brown silty very fine Sand; wet; no odor	
17	S-3				
18					
19					
20					

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID. SB-2/MW-2

Project Number/Name: 05132/Tee Bird

Location: Moreau, NY

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				20.7'	
21				Brown interbedded clay and silty fine sand; wet; no odors	
22	S-4				23' change to dark gray
23					
24					
25				25.0'	
				Bottom of Boring	
					Matrix spike/matrix spike duplicate MS/MSD 091215 submitted from 4-5' interval

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-3/MW-3

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/ B. Stelmack Start/ 12/15/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? Yes

Elevation/Ground Surface:

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1–4				2.0'	No sample from 0-5' Stratigraphy from SS-24
4–10	S-1	0.4	60	Brown to gray varved clay with occasional silt and fine sand partings; moist; no odor	Sample from 4' - 5' submitted to lab for analysis wet at 10'
10–15	S-2		60		14.5' - 15' fine sand silt & layer
15–20	S-3		40	Brown to dark gray silty fine sand; wet; no odors	17' - 18' fine sand silt & layer

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID. SB-3/MW-3

Project Number/Name: 05132/Tee Bird

Location: Moreau, NY

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
21				21.5'	
22	S-4		36	Dark gray interbedded silty fine sand and clay; wet; no odors	
23					
24					
25				25.0'	
				Bottom of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SB-4** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/ B. Stelmack Start/ 12/15/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: 102.52 (site datum)

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	NS			Broken pavement and gravel subbase 0.6' Dark brown fine to coarse sand with trace gravel; moist; odors to 1.3'	No sample to 0 -4' stratigraphy from SS-1
2					
3				2.5' Brown to gray varved clay with silt and fine sand partings; dense; moist; no odors	
4					
5					Samples from 4-5' and 5-6' interval submitted for laboratory analysis
6	S-1	0.4	48		
7					
8					
9					
10					
11	S-2		60		
12				12.0' Brown very fine to fine sand and silt; wet; no odor	Water at ~12' based on color change
13				13.0' Gray silty clay; wet; no odors	
14					
15				15.0' Bottom of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, J. Snyder)

Geologist/Hydrogeologist: S. Hulseapple Start/ 8/19/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	ND	42	Broken pavement and gravel 0.6' Dark brown fine to coarse sand with trace gravel; moist; odors grades to light brown at 1.5 ft no odor 2.5' Brown to gray varved clay with silt and fine sand partings; dense; moist; no odor 5.0'	Black staining and apparent PCB oil odors from 0.6 to 1.5'
2		ND			
3		ND			
4					
5				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0'below the pavement and gravel sub-base.

DEC collected split samples for PCBs and pesticides for all three intervals

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
ALPHA GEOSCIENCE Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-2

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, J. Snyder)

Geologist/Hydrogeologist: S. Hulseapple Start/ 8/19/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Pavement and gravel; pavement broken 0.2'	
1		ND		Brown fine to medium sand with trace coarse gravel; moist	Stained black to gray with apparent PCB oil odor 0.1 to 1.6'
2	1	ND	42	2.5'	
		ND		Brown to gray varved clay with silt and very fine sand partings; dense; moist; no odors	
3		ND			
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0', 2.0'-2.5', and 2.5'-3.0' below the pavement and gravel sub-base.

DEC collected split samples for PCBs and pesticides for all four intervals.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-3

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, J. Snyder)

Geologist/Hydrogeologist: S. Hulseapple Start/ 8/19/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Broken pavement and gravel 0.2'	Mild, apparent PCB oil odor at surface beneath pavement and gravel with light gray staining to 1.3'
1		ND		Dark brown medium to coarse sand, trace gravel, moist	
2		ND	42	2.5'	
3	1	ND		Brown to gray varved clay with silt to fine sand partings; dense; moist; no odors	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

MS/MSD 090819 submitted from the 2-3' interval

DEC submitted split sample from 0-1 and 1-2' intervals

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-4** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, J. Snyder)

Geologist/Hydrogeologist: S. Hulseapple Start/ 8/19/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Beneath as phalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Broken pavement and under gravel 0.2'	No odors
1		ND		Brown medium to coarse sand, trace gravel; moist; no odor 1.5'	
2		ND	60		
3	1	ND		Gray brown varved clay with silt and fine sand partings; dense; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

Field duplicate FD090819 submitted to lab from 1-2' interval

DEC submitted split sample from 0-1' interval

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-5

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack

Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Beneath asphalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Broken pavement and gravel subbase 0.5'	
1	1	0.7	48	Dark brown fine to coarse sand with trace gravel; moist 2.0'	Slight staining and mild, apparent PCB oil odor from ~0.5' to 1.5'
2		0.5			
3		0.2		Brown to gray varved clay with silt and fine sand partings; moist; no odor 5.0'	
4					
5				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-6** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Beneath asphalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Broken pavement and gravel subbase 0.5'	
1	1	0.3	33	Dark brown fine to coarse sand with trace gravel; moist 1.7'	Slight odor and staining to 1.0'
2		0.3			
3		0.5		Brown to gray varved clay with silt partings; dense; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

Field duplicate DUP091214A submitted from 0-1.0' interval

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-7

Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Beneath asphalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Asphalt and gravel base 0.5'	
1		0.2		Brown fine to medium sand and gravel; moist; 3" clay seam at 0.8' [FILL]	Slight odor at 0.5 to 0.8'
2		NM	33	2.3'	Wet at 2.3'
3	1	0.2		Brown fine to medium sand; moist to wet; no odors	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

Matrix spike/matrix spike duplicate MS/MSD091214A submitted from 1-2' interval

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-8

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Beneath asphalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Asphalt and gravel subbase 0.5'	
1		0.2		Brown fine to medium sand with trace gravel; moist	Mild, apparent PCB oil odor to 1.0'
2		0.2	38		
3	1	0.3		Brown to gray varved clay with silt partings; dense; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-9

Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Beneath asphalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Asphalt and gravel base 0.5'	
1	1	0.3	36	Brown to dark gray fine to medium sand with trace silt and fine gravel	Light gray staining with slight humic odor to 2.5'
2		0.3		2.5'	
3		0.2		Brown fine to medium sand; wet; no odors	
4				4.0'	
5				Brown to gray varved clay 5.0'	
				Bottom of Boring	Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-10

Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack

Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Beneath asphalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Asphalt and gravel base 0.5'	
1	1	0.5	30	Brown fine to medium sand and gravel; moist 1.5'	Mild, apparent PCB oil odor from 0.5 - 1.5'
2		0.4			
3		0.5		Brown to gray varved clay; dense; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-1.5' and 1.5'-2.0' below the pavement and gravel sub-base.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-11** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: On golf course grounds

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				Top soil; roots 0.5'	No odors
1		0.8		Brown fine to medium sand, trace silt; moist; no odor 1.8'	
2		1.0	42		
3	1	0.2		Brown to gray varved clay with occasional silt partings; dense; moist; no odor	Wet at 3.0'
4				Turns wet and dark gray at 3.0'	
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0'

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-12

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack

Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5'

Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: On golf course grounds

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.1	32	Top soil; brown fine to medium sand with trace clay; moist; no odor 0.8'	
2		ND		Brown fine to medium sand; trace silt, moist; no odor 2.0'	Wet at 2.0'
3		0.1		Brown to gray varved clay; occasional silt partings; wet; no odor	
4					
5				5.0' Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0'.

Matrix spike/matrix spike duplicate MS/MSD 091214B submitted from the 1.0-2.0' interval

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-13

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of Asphalt cap along cart path

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.5	48	Gravel (2") Top soil to 6 inches grading into dark brown fine to medium sand with trace silt; moist; no odors 1.5'	No apparent PCB oil odors
2		0.4			
3		0.2		Brown to gray varved clay with occasional silt partings; dense; wet 5.0'	
4					
5				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the pavement and gravel sub-base.

DUP091214B submitted from the 0-1' interval

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-14

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of Asphalt cap beneath cart path

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
				2" gravel pavement Dark brown loamy top soil 0.5'	
1	1	ND	40	Brown fine to medium sand with trace silt; wet; no odor 1.5'	No odors
2		0.2			
3		0.2		Brown to gray varved clay with occasional silt partings; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	Soil Samples collected for laboratory analysis from 0'-1.0', 1.0'-2.0' and 2.0'-3.0' below the crushed gravel pavement.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-15

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack

Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off asphalt cap beneath cart path

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.6	24	2" crushed gravel; brown fine to medium sand; moist; no odor 1.0'	Poor recovery on 2 attempts no odors
		0.6			
2		1.4		Brown to gray varved clay with occasional silt partings; wet; no odor	
3					
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 1.5 and 1.5 to 2.0' below the crushed gravel pavement.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-16** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap along cart path

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.2 0.2 0.4	24	Crushed gravel 2"; brown fine to medium sand; trace silt; moist 0.8' Brown to gray varved clay with silt partings; dense; moist 5.0'	No odors
5				Bottom of Boring	Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 1.5 and 1.5 to 2.0' bgs.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-17

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap along cart path

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.8	40	Dark brown to brown fine to medium sand; moist; no odor	No odors
2		0.4		2.0'	
3		0.8		Gray to brown varved clay with occasional silt partings; moist; no odor	
4				5.0'	
5				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 1.5 and 1.5 to 2.0' bgs.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-18

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off asphalt cap near maintenance building

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	1.0 0.4 0.2	26	Crushed gravel 2"; brown fine to medium sand with trace silt; moist; no odors 1.0' Dark brown to gray varved clay; dense; moist; no odors 5.0'	No odors
2					
3					
4					
5				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-0.5', 0.5 - 1.0 and 1.0 to 2.0' below the gravel sub-base.

Matrix spike/matrix spike duplicate MS/MSD 091214C submitted from the 1-2' interval.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-19** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.8	30	Fine to medium sand with trace silt; moist; no odors 1.0'	Some gravel and roots in top 2" Not placed in sample jar.
2		0.4			
3		NM		Brown to gray varved clay; 1/2-inch sand seam at 1.5'; dense; moist; no odor	
4					
5				5.0' Bottom of Boring	Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 2.0 and 2.0 to 2.5' below the gravel sub-base.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-20** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap near maintenance shop

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	1.0 NM 0.7	33	Crushed gravel pavement (3") 0.5' Brown fine to medium sand with trace silt; moist; no odors 1.5' Brown to gray varved clay with occasional silt partings; moist; no odors 5.0' Bottom of Boring	No odors Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 1.5 and 1.5 to 2.5' below crushed gravel. Field duplicate DUP091214 submitted from 1.5 to 2.5' interval
2					
3					
4					
5					

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-21** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap near trailer foundation

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	1.0	30	Dark brown medium coarse sand with trace gravel; occasional pieces of shale and wood [FILL]	Mild, apparent PCB oil odor to ~1.0'
2		1.0		2.0'	
3		0.2		Brown to gray varved clay; moist; no odors	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 2.0' and 2.0 to 2.5'.

Field duplicate DUP091214D submitted from 0 to 1.0' interval

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-22

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap west of parking lot

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.4	60	1" top soil; fine to medium sand; trace silt; moist; no odors 1.0'	No odors
2		0.2			
3		0.5		Brown to gray varved clay with occasional silt partings; moist; no odor	
4					
5				5.0' Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 2.0' and 2.0 to 3.0'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-23

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap west of parking lot

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.3	60	1" top soil; fine to medium sand; trace silt; moist; no odors 1.0'	No odors
2		1.0			
3		0.4		Brown to gray varved clay with occasional silt partings; moist; no odor	
4					
5				5.0' Bottom of Boring	Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 - 2.0' and 2.0 to 3.0'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-24

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap near cart shed adjacent to SB-3/MS-3

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.5	18	Brown fine to medium sand; moist; no odors	Poor recovery on three attempts
1		0.2			
2				2.0'	
2				Clay (no recovery)	
3					
4					
5				5.0'	
				Bottom of Boring	Soil Samples collected for laboratory analysis from 0'-1.0' and 1.0 -1.5' .

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-25

Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap west edge of pavement

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.5	43	Brown to black fine to medium sand with little clay and trace gravel 1.0'	Very mild, apparent PCB oil odor to 1" below crushed ground cover
2		0.7		Reddish brown fine to medium sand; trace silt 2.0'	
3		0.3		Brown to gray varved clay with occasional silt partings; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 -2.0' and 2.0'-3.0' .

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-26

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: 3' from SB-2/MW-2 on east edge of pavement

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.4	40	2" gravel, brown fine to medium sand, trace gravel; moist; no odor 1.0'	No odors
2		1.1			
3		0.8		Gray to brown varved clay with occasional silt partings; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 -2.0' and 2.0'-3.0' .

Field duplicate DUP091215 submitted from 0-1' interval.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-27

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack

Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap near club house

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.9	30	1.5" gravel, brown fine to medium sand; little silt and clay; moist; no odor 1.0'	No odors
2		0.8		Reddish brown fine to medium sand; trace silt; moist; no odor 2.0'	
3		1.0		Gray to brown varved clay with occasional silt partings; moist; no odor	
4					
5				5.0'	
				Bottom of Boring	

2 attempts

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 -2.0' and 2.0'-2.5' .

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-28

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap near club house

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.7	40	1.5" gravel, fine to medium sand; little silt and clay; moist; no odor 1.0'	No odors
2		0.5		Reddish brown fine to medium sand; trace silt; moist; no odor 2.0'	
3		0.5		Gray to brown varved clay with occasional silt partings	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 -2.0' and 2.0'-3.0'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SS-29

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09
Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap along cart path

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.7	40	Crushed gravel and sand	No odors
2		0.5			
3		0.5		Brown to gray varved clay with silt	
4					
5				5.0'	
				Bottom of Boring	

Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 -2.0' and 2.0'-3.0'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SS-30** Page 1 of 1

Project Number/Name: Tee Bird/05132 Location: Moreau, NY

Drilling Contractor/Personnel: Zebra (J. Hutchins, M. Lavenski)

Geologist/Hydrogeologist: S. Hulseapple/B. Stelmack Start/ 12/14/09 Finish Date:

Drilling Equip/Method: Geoprobe 6620DT Size/Type of Bit: 2"

Sampling Method: Macrocore 2" x 5' Well Installed? No

Elevation/Ground Surface: NM

Depth to Ground Water from Ground Surface (Date): NM

REMARKS: Off of asphalt cap along cart path

Depth (Ft)	Sample No.	PID (ppm)	Recovery (in)	DESCRIPTION	REMARKS
1	1	0.4	60	Crushed gravel and sand 0.5'	Soil Samples collected for laboratory analysis from 0'-1.0', 1.0 -2.0' and 2.0'-3.0' below the crushed gravel.
2		0.2			
3		0.3		Brown to gray varved clay with occasional silt partings; moist, no odor	
4					
5				5.0'	
				Bottom of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

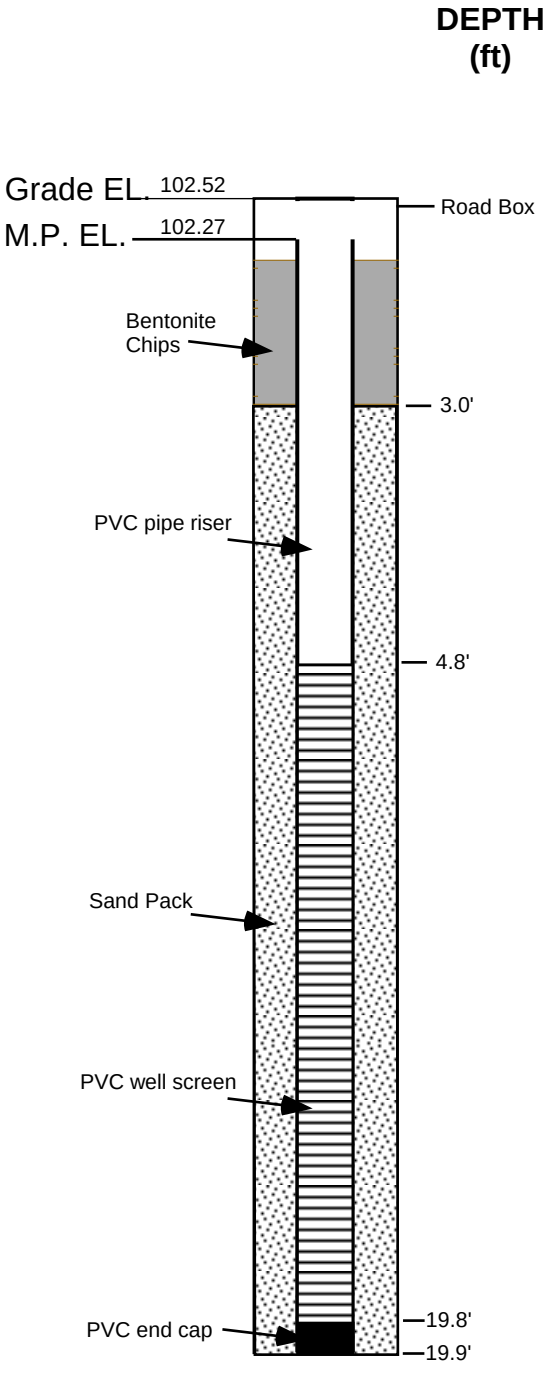
APPENDIX B
Monitoring Well Construction Logs

MONITORING WELL COMPLETION LOG

ALPHA GEOSCIENCE
679 Plank Road
Clifton Park, New York
(518) 348-6995

Well MW-1
Project Tee Bird
Project No. 05132
Client Tee Bird Country Club
Date Drilled 12/15/09
Date Developed 12/15/09

WELL CONSTRUCTION DETAILS



INSPECTION NOTES

Geologist S. Hulseapple
Drilling Contractor Zebra
Type of Well Monitoring Well
Static Water Level 7.98 Date 6/30/10
Measuring Point Top of PVC
Total Well Depth 19.9'

Riser Pipe
Material PVC Diameter 2"
Length 4.5' Joint Type flush-threaded

Screen
Material PVC Diameter 2"
Slot Size 0.010" Length 15'
Stratigraphic Unit Screened clay and silt

Packing
Sand X Gravel Natural
Amount Interval 3.0 - 19.9'

Seal
Type Bentonite Chips Interval 0.5 - 3.0'

Locking Case: Yes [ ] No [X]
Diameter

Notes:

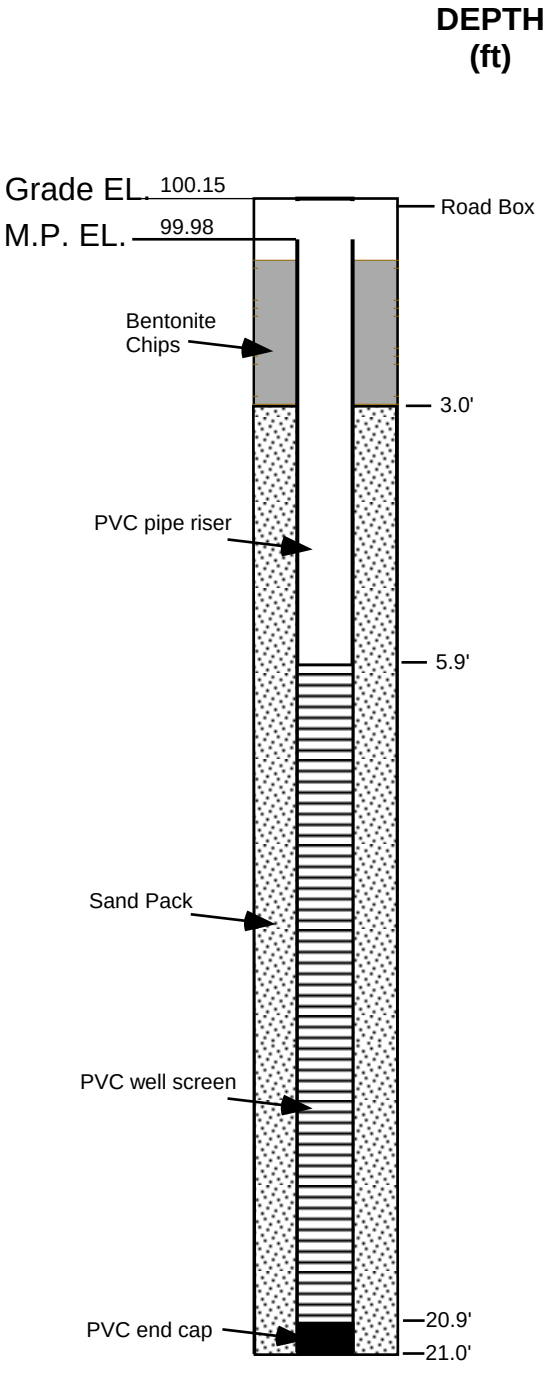
Well completed with a flush-mounted road box.
See soil boring SB-1 for stratigraphic log.

MONITORING WELL COMPLETION LOG

ALPHA GEOSCIENCE
679 Plank Road
Clifton Park, New York
(518) 348-6995

Well MW-2
Project Tee Bird
Project No. 05132
Client Tee Bird Country Club
Date Drilled 12/15/09
Date Developed 12/15/09

WELL CONSTRUCTION DETAILS



INSPECTION NOTES

Geologist S. Hulseapple
Drilling Contractor Zebra
Type of Well Monitoring Well
Static Water Level 9.96 Date 6/30/10
Measuring Point Top of PVC
Total Well Depth 21'

Riser Pipe
Material PVC Diameter 2"
Length 5.9' Joint Type flush-threaded

Screen
Material PVC Diameter 2"
Slot Size 0.010" Length 15'
Stratigraphic Unit Screened clay and silt

Packing
Sand X Gravel Natural
Amount Interval 3.0 - 21'

Seal
Type Bentonite Chips Interval 0.5 - 3.0'

Locking Case: Yes [ ] No [X]
Diameter

Notes:

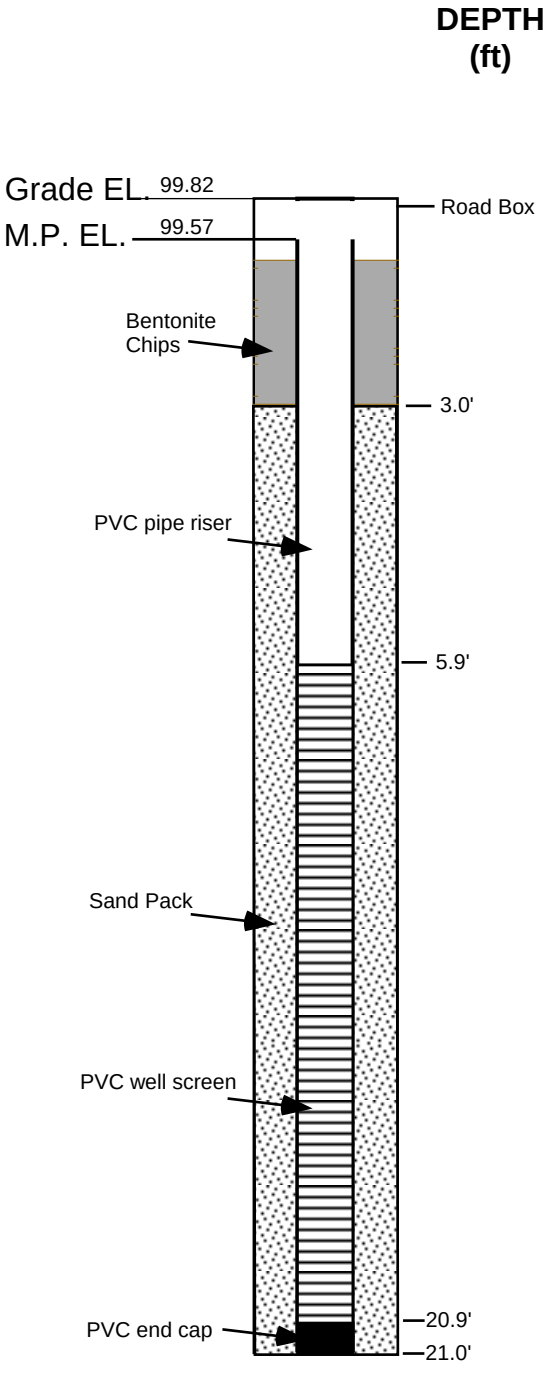
Well completed with a flush-mounted road box.
See soil boring SB-2 for stratigraphic log.

MONITORING WELL COMPLETION LOG

ALPHA GEOSCIENCE
679 Plank Road
Clifton Park, New York
(518) 348-6995

Well MW-3
Project Tee Bird
Project No. 05132
Client Tee Bird Country Club
Date Drilled 12/15/09
Date Developed 12/15/09

WELL CONSTRUCTION DETAILS



INSPECTION NOTES

Geologist S. Hulseapple
Drilling Contractor Zebra
Type of Well Monitoring Well
Static Water Level 7.03 Date 6/30/10
Measuring Point Top of PVC
Total Well Depth 21'

Riser Pipe
Material PVC Diameter 2"
Length 5.6' Joint Type flush-threaded

Screen
Material PVC Diameter 2"
Slot Size 0.010" Length 15'
Stratigraphic Unit Screened clay and silt

Packing
Sand X Gravel Natural
Amount Interval 3.0 - 21'

Seal
Type Bentonite Chips Interval 0.5 - 3.0'

Locking Case: Yes [ ] No [X]
Diameter

Notes:

Well completed with a flush-mounted road box.
See soil boring SB-3 for stratigraphic log.

APPENDIX C
Fish and Wildlife Impact Assessment
Decision Key

Appendix C Fish and Wildlife Resources Impact Analysis Decision Key	If YES Go to:	If NO Go to:	Comments
1. Is the site or area of concern a discharge or spill event?	13	2	PCB-containing oil was applied to the parking lot surface circa 1977. The parking lot was paved, under consent agreement with the NYSDEC, to encapsulate PCBs in place.
2. Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas.	13	3	Ground water was sampled and analyzed for PCBs, but no impacts were detected. Soil impacts were found only beneath or immediately adjacent to the asphalt cap.
3. Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	4	9	The site consists of the paved parking lot. Adjacent areas consist of golf course infrastructure and highly landscaped areas.
4. Does the site contain habitat of an endangered, threatened or special concern species?	Section 3.10.1	5	No rare plant or animal species or significant natural communities were identified on-site based on the NYSDEC's natural resources mapper application, as accessed on September 13, 2010 (see attached output).
5. Has the contamination gone off-site?	6	14	Impacts are limited to soils beneath or immediately adjacent to the asphalt cap.
6. Is there any discharge or erosion of contamination to surface water or the potential for discharge or erosion of contamination?	7	14	NA
7. Are the site contaminants PCBs, pesticides or other persistent, bioaccumulable substances?	Section 3.10.1	8	NA
8. Does contamination exist at concentrations that could exceed ecological impact SCGs or be toxic to aquatic life if discharged to surface water?	Section 3.10.1	14	NA

Appendix C Fish and Wildlife Resources Impact Analysis Decision Key	If YES Go to:	If NO Go to:	Comments
9. Does the site or any adjacent or downgradient property contain any of the following resources: i. Any endangered, threatened or special concern species or rare plants or their habitat ii. Any DEC designated significant habitats or rare NYS Ecological Communities iii. Tidal or freshwater wetlands iv. Stream, creek or river v. Pond, lake, lagoon vi. Drainage ditch or channel vii. Other surface water feature viii. Other marine or freshwater habitat ix. Forest x. Grassland or grassy field xi. Parkland or woodland xii. Shrubby area xiii. Urban wildlife habitat xiv. Other terrestrial habitat	11	10	NA
10. Is the lack of resources due to contamination?	Section 3.10.1	14	NA
11. Is the contamination a localized source which has not migrated and will not migrate from the source to impact any on-site resources?	14	12	NA
12. Does the site have widespread surface soil contamination that is not confined under and around buildings or paved areas?	Section 3.10.1	12	NA
13. Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resource? (See #9 for list of potential resources. Contact DEC for information regarding endangered species.)	Section 3.10.1	14	NA
14. **No Fish and Wildlife Resources Impact Analysis is needed.**			

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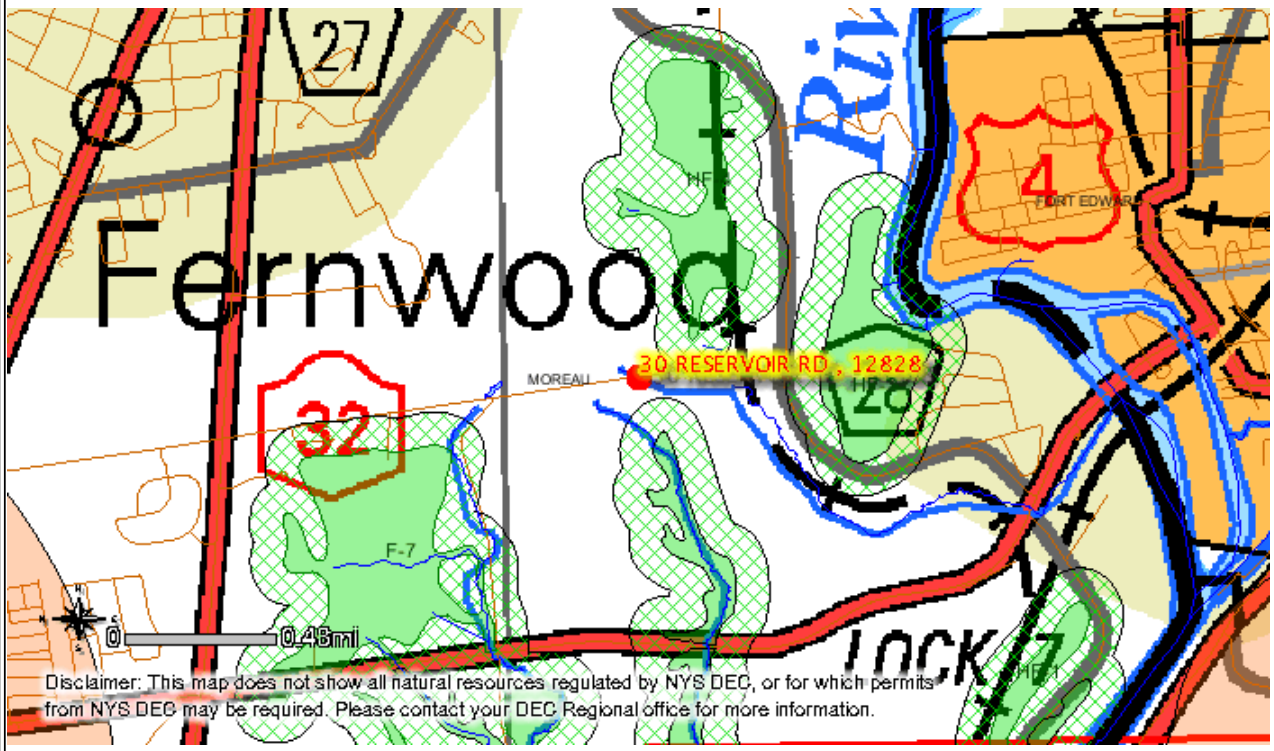
Environmental Resources Mapper Output for Tee-Bird CC



MinX: 609373, MaxX: 615104, MinY: 4792520, MaxY: 4789883

Visible Layers

- Classified Streams
- Classified Ponds
- State-Regulated Freshwater Wetlands
- Wetland Checkzone
- State-Regulated Freshwater Wetlands
- Rare Plants and Rare Animals
- Significant Natural Communities Buffered
- Natural Communities Nearby
- Significant Natural Communities
- Interstate Highways
- Adirondack Park Boundary
- Counties