

**CULTURAL RESOURCE MANAGEMENT REPORT
PHASE 1 RECONNAISSANCE SURVEY**

ONONDAGA LAKE PROJECT, UPLAND AND SHORELINE AREA

LAKESHORE COMPLEX

**TOWN OF GEDDES
ONONDAGA COUNTY
NEW YORK
MCDS 06707**

Prepared For:

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July 26, 2011

PHASE 1B RECONNAISSANCE SURVEY MANAGEMENT SUMMARY

PROJECT IDENTIFIER: Onondaga Lake Project, Lakeshore Complex

CULTURAL RESOURCE SURVEY TYPE: Phase 1 Archaeological Survey

LOCATION INFORMATION:

Route:

Minor Civil Division: Town of Geddes (MCD 06707)

County: Onondaga

SURVEY AREA: Lakeshore Complex

Size of Area: Approximately 4.4 acres (1.8 ha)

SENSITIVITY ASSESSMENT:

Prehistoric: Low.

Historic: Moderate.

ARCHAEOLOGICAL SURVEY METHODOLOGY:

Number of backhoe trenches: 0

Number of shovel test pits (STPs): 0

Surface survey: None

Geomorphological Analysis: Soil borings analyzed for depth of fill

RESULTS OF ARCHAEOLOGICAL SURVEY:

Number of prehistoric sites identified: 0

Number of historic sites identified: 0

Number of sites recommended for investigation: 0

Number of listed/eligible or potentially eligible sites that may be impacted: 0

RESULTS OF ARCHITECTURAL SURVEY:

Number of structures and/or properties in project area: 0

Number of known NR listed/eligible structures/districts: 0

Number of recommended eligible structures/districts: 0

Number of listed/eligible or potentially eligible structures that may be impacted: 0

AUTHOR/INSTITUTION: Christopher Hohman, Public Archaeology Facility, Binghamton University

DATE OF REPORT: July 26, 2011

SPONSOR: Honeywell

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I. INTRODUCTION

This report presents the Public Archaeology Facility's (PAF) results of the Phase 1 reconnaissance survey for the proposed Lakeshore Complex of the Onondaga Lake Project, Upland and Shoreline Area. This portion of the Onondaga Lake Project is located within the Town of Geddes in Onondaga County, New York (Figures 1-2, pp. 2-3). The Lakeshore Complex was not originally part of the Phase 1B work plan or the addendum work plan (Hohman and Versaggi 2010; Hohman 2010).

The proposed lakeshore office complex is being constructed for Honeywell and will be used to support the construction of the Onondaga Lake remedy. Construction of the complex will be coordinated with any Interim Remedial Measures being conducted at the site. A Health and Safety Plan (HSP) was completed by PAF in compliance with Parsons' HSP; PAF complied with both plans.

The research summarized in this document was performed under the supervision of Dr. Nina M. Versaggi, Director of PAF. Christopher D. Hohman served as project director and is the principal author of this report. The Phase 1 survey for the Lakeshore Complex was completed by Hohman through the analysis of soil borings and historic maps, as well as excavation plans for depth of impacts. All project maps were completed by Parsons. Maria Pezutti and Annie Pisani performed all related administrative duties.

The cultural resource survey included in this report applies only to potential archaeological and architectural resources. PAF understands that the United States Environmental Protection Agency (USEPA) has initiated government-to-government consultations with the Onondaga Nation in compliance with 36 CFR Part 800.4 (a)(b) regarding properties of religious and cultural significance. However, at this time, USEPA has not asked Honeywell, Parsons, or PAF to address the task of identifying religious or cultural properties. Therefore, no analysis has been performed as to whether or not the remediation of the areas included in this report may have an effect on Properties of Cultural and Religious Significance.

II. PROJECT DESCRIPTION

The area of potential effect (APE) for the Lakeshore Complex covers approximately 4.4 acres (1.8 hectares) along the western shoreline of Onondaga Lake in the Town of Geddes, Onondaga County, New York (Photos 1-2, p. 13). The proposed impacts include the construction of an asphalt parking and driveway; an asphalt parking lot; a gravel parking lot; a public access kayak launch; a building for the Onondaga Lake Operations Meeting Space; a project support building; and an area for construction support (Figure 14, p. 22). The maximum impacts for any buried utilities and foundations will be 1.2 m (4 ft) below the surface (Petroni, pers. comm 2011).

III. GENERAL PROJECT AREA

Figure 1 places the project in New York State and Onondaga County. Figure 2 shows the topographic context on the Syracuse West quadrangle.

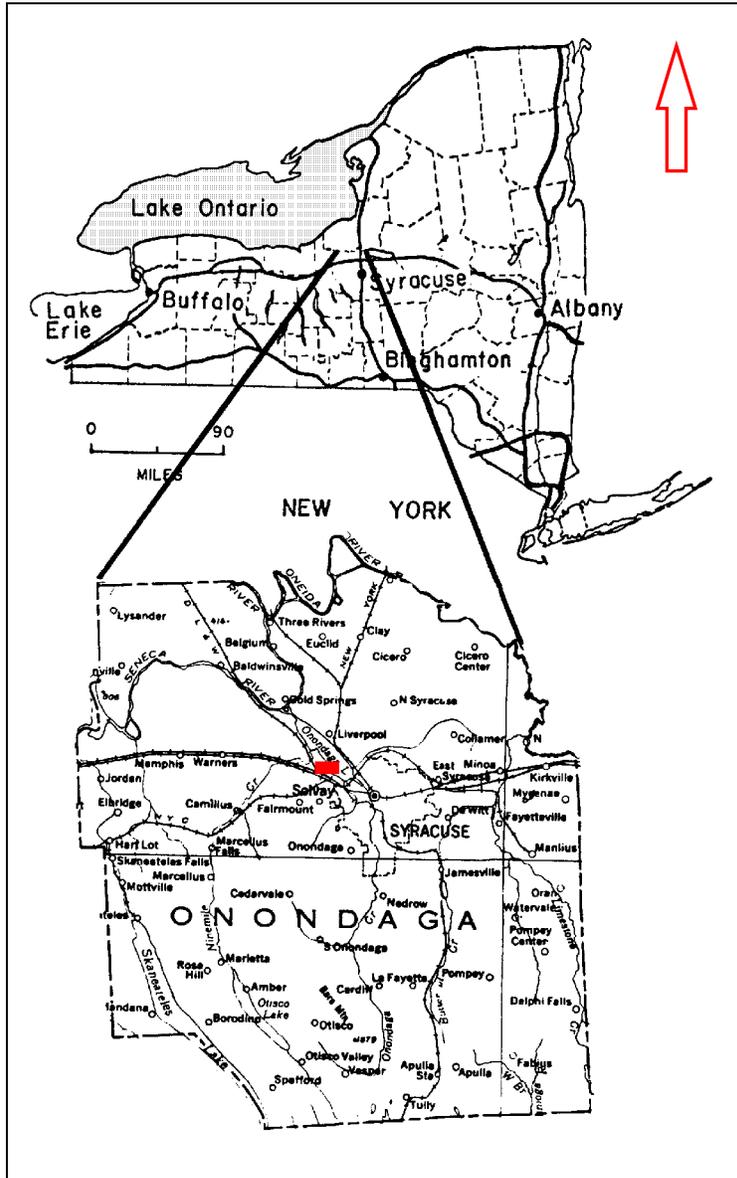


Figure 1. Location of the proposed Lakeshore Complex of the Onondaga Lake Project (Upland and Shoreline Area) in New York State and Onondaga County.

IV. BACKGROUND RESEARCH

Background research was completed previously for the area of the Lakeshore Complex as part of the Phase 1A survey, with supplemental information added to this report. The background research was conducted on the environment, precontact and postcontact history of the project area. This research addressed the types of sites likely to be located in the project area based on the results of site file checks, historic maps, county histories, archival documents, and settlement patterns around Onondaga Lake.

4.1 Site Files Search

The site files search indicated that the area to the west and to the south of Onondaga Lake, as well as within 3.2 km (2 mi) radius of the proposed Lakeshore Complex, has a long history of land use and settlement during the centuries and millennia prior to European contact. An extensive archaeological record exists from as early as the Late Archaic period (4000-1500 B.C.) and continuing through the Late Woodland period (A.D. 1000-1500) in the vicinity of Onondaga Lake. Arthur C. Parker (1920) noted “traces of occupation” and a number of projectile points along Ninemile Creek (Hohman 2004; Hohman and Versaggi 2010). The sites around the lake and the adjacent waterways also include campsites, hamlets or villages, burial mounds, and an earthwork (Hohman 2004). The area around Onondaga Lake was important not only for the resources (e.g. potable water, edible plants, medicinal plants, wood, bark, animals, fish, etc.) found within and adjacent to the lake, but also for advantageous locations of villages and special use areas.

There are no architectural resources within the project area that were previously determined as eligible for the National Register of Historic Places (www.oprhp.state.ny.us/nr/main.asp).

4.2 Environmental Setting

The APE for the Lakeshore Complex is located along the western shoreline of Onondaga Lake, southeast of Wastebeds 1-8 (Figures 14, p. 22) in the Town of Geddes, Onondaga County, New York. The total APE is approximately 4.4 acres (1.8 hectares). The proposed Lakeshore Complex is situated at an elevation of approximately 111 m (365 ft) ASL. Historic maps suggest that much of the lakeshore complex is to be constructed on fill on top of precontact period wetlands (on the edge of the former shoreline) or on top of the an area that was under standing water during precontact and postcontact periods (Figures 3-6 and 9-14). Much of the fill appears to have been placed in the area of the proposed lakeshore complex in the mid 20th century. Detailed analysis of boring logs is discussed in Section VI, p. 20.

4.3 Precontact Period History

The area around Onondaga Lake has a long history of land use and settlement during the centuries and millennia prior to European contact. An extensive archaeological record exists from as early as the Late Archaic period (4000-1500 B.C.), and continuing through the Late Woodland period (A.D. 1000-1500). The known sites in the vicinity of Onondaga Lake are either located around Onondaga Lake or adjacent to several major waterways that flow into or out of the lake. These sites include: traces of occupation, campsites, hamlet or villages, burial mounds, and an earthwork (Hohman 2004). These known sites suggest that the area around Onondaga Lake was important for the resources (e.g., potable water, edible plants, medicinal plants, wood, bark, animals, fish, etc.) found within and adjacent to the lake, as well as for the location of villages, and special use areas.

It is likely that the perimeter of the lake included low-lying wetlands (as shown in Figure 5, p. 9), composed of water-saturated muck soils, and grasses, ferns, and reed-like vegetation. While wetlands are important natural water features that attract wildlife, and promote the growth of certain types of edible and non-edible plants of importance, it was the higher, dry land nearby that would have contained camps, larger residential sites, and even the short-term stations where the resources collected from these water features would be processed. Wetlands are fragile environments that suffer from disturbance to their ecosystems. It is unlikely that evidence of precontact landuse would be found within wetlands.

Precontact Sensitivity Assessment

Consultation with members of the Onondaga Nation determined that all areas of the lake were used for important tasks. The area adjacent to Onondaga Lake is highly sensitive for precontact cultural resources. These could include a variety of long-term settlements, special use areas, short-term camps, and resource procurement and processing stations related to the collection of salt, black ash staves, and an array of other plant, animal, and fish resources common along the edge of a lake and along a major waterway flowing into the lake. This sensitivity is subject to change depending on the land modifications that have occurred through time that would have impacted the archaeological remains of these activities. Because much of the shoreline on the late 18th century map is shown as swamp and sedge (which are grasses commonly found associated with wetlands), and wetlands are fragile environments, it is unlikely that evidence of precontact landuse would be found within these wetlands.

*Onondaga Nation's Spiritual and Cultural History of Onondaga Lake*¹

The region of Onondaga Lake and the Onondaga Lake watershed has been our homeland since the dawn of time. We have been a steward of Onondaga Lake since time immemorial and will continue to do so forever, as that is what has been mandated from the Gayanashagowa, the Great Law of Peace. In the 1794 Treaty of Canandaigua the United States government recognized Onondaga Lake as part of our aboriginal territory.

The Lake is the spiritual, cultural and historic center of the Haudenosaunee Confederacy. Over one thousand years ago, the Peacemaker brought the Mohawk, Oneida, Onondaga, Cayuga, and Seneca Nations together on the shores of Onondaga Lake. At the lakeshore, these Nations accepted the message of peace, laid down their arms, and formed the Haudenosaunee Confederacy. The Confederacy was the first representative democracy in the West.

To symbolize the Confederacy, the Peacemaker planted a white pine, the Tree of Peace, on the shore of Onondaga Lake. It is understood that the Peacemaker chose the white pine because the white pine's needles are clustered in groups of five, just as the five founding Nations of the Confederacy clustered together for strength. The boughs of the white pine represent the laws that protect all the people. An eagle was placed at the top of the tree to watch for danger from without and within. Four white roots of peace reach out in the four directions towards anyone or any Nation who wishes to come under this tree of peace.

As the birth place of the Confederacy and democracy, the Lake is sacred to the Haudenosaunee. The Onondaga Nation has resided on the Lake and throughout its watershed since time immemorial, building homes and communities, fishing, hunting, trapping, collecting plants and medicine, planting agricultural crops, performing ceremonies with the natural world dependent on the Lake, and burying our ancestors - the mothers, fathers and children of the Onondaga Nation. The Onondaga Nation views its relationship to this area as a place where we will forever come from and will return to.

It brings great sadness to the people of the Onondaga Nation that despite our long stewardship of the Lake and its watershed, it took only one hundred years of abuse to wreak havoc to the Lake, its tributaries and all the plants, animals and marine life that depend on the Lake and its watershed. Industry interfered with the Onondaga Nations's relationship to the land and disturbed the ancestors that were interred throughout the watershed - either by direct excavation or contamination, or indirect efforts such as construction on top of grave sites. We wish to bring about a healing between us and all others who live within our homelands around the lake. We must in order to protect the future generations "whose faces are looking up from the earth."

We are one with this land and this Lake. It is our duty to work for a healing of this land, and all of its waters and living things, to protect them, and to pass on a healthy environment to future generations - yours and ours.

¹The Onondaga Nation requested that the oral tradition concerning the significance of Onondaga Lake to the Onondaga and Haudenosaunee Confederacy be included in this report. The Onondaga Nation's statement may not necessarily reflect the views of the Public Archaeology Facility, Parsons, or Honeywell International Inc. Further, the inclusion of the Onondaga Nation's oral tradition shall not constitute an admission of any fact or law in any judicial or administrative proceeding. In addition, the statements and findings made in this report by Honeywell, Parsons, and the Public Archaeology Facility may not reflect the opinions and views of the Onondaga Nation, and do not constitute an admission by the Onondaga Nation of fact or law in any legal or other proceeding.

4.4 Postcontact Period History

At the time of European contact by the French, Dutch, and English, Onondaga Lake was part of the political, economic, and spiritual heartland of the Onondaga Nation of the Haudenosaunee (Iroquois) Confederacy. Much of the known Onondaga settlements were located to the southeast of Onondaga Lake, although between 1600-1625, the settlement of Kaneenda flourished to the south of Onondaga Lake at the mouth of Onondaga Creek (Bradley 1987).

European settlements developed slowly to the west of Onondaga Lake during the postcontact period. From the 17th century through the mid- to late-19th century, much of the area adjacent to Onondaga Lake was covered with salt marshes, which were used for the production of salt. However, these areas were less favorable locations for residential villages. Salt production allowed settlement in other areas around Onondaga Lake (Syracuse, Geddes, Salina) to grow and prosper through the mid-19th century. Within the general vicinity of the Lakeshore Complex, the area was identified as “Geddes Marsh” and “reclaimed land” in 1874 (Figure 10, p. 16). By 1898, a railroad spur from the Delaware, Lackawanna and Western Railroad had been constructed to the vicinity of the Syracuse Yacht Club (Figure 12, p. 18), which was constructed between 1898 and 1899 (Figure 11, p. 17). The club was a 2 story structure and was operational in 1910 (Figure 6, p. 11). By 1917, the yacht club had burned down. Nothing was present in the area in 1928 (Sanborn) or in 1938 (Hopkins; Figure 3, p. 5). Between 1947 and 1950 (USGS and Sanborn, respectively in Hohman 2004), additional fill had been placed in the vicinity of the former Yacht Club, creating a point along the west side of the lake.

Syracuse Yacht Club

The Syracuse Yacht Club was constructed between 1898 and 1899 on the western shoreline of Onondaga Lake to the south of Lake View Point. The yacht club consisted of a large clubhouse, as well as several boat houses, all of which were built on wooden piers driven into the lake bottom (Figures 7-8, p. 12). At a cost of \$30,000, the clubhouse was a massive wooden structure (more than two stories in height), which became one of area’s leading social centers. Luncheons and dinners were served daily to a membership that reached 2,000 at one time. By the 1910s, the yacht club also served as a boarding house. On May 10, 1917, a fire destroyed the clubhouse, reducing the large structure to ashes on top of the wooden piers. Nothing was salvageable within the clubhouse. At that time, there were up to 25 boarders within the clubhouse building. The boathouses, which did not burn during the fire, were used for several more years by owners who joined the Onondaga Yacht Club at the southeastern portion of the lake (Thompson 2002). Although it is not known how long these boathouses were used and what became of them, it is likely that they fell into disrepair and collapsed into the lake.



Photo 1. Facing west, shore of present day boat launch area and former location of Syracuse Yacht Club (from Hohman 2004).



Photo 2. Facing northwest, shore of boat launch area and former location of Syracuse Yacht Club (from Hohman 2004).

Postcontact Sensitivity Assessment

Much of the area adjacent to Onondaga Lake may have been used by Native Americans (specifically the Onondaga Nation) in the 17th century and beyond for a variety of purposes, including short-term camps, special use areas, and resource procurement/processing tasks. Consultation with members of the Onondaga Nation determined that all areas of the lake were used for important tasks. The area adjacent to Onondaga Lake or on the edge of Onondaga Lake would have been sensitive for a variety of long-term settlements, short-term camps, and resource procurement and processing stations related to tasks similar to those described in the Precontact section. This sensitivity is subject to change depending on the land modifications that have occurred through time that would have impacted the archaeological remains of these activities. Because much of the shoreline on the late 18th century map is shown as swamp and sedge (which are grasses commonly found associated with wetlands), and wetlands are fragile environments, it is unlikely that evidence of landuse prior to the 19th century would be found within these wetlands. The Syracuse Yacht Club was built over the lake (Figures 6-8, pp. 11-12) by 1899 and burned down in 1917. Following the burning of the Yacht Club in 1917, much of this area was filled in later during the mid 20th century. There could be a high sensitivity for resources associated with the Yacht Club at the base of Onondaga Lake if they survived the processes of fire, deterioration, and filling.

V. PHASE 1B METHODOLOGY

5.1 Project Walkover

A walkover of the project area by PAF personnel was conducted, in the summer of 2010 to determine how much of the APE would be accessible for subsurface testing, if needed, and to identify any cultural remains that were visible above the surface.

5.2 Soil Boring Analysis

Based on the work plan for the slurry pipeline (Hohman 2010), which is located just to the west of the project area for the Lakeshore Complex, it was determined that an analysis of soil borings that were previously taken in 2001 by Parratt Wolff would determine if construction would impact any remnants of the Syracuse Yacht Club. Based on these results, recommendations for field testing would be proposed.

VI. PHASE 1B RESULTS

6.1 Walkover

The project area consists primarily of brush and grass, as well as gravel driveways. No surface evidence of cultural resources was evident during the walkover.

6.2 Analysis of Soil Borings

Soil borings were previously taken in 2001 at several locations on the proposed Lakeshore Complex by Parratt Wolff for C&S Engineers (C&S 2003). The three soil borings were taken for monitoring wells (Appendix II, p. 31) and offer an insight into the soil stratigraphy across the Lakeshore Complex.

The soil boring for MW1 identified 2.4 m (8 ft) of sand on top of .6 m (2 ft) of sand and gravel with ash, cinders and silt. That soil horizon is located on top of .6 m (2 ft) of sand, gravel and wood. At 3.7 m (12 ft), marl was encountered. The marl extended to at least 4.9 m (16 ft) below the surface. The soil boring for MW2 identified 1.8 m (6 ft) of sand on top of 1.2 m (4 ft) of sand and metal shavings. Between 3 to 4.9 m (10 to 16 ft), the soil boring contained sand with ash, cinders and gravel; below 4.9 m (16 ft), marl was encountered. The soil boring for MW3 identified 1.2 m (4 ft) of sand on top of 1.2 m (4 ft) of sand and metal shavings. Between 2.4 and 4.3 m (8 to 14 ft) below the surface, sand, silt, cinders, ash and brick were encountered. Sand, cinders, and ash continued down to 4.9 m (16 ft) below the surface (Appendix II, pp. 26-31). It is probable that the cinders, ash, and brick are evidence of the Yacht Club burning in 1917, although it could also represent part of the fill that was placed in the area in the 1960s to create the present surface.

The soil borings for the three monitoring well locations suggest that there is at least 1.2 to 2.4 m (4 to 8 ft) of sand on top of fill and/or debris that may be associated with the burning of the former Syracuse Yacht Club. The majority of the possible debris appears to be located between 2.4 and 4.8 m (8-16 ft) below the surface.

VII. SUMMARY AND RECOMMENDATIONS

The background research indicated that the area of the Lakeshore Complex was either under Onondaga Lake or on the marshy shoreline of Onondaga Lake during the precontact and postcontact periods through the mid 20th century. From 1898 through 1917, the Syracuse Yacht Club extended out over the waters of Onondaga Lake in the vicinity of the project area for the Lakeshore Complex. However, in 1917, the Syracuse Yacht Club burned down. In the mid 20th century, fill was placed off the shore of Onondaga Lake filling in a portion of the area of the former Syracuse Yacht Club to create the present landform that extends into Onondaga Lake. The soil borings identified between 1.2 to 2.4 m (4 to 8 ft) of sand and fill on top of fill and/or the debris of the former Syracuse Yacht Club. Impacts for the foundation and buried utilities for the proposed Lakeshore Complex are expected to reach no more than 1.2 m (4 ft) in depth (Petrone, pers. comm. 2011) (Figure 14, p. 22). Therefore, the depth of the construction will not impact any of the former resources of the Syracuse Yacht Club. No further archaeological testing is recommended for the Lakeshore Complex.

APPENDIX I. REFERENCES

Bradley, James W.

1987 *Evolution of the Onondaga Iroquois: accommodating change: 1500-1655*. Reprinted in 2005 by the Board of Regents of the University of Nebraska.

C & S Engineers

2003 *Preliminary Site Assessment Report - Lake Pump Site, Town of Geddes, New York*.

Carrier, Richard

1998 *A Guidebook to the History of Onondaga Lake*. For the Onondaga County Parks, Office of Museums and Historical Sites.

Fagan, L.

1852 *Map of Onondaga County, New York*.

Hohman, Christopher D.

2010 *Work Plan Addendum for Onondaga Lake Project, Upland and Shoreline Area, Onondaga County, New York*. Public Archaeology Facility, Binghamton, New York.

2004 *Cultural Resource Management Report, Phase 1A Cultural Resource Assessment, Onondaga Lake Project, Onondaga Lake, Wastebed B and Wastebed 13, Towns of Camillus, Geddes and Salina and City of Syracuse, Onondaga County, New York*. Public Archaeology Facility, Binghamton University, Binghamton, New York.

Hohman, Christopher D. and Dr. Nina Versaggi

2010 *Cultural Resource Management Report, Phase 1B Archaeological Work Plan, Onondaga Lake Project, Upland and Shoreline Area, Wastebed 13, Geddes Brook IRM, Tributary of Geddes Brook, Ninemile Creek RI/FS, Shoreline Survey and Wastebed B/Harbor Brook IRM, Town of Camillus and Geddes, Onondaga County, New York*. Public Archaeology Facility, Binghamton, New York.

Hopkins, G.M.

1938 *Map of the City of Syracuse, Onondaga County, New York*. G.M. Hopkins Company, Philadelphia.

Parker, Arthur C.

1920 *The Archaeological History of New York*. New York State Museum Bulletin. State University of New York, Albany, New York.

Sweet, Homer

1889 *Map of Onondaga County, New York*. C.W. Burdeen, New York.

1874 *Map of Onondaga County, New York*. Walker Brothers and Company, New York.

Sanborn Fire Insurance Company

1950 *Insurance Maps of Syracuse, New York*. Sanborn-Perris, New York.

1928 *Insurance Maps of Syracuse, New York*. Sanborn-Perris, New York.

1910 *Insurance Maps of Syracuse, New York*. Sanborn-Perris, New York.

Thompson, Donald H.

2002 *The Golden Age of Onondaga Lake Resorts*. Purple Mountain Press, Fleischmanns, New York.

United States Department of Agriculture

1977 *Soil Survey of Onondaga County, New York.* USDA, Washington, D.C.

1938 *Soil Survey of Onondaga County, New York.* USDA, Washington, D.C.

United States Geological Survey

1978/ 7.5 Minute, Syracuse West, NY quadrangle.

1973

1973 7.5 Minute, Syracuse West, NY quadrangle.

1947 7.5 Minute, Syracuse West, NY quadrangle.

1898 15 Minute, Syracuse, NY quadrangle.

APPENDIX II. SOIL BORING LOGS AND CORRESPONDING INFORMATION



November 27, 2001

Mr. John Holmquist
C&S Engineers, Inc.
1099 Airport Boulevard
North Syracuse, New York 13212

Re: 01302A
Monitoring Well Installations
Crucible Lake Front Site
Lakeland, New York

Dear Mr. Holmquist:

Enclosed are the logs of three groundwater monitoring well installations made for you for the above project.

Soil samples from this borings will be delivered to your office under separate cover.

The borings were made at points located by you. Drilling, sampling and the well installations were done in accordance with your instructions.

Thank you for this opportunity to work with you.

Very truly yours,

PARRATT - WOLFF, INC.

A handwritten signature in black ink, appearing to read 'JVP', is written over the typed name.

Joel V. Parratt
Project Manager
JVP/blo
enc:

P.O. Box 56, 5879 Fisher Road, East Syracuse, NY 13057 Telephone 315-437-1429 or 800-782-7260 FAX 315-437-1770
 P.O. Box 1029, 501 Millstone Drive, Hillsborough, NC 27278 Telephone 919-644-2814 or 800-627-7920 FAX 919-644-2817 A small circular logo with a recycling symbol is located at the end of the second line of contact information.

TEST BORING LOG



PROJECT Crucible Lake Front Site

LOCATION Lakeland, New York

GROUNDWATER DEPTH WHILE DRILLING 7.0'

BEFORE CASING REMOVED

AFTER CASING REMOVED

CASING TYPE HOLLOW STEM AUGER

HOLE NO. MW-1
 JOB NUMBER: 01302A
 SURF. EL.
 DATE STARTED 11/12/01
 DATE COMPLETED 11/12/01

N - NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" - ASTM D-1586 STANDARD PENETRATION TEST

C - NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/ OR PERCENT CORE RECOVERY

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NO	Rec	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH	
5.0	0.0'-	1		3 5		Brown-tan moist stiff SILT and fine to coarse SAND, some fine to medium gravel, trace roots	2.0'	
	2.0'-			9 8	14			
	2.0'-	2		6 6				
	4.0'-			8 10	14			
WL ▼	4.0'-	3		14 18		Brown dry to wet medium dense fine to coarse SAND, some to little gravel, trace to some silt	8.0'	
	6.0'-			9 17	27			
	6.0'-	4		14 10				
	8.0'-			6 4	16			
10.0	8.0'-	5		1 WH		Gray-black wet very loose fine to coarse SAND and fine to medium GRAVEL, some silt, little ash and cinders	10.0'	
	10.0'-			1 WH	1			
	10.0'-	6		1 2				
15.0	12.0'-			1 1	3	Gray wet very loose MARL, some fine to coarse sand, some fine to medium gravel, some wood fragment	12.0'	
	12.0'-	7		1 1				
	14.0'-			WH 1	1			
	14.0'-	8		WH WH				
20.0	16.0'-			1 1	1	Gray wet very loose fine MARL	16.0'	
						Bottom of Boring		
								Note: Installed 2" PVC 10 slot screen 15.0' to 5.0', 2" PVC riser to surface with flush mounted cover.
								WH indicates sampler penetrated under weight of 140# hammer.

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TEST BORING LOG



PROJECT Crucible Lake Front Site

LOCATION Lakeland, New York

GROUNDWATER DEPTH WHILE DRILLING 5.0'

BEFORE CASING REMOVED Added Water

AFTER CASING REMOVED

CASING TYPE HOLLOW STEM AUGER

HOLE NO. MW-2
 JOB NUMBER: 01302A
 SURF EL
 DATE STARTED 11/12/01
 DATE COMPLETED 11/12/01

N - NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" - ASTM D-1586 STANDARD PENETRATION TEST

C - NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING % OR PERCENT CORE RECOVERY

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NO	Rec	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'-	1		3 10		Brown moist medium dense to dense fine to coarse SAND, some fine to medium gravel, little silt, little brick fragments	4.0'
	2.0'			13 21	23		
	2.0'-	2	No	27 19			
	4.0'		Rec	12 12	31		
▼ 5.0	4.0'-	3		10 91		Brown wet very dense fine to coarse GRAVEL, some fine to coarse sand, little silt	6.0'
WL	6.0'-			18 20	109	Brown moist very dense to medium dense fine to medium SAND and METAL SHAVINGS, trace to some fine to coarse gravel	10.0'
	6.0'-	4		19 20			
	8.0'-			46 12	66		
	8.0'-	5		9 6			
10.0	10.0'-			5 5	11	Black-brown wet medium dense to dense to very loose fine to coarse SAND, some cinders and ash, little to some fine to medium gravel, trace to little silt	16.0'
	10.0'-	6		5 6			
	12.0'			7 13	13		
	12.0'-	7		17 16			
	14.0'			16 16	32		
15.0	14.0'-	8		7 1		Tan-gray wet very loose fine MARL	18.0'
	16.0'			1 1	2		
	16.0'-	9		1 1			
	18.0'			1 1	2	Bottom of Boring	18.0'
20.0						Note: Installed 2" PVC 10 slot screen 15.0' to 5.0', 2" PVC riser to surface with flush mounted cover.	

TEST BORING LOG



PROJECT Crucible Lake Front Site

LOCATION Lakeland, New York

GROUNDWATER DEPTH
WHILE DRILLING 5.0'

BEFORE CASING REMOVED Added Water

AFTER CASING REMOVED

CASING TYPE HOLLOW STEM AUGER

HOLE NO. MW-3
JOB NUMBER: 01302A
SURF. EL.
DATE STARTED 11/12/01
DATE COMPLETED 11/12/01

N - NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" - ASTM D-1586 STANDARD PENETRATION TEST

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SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NO.	Rec	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'-	1		5 12		Brown moist dense to medium dense fine to coarse SAND, some fine to medium gravel, little silt, little brick fragments	4.0'
	2.0'			19 32	31		
	2.0'-	2		27 14			
	4.0'			14 25	28		
▼ 5.0	4.0'-	3		50-.4'		Brown moist to wet very dense to medium dense fine to coarse SAND, some silt, little fine to medium gravel, trace metal shavings	8.0'
WL	4.4'						
	6.0'-	4		11 7		Brown wet medium dense to very dense fine to coarse SAND, some to little fine to coarse gravel, trace to some cinders, ash, brick fragments, trace silt	14.0'
	8.0'-			5 6	12		
	8.0'-	5		11 12			
10.0	10.0'			14 17	26		
	10.0'-	6		8 7		Gray wet very dense fine to coarse SAND and fine to medium gravel, some cinders and ash, trace silt	15.9'
	12.0'-			8 41	15		
	12.0'-	7		50-.4'			
	12.4'						
15.0	14.0'-	8		25 45		Bottom of Boring	15.9'
	15.9'			37 50-.4'	82		
20.0						Note: Installed 2" PVC 10 slot screen 15.0' to 5.0', 2" PVC riser to surface with flush mounted cover.	

P.O. Box 56, 5879 Fisher Road, East Syracuse, NY 13057 Telephone 315-437-1429 or 800-782-7260 FAX 315-437-1770
 P.O. Box 1029, 501 Millstone Drive, Hillsborough, NC 27278 Telephone 919-644-2814 or 800-627-7920 FAX 919-644-2817



3.3 Borings and Monitoring Well Installation

Three borings were conducted at the Site at locations shown on Figure 2. Borings MW-2 and MW-3 were through the fill materials. Boring MW-1 was advanced at a location upgradient of the fill areas where natural material was anticipated to be present. The following subsurface conditions were observed during the soil boring program.

MW-1 - Soils from surface to a depth of approximately 10 feet consisted of a fine to coarse sand and gravel that included minor amounts of ash and cinders. The consistency of the material was stiff to medium dense. At a depth of approximately eight feet, a very loose fine to coarse sand was encountered. Below this loose sand, the material graded to native lake sediment identified as marl which included small shells and shell fragments. The borehole was terminated at a depth of sixteen feet. Water saturated conditions were found at approximately seven feet in MW-1.

MW-2 - Soils from surface to a depth of approximately 16 feet consisted of a fine to coarse sand and gravel that included fragments of brick, ash and cinders, and metal shavings. The consistency of the material was dense to very dense. At a depth of approximately 16 feet in borehole MW-2, natural material, marl, was encountered. Water saturated conditions were found at approximately five feet in MW-2.

MW-3 - Soils from surface to a depth of approximately 15.9 feet (borehole bottom) consisted of a fine to coarse sand and gravel that included fragments of brick, ash and cinders, and metal shavings. The consistency of the material was dense to very dense. Very hard conditions were encountered at 15.5 feet resulting in spoon and auger refusal. Hence, augers were not advanced into the marl anticipated to be below a depth of 16 feet. Water saturated conditions were found at approximately five feet in MW-3.

PID screening of split spoon samples did not indicate the presence of VOCs in the MW-3 borehole. A trace VOC level was recorded for MW-1 at the 10-ft to 12-ft interval. Minor levels of VOCs (less than 10 ppm) were encountered in the MW-2 borehole below a depth of 8-ft.

Table 2 provides the complete results of the analytical laboratory testing of the samples. Soil

