APPENDIX 7.2
PHASE 1B ARCHAEOLOGICAL ASSESSMENT
PHASE IB
ARCHEOLOGICAL FIELD RECONNAISSANCE

HAVERSTRAW WATER SUPPLY PROJECT
TOWN OF HAVERSTRAW, ROCKLAND COUNTY, NEW YORK

HAA 4121-21

Submitted to:

HDR
ONE BLUE HILL PLAZA
FLOOR 12
PEARL RIVER, NEW YORK 10965-3104

Prepared by:

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SEPTEMBER 2008
MANAGEMENT SUMMARY

SHPO Project Review Number: Not yet assigned

Involved State and Federal Agencies: Army Corps of Engineers

Phase of Survey: Phase IB Archeological Field Reconnaissance

Location Information
  Location: Beach Road (County Route 108)
  Minor Civil Division: Town of Haverstraw (08740)
  County: Rockland

Survey Area
  Number of Acres Surveyed: 1.2 acres
  Length: 300 feet (91.1m)
  Width: 175 feet (53.3m)
  Number and Length of Backhoe Trenches: 3 trenches with a cumulative length of 103 feet (31.5 m) and an average depth of 4 feet (1.3m)

USGS 7.5 Minute Quadrangle Map: 1979 Haverstraw, New York 7.5' Topographic Quadrangle

Precontact Sensitivity: Low

Historic Sensitivity: Moderate to high for mid-19\textsuperscript{th} to 20\textsuperscript{th} century brickyard deposits

Recommendations: No further work

Report Authors: Sarah Fisher

Date of Report: September 2008
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2. 2004 NYS Office of Cyber Security and Critical Infrastructure Rockland County One-foot Resolution Natural Color Orthoimagery Showing Project Area and Existing Conditions
2a. Intake Site Map showing Proposed Construction and Trench Locations, and Photograph Angles

Photograph List

1. View east showing the location of the intake site. The pump house will be located on the far side of the fence. The parking area associated with the pump station will in the vicinity of the red boat. The trenches were located on the far side of the fence line.
2. View north, showing existing conditions and location of trenches. The Hudson River is to the right (east) of the picture.
3. Trench 1 in the foreground looking south, showing the corrugated steel culvert and Trench 2 in the background. Trench 2 looking south, showing the culvert between Trench 1 and 2.
4. Trench 2 looking north.
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1. Trench 1, West Profile
2. Trench 2, West Profile
3. Trench 3, North Profile
INTRODUCTION

Hartgen Archeological Associates, Inc. (HAA, Inc.) was retained by HDR to conduct a Phase IB archeological field reconnaissance for the proposed United Water Company Desalinization Plant project in the Town of Haverstraw, Rockland County, New York. The project requires permitting from the Army Corps of Engineers and the archeological study is being done to comply with Section 106 of the National Historic Preservation Act. This Phase IB archeological field reconnaissance adheres to the New York Archaeological Council’s (NYAC) Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State and this report conforms to the New York State Historic Preservation Officer’s (SHPO) Phase I Archaeological Report Format Requirements (NYAC 1994 and SHPO 2005, respectively).

A Phase IA literature review was previously completed for this project by HAA, Inc. in July 2008 (Map 1). The Phase IA study area included the intake site, the desalinization plant site, the raw water pipeline, and access roads. Phase IB archeological testing was recommended for the intake site and the western section of the access road connector, where new construction is proposed. The present Phase IB field reconnaissance study covers only the intake site (Map 2).

PROJECT INFORMATION

Location and Description

The intake site is located in the northern part of the Town of Haverstraw, Rockland County, New York (Maps 1 and 2a). It is roughly bounded by Beach Road (County Route 108), the Haverstraw Marina and the Hudson River.

Based on the results of the Phase IA literature review, the Phase IB survey focused on the intake site, just north of the marina (Map 2a). The Phase IA study area for the intake site encompassed 3.5 acres (1.4 ha) located on the west bank of the Hudson River near the intersection of River Road and 5th Street at Haverstraw Bay just north of the Haverstraw Marina. Based on the revised project plans for the proposed intake site, the APE is calculated at 1.2 acres (0.5 ha). The intake site will include an intake pumping station and appurtenant facilities such as parking areas and utilities. The boundary of the intake site extends into the Hudson River. To minimize impacts to sensitive riverine habitat, the intake pipe will be installed using directional drilling.

PHASE IA BACKGROUND

During the 19th and early 20th centuries, the intake site APE was part of a large brickmaking complex operated by U.F. Washburn Company. Examples of archeological remains associated with 19th and 20th century brickyards include docks, paving for kiln sheds, anchors for molding machines, large-diameter posts or post molds for kiln and molding sheds and horse barns. Brickyards also often included worker housing (with privies and other features) and storage sheds. Based on a comparison of historic maps depicting the brickyards and the project plans, the APE is situated in the former location of the kilns and kiln shed (Map 3). Expansive drying yards were located to the west of the APE.
PHASE IB FIELD RECONNAISSANCE

The Phase IB archeological field reconnaissance was completed on Monday, August 25, 2008 by Sarah Fisher, Justin DiVirgilio and Tom Macomber of Hartgen Archeological Associates Inc. Karen Hartgen, RPA was the Principal Investigator.

Field Methodology

Based on boring data at the proposed intake location (Appendix I), which indicated several feet of anthropogenic soils, backhoe testing was determined to be the appropriate methodology. The backhoe trenches were placed within and adjacent to the proposed pump station, where brick kilns and sheds were located during the 19th and early 20th century. Backhoe trench excavation was directed by the archeological crew. Trenches were excavated stratigraphically and soils were piled next to each trench and investigated for artifacts. Trench walls were cleaned and examined for artifacts in sections that were less than four feet (1.2 m) deep. Trenches greater than four feet (1.2 m) deep were documented from the surface. Trench walls were profiled and photographed, and their locations were mapped.

Results

Three backhoe trenches were excavated (Map 2a). The trenches measured 3 feet (0.9 m) wide and were excavated to the depth of the water table. The bore data indicated a relatively shallow water table. The trench excavation was conducted near low tide. In total, 103 linear feet (31.5m) of trenches were excavated, and average trench depth was 3.27 ft (1.4m). No remains of the brickmaking industry were found.

Trench 1 (Figure 1) was located on the east side of the existing access road, parallel to the shoreline of the Hudson River, and was 49 feet (15 m) in length (Map 2a). Water was encountered at a depth of 4.8 feet (1.5m) below the ground surface. The trench was excavated to a maximum depth of 5.2 feet (1.6m) below the ground surface. Due to the instability of the trench walls, the excavation was terminated. Subsequently, excavation was suspended at the depth of the water table.

The soil stratigraphy in Trench 1 consisted of several layers of fill, underlain by a thick band of sand. The soils from top to bottom, consisted of dark yellowish brown compact gravel and sand with crushed stone, pale brown compact sand with some gravel, mottled sandy gravel, and mottled clay. Trench 1 did contain a thin layer of dark grey silty clay, about 60cm below the surface (Level 3), which was not found in the other trenches (Figure 1). The bottom sand level was identified as slough in the bore logs (Appendix I). Slough refers to a type of swamp or shallow lake system, typically formed as or by the backwater of a larger waterway.

Trench 1 was terminated at the southern end where a corrugated steel culvert was encountered. Trench 2 (Figure 2) was placed on the same alignment as Trench 1 on the southern side of the culvert. The trench was 29.4 feet (9 m) in length. Trench 2 consisted of similar levels of fill, underlain by sand as in Trench 1. Trench 2 contained a vertical band of dark coarse sand in the southern end (Level IX), which was identified as a utility trench for the underground electrical lines. During the trenching, pockets of lighter colored sand and clay inclusions were identified within slough layer (Layer VII), indicating some disturbance to the soils.

Trench 3 (Figure 3) was placed 7.2 feet (2.2m) south and 4.9 feet (1.5m) east of the north end of Trench 1. Trench 3 was located perpendicular to the shoreline and was 22.9 feet (7.5m) long. Trench 3 consisted of similar levels of fill, underlain by sand as in Trench 1 and 2. In the western end of Trench 3, a modern garbage dump that contained wood, metal, rope and plastic bowling pins was uncovered (Figure 3).
RECOMMENDATIONS

No artifacts or archeological features related to the 19th and early 20th century brick-making activity were encountered. No precontact materials were identified. No further archeological investigation is recommended within the APE for the proposed raw water intake site.
Bibliography

Hartgen Archeological Associates, Inc. (HAA, Inc.)
   2008  Phase IA Literature Review and Archeological Sensitivity Assessment, Haverstraw Water Supply Project, Town of Haverstraw, Rockland County HAA # 4121-11

New York Archaeological Council (NYAC)

New York State Historic Preservation Officer (SHPO)

Sanborn-Perris Map Co.

United States Geological Survey (USGS)
Maps
Map 1

1979 USGS Haverstraw, New York 7.5' Topographic Quadrangle

Hartgen Archeological Associates, Inc.
September 2008
Phase IB Archeological Field Reconnaissance, Haverstraw Water Supply Project, Rockland County

Map 2

2004 NYS Office of Cyber Security and Critical Infrastructure Rockland County One-foot Resolution Natural Color Orthoimagery Showing the Project Area and Existing Conditions.

Hartgen Archeological Associates, Inc.

September 2008
Intake Site Map showing Proposed Construction, Trench Locations and Photograph Angles

Legend
- Photograph Angle
- Trench
- APE: Area of Potential Effect
- Project Area

Map 2a

Hudson River

Haverstraw Marina

Project Area

Trench 1
Trench 2
Intake Site APE
Culvert

Phase IB Archaeological Field Reconnaissance, Haverstraw Water Supply Project, Rockland County

September 2008

Hartgen Archeological Associates, Inc.
Phase IB Archeological Field Reconnaissance, Haverstraw Water Supply Project, Rockland County

Map 3

1910 Sanborn Map Co. Insurance Maps of Haverstraw Environs, Rockland County, New York
overlaid onto the Intake Site Map showing Proposed Construction and Trench Locations

Hartgen Archeological Associates, Inc. September 2008
Photographs
Photo 1: View east showing the location of the intake site. The pump house will be located on the far side of the fence. The parking area associated with the pump station will in the vicinity of the red boat. The trenches were located on the far side of the fence line.

Photo 2: View north, showing existing conditions and location of trenches. The Hudson River is to the right (east) of the picture.
Photo 3: Trench 1 in the foreground looking south, showing the corrugated steel culvert and Trench 2 in the background.
Photo 4: Trench 2 looking south, showing the culvert between Trench 1 and 2.
Photo 5: Trench 2 looking north.
Photo 6: Trench 3 looking west, showing the dump encountered in the west end of the trench. Excavation was suspended when the water table was reached.
Figures
Figure 3
Trench 3, North Profile

North View of Trench 3.
Appendix I: Bore Log Data
**GEOLOGIC LOG**

**OWNER:** United Water New York

**WELL NO.:** B-15

**PAGE:** 1 of 3 PAGES

**SITE LOCATION:** US Gypsum Plant
Haverstraw, New York

**DATE COMPLETED:** 7/10/2008

**SCREEN TYPE:** None
**DIAMETER:** N/A

**SLOT NO.:** N/A
**SETTING:** N/A

**DRILLING COMPANY:** ADT

**CASING TYPE:** None
**DIAMETER:** N/A

**DRILLING METHOD:** Hollow Stem Auger

**SAND PACK SIZE:** None

**SETTING:** N/A

**SAMPLING METHOD:** Split Spoon

**SEAL TYPE:** None

**REFERENCE POINT (RP):** Grade

**BACKFILL TYPE:** Bentonite and Portland Cement

**ELEVATION OF RP:** 1 foot above sea level

**STATIC WATER LEVEL:** 5.4 ft bg

**DATE:** 7/10/08

**SURFACE COMPLETION:** None

**DEVELOPMENT METHOD:** None

**DURATION:** N/A

**ESTIMATED YIELD:** N/A

**COMMENTS:**

**ABBREVIATIONS:** SS = split spoon
                        cmf = coarse/medium/fine
                        WOR = weight of rods
                        WOH = weight of hammer
                        EOB = End of boring

<table>
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<th>DEPTH (FEET)</th>
<th>SAMPLE TYPE</th>
<th>BLOW COUNT</th>
<th>RECOVERY (feet)</th>
<th>DESCRIPTION</th>
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<td>TO</td>
<td>SS</td>
<td>7-8-7-8</td>
<td>1.6</td>
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<td>SS</td>
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<tr>
<td>12-14</td>
<td>SS</td>
<td>4-1-1-1</td>
<td>2.0</td>
<td>0-0.5': Grey brown to brown cm SAND, clean; wet. 0.5-2.0': Dark grey SILT and f SAND, some organics (roots), little clay; wet.</td>
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<tr>
<td>14-16</td>
<td>SS</td>
<td>1-1-1-6</td>
<td>1.1</td>
<td>0-0.3': Slough. 0.3-1.1': Dark grey SILT and f SAND, wood fragments at 15.6', trace fossils; wet.</td>
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<td>16-18</td>
<td>SS</td>
<td>12-13-8-4</td>
<td>2.0</td>
<td>0-0.3': Slough. 0.3-0.6': Dark grey SILT and f SAND; wet. 0.6-0.9': Brown cm SAND, clean; wet. 0.9-1.8': Dark grey SILT and GRAVEL, some cmf sand; wet. 1.8-2.0': Dark grey m SAND, some silt, little clay; wet.</td>
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<td>SS</td>
<td>1/12&quot;-1/12&quot;</td>
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<td>0-0.2': Dark grey f SAND and SiLT; wet. 0.2-0.4': Brown f SAND, some silt; wet. 0.4-1.3': Dark grey silty CLAY, some organics, some mica flakes; moist.</td>
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<td>SS</td>
<td>1-5-1-1</td>
<td>2.0</td>
<td>0-0.4': Slough. 0.4-0.7': Dark grey silty CLAY, some organics; moist. 0.7-1.0': Dark grey clayey SAND and GRAVEL; wet. 1.0-2.0': Dark brown grading down to dark grey organic-rich silty CLAY; moist.</td>
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<td>WOH/24&quot;</td>
<td>0.5</td>
<td>Slough.</td>
</tr>
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<td>24-26</td>
<td>SS</td>
<td>WOR-WOH/18&quot;</td>
<td>2.0</td>
<td>Dark grey CLAY, soft, wood chips throughout (most concentrated from 24.8-25.2'); moist.</td>
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<td>26-28</td>
<td>SS</td>
<td>WOH/24&quot;</td>
<td>2.0</td>
<td>Dark grey CLAY with wood fragments, soft; moist.</td>
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<td>28-30</td>
<td>SS</td>
<td>WOR-WOH/18&quot;</td>
<td>2.0</td>
<td>Dark grey CLAY, massive, soft; moist.</td>
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<td>WOR-WOH/18&quot;</td>
<td>2.0</td>
<td>0-0.2': Dark grey f SAND, little silt; wet. 0.2-0.7': Dark grey silty CLAY, some fossils; moist. 0.7-0.8': Dark grey f SAND and SILT; wet. 0.8-2.0': Dark grey silty CLAY, massive, trace fossils; moist.</td>
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<td>WOR/18&quot;-2</td>
<td>2.0</td>
<td>Dark grey mf SAND, little gravel (red weathered sandstone, increasing with depth), trace clay; wet.</td>
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<td>45-47</td>
<td>SS</td>
<td>2-4-9-18</td>
<td>2.0</td>
<td>Dark grey mf SAND, little gravel (red weathered sandstone, concentrated at 47'); wet.</td>
</tr>
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<td>50-52</td>
<td>SS</td>
<td>WOR-1-2-2</td>
<td>1.3</td>
<td>0-0.4': Slough. 0.4-0.6': Dark grey clayey mf SAND; wet. 0.6-1.3': Dark grey silty CLAY (organic-rich at top); moist.</td>
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<td>2-2-4-11</td>
<td>1.8</td>
<td>0-1': Dark grey mf SAND, clean; wet. 1-1.8': Black mf SAND, clean; wet.</td>
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<tr>
<td>58</td>
<td></td>
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<td></td>
<td>Heavy drill chatter – BEDROCK.</td>
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<tr>
<td></td>
<td></td>
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<td>EOB.</td>
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# GEOLOGIC LOG

**OWNER:** United Water New York

**WELL NO.:** TB-1

**SITE LOCATION:** US Gypsum Plant
Haverstraw, New York

**DATE COMPLETED:** 7/14/2008

**DRILLING COMPANY:** ADT

**DRILLING METHOD:** Hollow Stem Auger

**SAMPLING METHOD:** Split Spoon

**OBSERVER:** Jonas Holliss

**REFERENCE POINT (RP):** Grade

**ELEVATION OF RP:** 1 foot above sea level

**SURFACE COMPLETION:** None

**REFERENCE POINT (RP):** Grade

**BACKFILL TYPE:** Bentonite and Portland Cement

**STATIC WATER LEVEL:**

**DEVELOPMENT METHOD:** None

**DURATION:** N/A

**ESTIMATED YIELD:** N/A

**ABBREVIATIONS:** SS = split spoon cmf = coarse/medium/fine WOR = weight of rods WOH = weight of hammer EOB = End of boring

<table>
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<td>0</td>
<td>SS</td>
<td>10-7-7-6</td>
<td>1.6</td>
<td>0-0.5': FILL, brown sand and gravel; dry. 0.5-1.6': FILL, buff silt, little clay; dry.</td>
</tr>
<tr>
<td>2</td>
<td>SS</td>
<td>6-13-12-12</td>
<td>1.1</td>
<td>0-0.5': FILL, buff silt, little clay; dry. 0.5-1.1': Brown cmf SAND, little silt; moist.</td>
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<tr>
<td>4</td>
<td>SS</td>
<td>4-5-4-4</td>
<td>1.3</td>
<td>0-0.7': Slough. 0.7-1.3': Brown cmf SAND, little silt; moist.</td>
</tr>
<tr>
<td>6</td>
<td>SS</td>
<td>3-2-1-1</td>
<td>1.5</td>
<td>Brown grading down to grey cmf SAND, little f gravel (quartz); wet at 6’.</td>
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<tr>
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<td>SS</td>
<td>3-1/12”-1</td>
<td>1.5</td>
<td>0-0.5': Slough. 0.5-1.5': Dark grey cm SAND, some f gravel (quartz), clean; wet.</td>
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<tr>
<td>10</td>
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<td>3-1-1-2</td>
<td>1.1</td>
<td>0-0.7': Dark grey cm SAND, some f gravel (quartz), clean; wet. 0.7-1.1': Dark grey SILT and f SAND; wet.</td>
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<tr>
<td>DEPTH (FEET)</td>
<td>SAMPLE TYPE</td>
<td>BLOW COUNT</td>
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| 12 14        | SS          | 2-2-2-2    | 1.85            | 0-0.4': Slough.  
               |             |            |                 | 0.4-1.85': Dark grey SILT and f SAND, trace clay; wet. |
| 14 16        | SS          | 4-7-10-10  | 1.0             | 0.0.4': Dark grey SILT and f SAND, trace clay; wet.  
               |             |            |                 | 0.4-1.0': Dark grey cm SAND, some f gravel (quartz); wet. |
| 16 18        | SS          | 10-11-11-5 | 2.0             | 0-1': Dark grey cm SAND, coarsens downwards; wet.  
               |             |            |                 | 1-1.7': Dark grey cm SAND and cm GRAVEL; wet.  
               |             |            |                 | 1.7-2': Dark grey cm SAND and f GRAVEL; wet. |
| 18 20        | SS          | 2-1/12"-1  | 2.0             | 0-0.25': Dark grey silty CLAY, little f sand, wet.  
               |             |            |                 | 0.25-0.9': Dark grey f SAND, some silt, little clay; wet.  
               |             |            |                 | 0.9-2': Dark grey silty CLAY, little f sand, fossil at 19.4'; moist. |
| 20 22        | SS          | 2-1/12"-8  | 1.1             | 0-0.9': Dark grey silty CLAY, little f sand, trace fossils; moist.  
               |             |            |                 | 0.9-1.1': Dark grey SILT and f SAND, little clay; wet. |
| 22 24        | SS          | 5-2-2-2    | 2.0             | 0-1': Dark grey silty CLAY; wet.  
               |             |            |                 | 1-1.5': Dark grey cmf SAND and GRAVEL, little silt; wet.  
               |             |            |                 | 1.5-2': Dark brown organic-rich silty CLAY, some wood fragments (roots); moist. |
| 24 26        | SS          |            |                 |             |
| 26 28        | SS          |            |                 |             |
| 28 30        | SS          |            |                 |             |