BioGas Corp Proposed Anaerobic Digester
4101 Arthur Kill Road: Block 7247, Part of Lot 1 and Block 7207, Part of Lot 60

ROSSVILLE, STATEN ISLAND, RICHMOND COUNTY, NEW YORK

Phase 1A Archaeological Documentary Study

Prepared for:

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Management Summary

OPRHP Project Review Number: 18PR00885

Involved Agencies: City Environmental Quality Review (CEQR)

Phase of Survey: Phase 1A Documentary Study

Location Information

Location: 4101 Arthur Kill Road (Block 7247, part of Lot 1 and Block 7207, part of Lot 60)
Staten Island, New York

Minor Civil Division: 08501

County: Richmond County

Survey Area

Length: Approximately 1,100 feet

Width: Approximately 400 feet

Area: 10.2 acres (444,326 square feet)

USGS 7.5 Minute Quadrangle Map: Arthur Kill

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Date of Report: May 2018

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Chapter 1: Introduction and Methodology

A. INTRODUCTION

BioGas Corp is proposing to construct an anaerobic digester (the proposed project) on a portion of the existing Kinder Morgan bulk fuel terminal facility located at 4101 Arthur Kill Road in the Charleston neighborhood of Staten Island, New York (see **Figure 1**). The portion of Block 7247, Lot 1 and Block 7207, Lot 60 in which the project site is situated would be subdivided and leased from Kinder Morgan for the construction of the proposed project (see **Figures 2A** and **2B**). The facility will process approximately 700 tons per day of primarily food scraps/source separated organics with the possibility that the facility could accept approximately 100 tons per day of waste from a nearby paper plant where the food waste would be reduced accordingly.

The proposed project is currently in the due diligence phase and, as such, has not yet been designed, nor have its actions been defined. At present, it is presumed that the project is subject to New York City Environmental Quality Review (CEQR).[1] Pursuant to CEQR, consultation was initiated with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). In a comment letter dated March 28, 2018, OPRHP requested that a Phase 1 Archaeological Survey of the project site be prepared. Pursuant to CEQR, consultation will also be initiated with the New York City Landmarks Preservation Commission (LPC). As described in LPC's (2002) *Guidelines for Archaeological Work in New York City*,[2] archaeological investigations in New York City typically begin with the preparation of a Phase 1A Archaeological Documentary Study. As described in the *CEQR Technical Manual* (2014), such investigations typically involve extensive documentary research designed to identify both known archaeological resources on a project site as well as determine the likelihood that unknown archaeological resources may be present through the determination of a site's past uses and disturbance.[3] This Phase 1A Archaeological Documentary Study has been prepared to satisfy the comments of OPRHP and to satisfy the LPC guidelines and the *CEQR Technical Manual*.

B. RESEARCH GOALS AND METHODOLOGY

The Phase 1A Archaeological Documentary Study of the proposed anaerobic digester project site has been designed to satisfy the requirements of LPC and OPRHP, while following the guidelines of the New York Archaeological Council (NYAC). The study documents the development history of the proposed

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[1] As the project design advances and additional actions are identified, the project may be subject to additional environmental review legislation (e.g., the New York State Environmental Quality Review Act [SEQRA], Section 14.09 of the New York State Historic Preservation Act, or Section 106 of the National Historic Preservation Act). In the event that additional analysis or consultation pursuant to additional legislation becomes necessary, it will be completed in the future in consultation with LPC, OPRHP, and any other involved parties as necessary and appropriate. Furthermore, in the event that the project design changes and would include a larger area than that studied here, additional archaeological analysis may be necessary and would be completed in the future as dictated by LPC and OPRHP.

[2] https://www1.nyc.gov/assets/lpc/downloads/pdf/pubs/ayguide.pdf

[3] http://www1.nyc.gov/assets/oec/technical-manual/09_Historic_Resources_2014.pdf

project site and its potential to yield archaeological resources, including precontact and historic cultural resources. In addition, this report documents the current conditions of the project site, as well as previous cultural resource investigations that have taken place in the vicinity.

This Phase 1A Archaeological Documentary Study has four major goals: (1) determine the likelihood that the project site was occupied during the precontact (Native American) and/or historic periods; (2) determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located within the project site; (3) make a determination of the project site's potential archaeological sensitivity; and (4) make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below.

The first goal of this documentary study is to determine the likelihood that the project site was inhabited during the precontact and/or historic periods, and identify any activities that may have taken place in the vicinity that would have resulted in the deposition of archaeological resources.

The second goal of this Phase 1A study is to determine the likelihood that archaeological resources could have survived intact within the project site after development and landscape alteration (e.g., erosion, grading, filling, etc.). Potential disturbance—associated with paving, utility installation, and other previous construction impacts—was also considered. As described by NYAC in their *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*, published in 1994 and subsequently adopted by OPRHP:

> *An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g., proximity to perennial water sources, well-drained soils, floral and faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them* (NYAC 1994: 2).

The third goal of this study is to make a determination of the project site's archaeological sensitivity. As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect "the likelihood that cultural resources are present within the project area" (NYAC 1994: 10). For the purposes of this study, those terms are defined as follows:

- Low: Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e., locations at great distances from fresh and salt water resources), locations where no historic activity occurred before the installation of municipal water and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.
- Moderate: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance, but not enough to eliminate the possibility that archaeological resources are intact on the project site.
- High: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

As mentioned above, the fourth goal of this study is to make recommendations for additional archaeological investigations where necessary. According to NYAC standards, Phase 1B testing is generally warranted for areas determined to have moderate sensitivity or higher. Archaeological testing is

designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should they exist on the project site, such archaeological resources could provide new insight into precontact occupation in southwestern Staten Island, the transition from Native American to European settlement, or the historic period occupation of the project site.

To satisfy the four goals as outlined above, documentary research was completed to establish a chronology of the project site's development, landscape alteration, and to identify any individuals who may have owned the land or worked and/or resided there, and to determine if buildings were present there in the past. Data were gathered from various published and unpublished primary and secondary resources, such as historic maps, topographical analyses (both modern and historic), historic and current photographs (including aerial imagery), newspaper articles, local histories, and previously conducted archaeological surveys. These published and unpublished resources were consulted at various repositories, including the Main Research Branch of the New York Public Library (including the Local History and Map Divisions) and the Library of Congress. Previously identified sites and previously conducted archaeological resources in the vicinity were collected from the files of LPC, OPRHP, and the New York State Museum (NYSM). Information on previously identified archaeological sites and previous cultural resources assessments was accessed through the New York State Cultural Resource Information System (CRIS).[1] Online textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed. Attempts were made to identify the owners and occupants of the project site using historical maps. For this part of Staten Island, it can be difficult to identify owners using historic directories and census record, as the area's rural nature throughout much of its history makes it difficult to correlate specific records with specific properties as a result of the lack of or inconsistent use of street addresses and the presence of large families in the general regions with multiple individuals sharing the same names.

[1] https://cris.parks.ny.gov

Chapter 2: Environmental and Physical Settings

A. GEOLOGY AND TOPOGRAPHY

The project site is situated within a geographic province known as the Atlantic Coastal Plain (Isachsen, et al. 2000). The island's physical setting was shaped by massive glaciers up to 1,000 feet thick, which retreated from the area toward the end of the Pleistocene. There were four major glaciations that began approximately 17,000 years ago and lasted until roughly 12,000 years ago when the Wisconsin period—the last glacial period—came to an end. During the Wisconsin ice age, a glacial moraine known as the "Terminal Moraine" traveled southwest across Staten Island. The progression of the Terminal Moraine resulted in the separation of the Atlantic Coastal Plain in southern Staten Island from the remainder of the island to the northwest, which is characterized by hard bedrock rather than glacial deposits (ibid; Reeds 1925). Glacial deposits in southern Staten Island are associated with the Raritan Formation (clay, silty clay, sand, and gravel) dating to the Upper Cretaceous epoch, which ended approximately 66 million years ago (Fisher, et al. 1995).

COMPARISON OF HISTORIC AND MODERN TOPOGRAPHY

The project site was included within an extensive survey of Staten Island that was completed by the Richmond County Topographical Bureau in 1913[1] (see **Figure 3**). The information from this map was compared with modern topographical information in order to identify any areas of landscape modification (e.g., areas that have been graded or filled). This involved the georeferencing of the 1913 map to align with the modern street grid and the overlay of topographical information obtained from Lidar information published by the United States Geological Survey (USGS) in 2014. The 1913 map includes elevation data measured relative to the Richmond Borough Datum and the Lidar data was measured relative to the North American Vertical Datum of 1988 (NAVD88). The Richmond Borough datum is located 2.092 feet below NAVD88. Therefore, the Lidar elevations presented in Figure 3 have been converted to NAVD88 for the purposes of comparison.

The survey depicts the project site as a gently sloping area marked by a small hill, the summit of which was near the center of the project site. The highest point of the hill's elevation was situated at 63.4 feet above the Richmond Borough Datum.[2] The elevation sloped down to the northeast and was situated at 46 feet at its lowest point in the northeast corner of the project site. The western half of the project site was more level, sloping to an elevation of 55 feet near the southwest corner of the project site. The historic elevations are very similar to the current topography identified by the Lidar data. The summit of the hill in the center of the site is currently at an elevation of 62 feet, slightly lower than that measured in 1913,

[1] The survey was completed between 1906 and 1913, however, the two sheets depicting the project site (Sheets 73 and 74) were both issued in 1913.

[2] A datum is the point from which surface elevations are measured (where the elevation is considered to be 0). Elevations of the same ground surface taken relative to different datum points will therefore differ despite the fact that they refer to the same location. Therefore, understanding the datum from which an elevation was measured is critically important to an analysis of historic elevations and landscape change. The elevations presented in the 1913 Topographic Survey are relative to a datum based on "Richmond High Water."

while the elevations in the northeast and southeast corners of the project site are the same or very similar to those observed in 1913. Therefore, it does not appear that extensive grading or filling activities have occurred on the project site in the last century. However, the 1913 map depicts the western portion of the project site as a dry woodland and does not depict any wetland areas (described in greater detail below).

B. HYDROLOGY

As the glaciers receded, the ensuing runoff created streams, rivers, and lakes as well as thick tracts of marshland in the low-lying areas along Staten Island's coasts. As recently as a few thousand years ago, the sea level was 2 to 4 meters lower than it is at present and the coastline was located further out into the bay hundreds of meters south of its present location (GRA 2014). The project site is located less than 2,000 feet southwest of the Arthur Kill, the tidal strait that separates Staten Island from mainland New Jersey. As mentioned previously, historic maps do not indicate that any bodies of water or wetlands were located on the project site through the early 20th century, though a stream extended from the Kill and ran parallel to the project site approximately 400 feet to the east. Wetland areas are currently mapped in the western portion of the project site and in the areas to the north**.** These wetlands may have formed as a result of the industrial development of the surrounding area.

C. SOILS

The Web Soil Survey maintained by the United States Department of Agriculture (USDA)'s National Resource Conservation Service indicates that the majority of the project site is characterized by a soil complex known as "Windsor Complex, Loamy Substratum," a well-drained soil type typical of outwash plains with slopes of less than three percent (see **Table 1**). A small area in the eastern portion of the project site is associated with the Haledon-Hasbrouck Complex, a somewhat poorly drained soil type associated with ground moraines in generally level areas. The area surrounding the existing gas plant to the north of the project site is mapped as "Oil-Waste Land." These soil types are summarized in **Table 1**.

Table 1
Project Area Soils

Series Name	Typical Soil Profile			Slope (%)	Drainage	Landform
	Level	Soil Horizon Depth (inches)	Soil Type			
Windsor Complex, Loamy Substratum(WWB)	Oi	0 to 2	Decomposed plant material	0 to 8	Well Drained	Outwash Plains
	A	2 to 2	Loamy Sand			
	Bw	2 to 27	Loamy Sand			
	C1	27 to 50	Sand			
	2C2	50 to 71	Sandy Loam			
Haledon-Hasbrouck Complex (HHA)	Oe	0 to 2	Moderately decomposed plant material	0 to 3	Somewhat Poorly Drained	Ground Moraines
	A	2 to 6	Loam			
	BEg	6 to 12	Silt Loam			
	Btg	12 to 29	Silt Loam			
	B/Etx	29 to 63	Loam			
Oil-Waste Land (Oi)	Not specified					

Sources: USDA Natural Resources Conservation Service Web Soil Survey: https://websoilsurvey.sc.egov.usda.gov (accessed April 2018).

D. CURRENT CONDITIONS

The project site is currently a densely overgrown wooded area adjacent to the existing oil tank farm (see **Photographs 1** through **6**). Certain areas, particularly along the northern and eastern sides of the site, show signs of visible disturbance, presumably associated with the construction of the adjacent oil tank facility (see **Photographs 4** and **5**). As described previously, a wetland area is located in the northwestern corner of the project site (see **Photograph 2**).

Chapter 3: Precontact Period

A. PRECONTACT CONTEXT

Archaeologists have divided the time between the arrival of the first humans in northeastern North America and the arrival of Europeans more than 10,000 years later into three periods: Paleo-Indian (11,000-10,000 BP), Archaic (10,000-2,700 BP), and Woodland (2,700 BP–AD 1500). These divisions are based on certain changes in environmental conditions, technological advancements, and cultural adaptations, which are observable in the archaeological record.

PALEO-INDIAN PERIOD

Human populations did not inhabit the Northeast until the glaciers retreated more than 11,000 years ago. These new occupants included Native American populations referred to by archaeologists as Paleo-Indians, the forebears of the Delaware—also called the Lenape Indians—who would inhabit the land in later years. Archaeological evidence suggests that the Paleo-Indians were likely highly mobile hunters and gatherers who utilized a distinct style of lithic technology, typified by fluted points. They appear to have lived in small groups of fewer than 50 individuals (Dincauze 2000) and did not maintain permanent campsites. In addition, most of the Paleo-Indian sites that have been investigated were located near water sources. Because of the close proximity of Paleo-Indian sites to the coastline, few have been preserved in the New York City area. Of the few Paleo-Indian sites that have been discovered in New York City, nearly all have been found on Staten Island. One such site is that of Port Mobil, on Staten Island, located in the immediate vicinity of the project site (Cantwell and Wall 2000). Like most precontact sites, this location is situated on high ground overlooking the water. Because of heavy disturbance in the area—it is currently an oil tank farm—the site has yielded nothing more than a collection of fluted points and other stone tools characteristic of the period (Ritchie 1980). Paleo-Indian artifacts were also found along the eroding shoreline 500 yards south of the Port Mobil site and at the Cutting site in the Rossville section of Staten Island (ibid). Recent excavations at the Old Place site in northwestern Staten Island by the Public Archaeology Laboratory (PAL) have yielded new evidence regarding the site's occupation during the Paleo-Indian period through the Late Woodland, though the majority of the collected artifacts date to the Archaic (PAL 2014).

ARCHAIC PERIOD

The Archaic period has been sub-divided into three chronological segments, based on trends identified in the archaeological record that reflect not only the ecological transformations that occurred during this period, but the cultural changes as well. These have been termed the Early Archaic (10,000–8,000 BP), the Middle Archaic (8,000–6,000 BP), and the Late Archaic (6,000–2,700 BP) (Cantwell and Wall 2001). The Late Archaic is sometimes further divided to include the Terminal Archaic (3,000-2,700 BP). The abundance of food resources that arose during this period allowed the Archaic Native Americans to occupy individual sites on a permanent or semi-permanent basis, unlike their nomadic Paleo-Indian predecessors. Fishing technology was developed during the Middle Archaic in response to an increasing dependence on the area's marine resources. Tools continued to be crafted in part from foreign lithic

materials, indicating that there was consistent trade among Native American groups from various regions in North America throughout the Archaic period.

Due to rising sea levels and to the rapid development of the area, as well as the dominance of coniferous forests at that time, which generated a habitat ill-fit for human habitation (Boesch 1994), few Early Archaic sites have been identified in New York City. Most of those that have been identified are located on Staten Island, including Ward's Point at the southwestern tip of the island; Richmond Hill; the H. F. Hollowell site; and the Old Place site. Sites such as Ward's Point—a domestic habitation location that due to lowered sea levels was originally inland—tend to be deep and stratified and have yielded stone tools related to cooking, woodworking, and hide processing. The many years of constant occupation caused the artifacts to be deeply buried under more recent debris deposits (Cantwell and Wall 2001). However, at the Old Place Site, the only artifacts that were discovered—stone tool assemblages—were found at relatively shallow depths of around 42 inches or 3.5 feet (Ritchie 1980).

There are also few Middle Archaic sites in the region. The majority of these tend to consist of large shell middens, which are often found near major watercourses such as the Hudson River, although stone points have also been found in such locations. These sites were in great danger of obliteration because of their proximity to the shrinking coastlines. Unlike the Early and Middle periods, many Late Archaic sites have been found throughout the New York City area including many in Staten Island. Late Archaic habitation sites are often found in areas of low elevation near watercourses and temporary hunting sites are often located near sandy areas (Boesch 1994). Late Archaic sites identified in Staten Island include the Pottery Farm, Smoking Point, and the Wort Farm sit, all of which are in close proximity to the project site (ibid).

Finally, many Terminal Archaic sites from all across the city have provided examples of what archaeologists call the Orient culture, which is characterized by long fishtail stone points and soapstone bowls. Extremely elaborate Orient burial sites have been found on eastern Long Island, but none have been identified on Staten Island. Orient-style fishtail points have been discovered along the shores of the Charleston neighborhood (in which the project site is located), and it is assumed that they fell from eroding cliffs located nearby (Boesch 1994).

WOODLAND PERIOD

The Woodland period represents a cultural revolution of sorts for the Northeast. During this time, Native Americans began to alter their way of life, focusing on a settled, agricultural lifestyle rather than one of nomadic hunting and gathering. Social rituals become visible in the archaeological record at this time. Composite tools, bows and arrows, domesticated dogs, and elaborately decorated pottery were introduced to Native American culture; and burial sites grew increasingly complex. Woodland-era sites across North America indicate that there was an overall shift toward full-time agriculture and permanently settled villages. Archaic sites in New York City, however, suggest that the Native Americans there continued to hunt and forage on a part-time basis. This was most likely due to the incredibly diverse environmental niches that could be found across the region throughout the Woodland period (Cantwell and Wall 2001; Grumet 1995).

The Woodland period ended with the arrival of the first Europeans in the early 1500s. One Woodland period archaeological site that has been identified on Staten Island is the Bowman's Brook site, located along the island's northwest coastline. That site yielded a type of incised pottery, which has since become known as the Bowman's Brook Phase. Sites with this particular type of pottery are most often located near tidal streams or coves and are usually associated with large shell middens and refuse pits, indicating long periods of occupation (Ritchie 1980). The Bowman's Brook site also contained several human and dog graves, as well as bundle burials (Cantwell and Wall 2001). The Ward's Point site was also occupied

during the Woodland period, and many Native American artifacts and elaborate burials with varied grave offerings have been uncovered there (ibid).

CONTACT PERIOD

The Woodland period ended with the arrival of the first Europeans in the early 1500s, and the beginning of the Contact Period. At that time, a division of the Munsee Indians known as the Raritan occupied southern Staten Island (Bolton 1975). They entered the area toward the end of the Woodland period (Boesch 1994). They referred to Staten Island as "Aquehonga Manacknong," possibly meaning "haunted woods," "bushnet fishing place," or "the high bank fort place" (Grumet 1981: 2). The name may have also referred to the village settlement at Ward's Point (ibid). In land transactions with the Europeans, the island was also referred to as "Matawucks" and "Eghquaous" (Boesch 1994).

The contact period in the New York City area began with the arrival of European expeditions led by Giovanni de Verrazano in 1524 and Henry Hudson in 1609, and the area was first colonized by Dutch settlers in the early 17th century. Shortly after Hudson's men explored Staten Island, a skirmish ensued with the local Indians, resulting in the death of one of Hudson's crewmen (Burrows and Wallace 1999). Because of this incident, the Native Americans residing on Staten Island were extremely wary of Europeans and set up look-outs on tall hills in an effort to spot approaching ships so as to prevent vessels from landing (Historical Records Survey 1942: xii).

Beginning in 1621, Dutch West India Company (WIC) managed Dutch interests in the New World and began to purchase large tracts of land from the Native American groups that inhabited the region. Although the land had been "sold" to the Europeans in 1630 (Grumet 1981), it was not until 1638 that a successful European colony, that of Olde Dorpe, could be established on the island, which continues to retain its Dutch name of "Staaten Island". Violence between the Native Americans and the Europeans would cause this village to be burned down and rebuilt several times throughout the contact period (ibid). Several incidents occurred on Staten Island in which the Dutch and the Native Americans engaged in violent, deadly clashes, including a war attributed to Dutch Director-General William Kieft in the 1640s and the "Peach War" of 1655 (Grumet 1981). Following the end of the latter altercation and facing a growing European population, the Native American residents of the area sold the remainder of the land on Staten Island between 1657 and 1670, paving the way for extensive European settlement on the island (Grumet 1981; Bolton 1975).

B. PREVIOUSLY IDENTIFIED NATIVE AMERICAN ARCHAEOLOGICAL SITES NEAR THE PROJECT SITE

In general, Native American habitation sites are most often located in coastal areas with access to marine resources and near freshwater sources and areas of high elevation and level slopes of less than 12 to 15 percent (NYAC 1994). The natural landscape of the project site, high, level land within somewhat close proximity to fresh water (a stream was approximately 400 feet to the east) suggests that the project site would have been an ideal location for an occupation, camping, or resource acquisition/processing site.

Further indication of the potential presence of Native American activity near a project site is indicated by the number of precontact archaeological sites that have been previously identified in the vicinity. Information regarding such previously identified archaeological sites was obtained from various locations including the site files of OPRHP, LPC, NYSM, and from published accounts. Dozens of archaeological sites have been identified within one mile of the project site in databases maintained by OPRHP and NYSM (accessed via CRIS) and the site is located within a generalized area of archaeological sensitivity as mapped by OPRHP and in an area of high sensitivity as mapped by LPC (Boesch 1994). More than forty sites are mapped within one mile of the project sites in CRIS and in LPC's site files (ibid). These

sites are summarized in **Table 1**, below. Because of the great number of sites that have been identified near the project site, it is clear that this portion of Staten Island was occupied by Native Americans during the precontact period.

Table 2
Previously Identified Precontact Archaeological Sites within One Mile

OPRHP Site Number	NYSM Site Number	LPC Site Number	Site Name	Distance to Project Site	Time Period	Site Type	Notes	Additional Source(s)
8501.000073 8501.0002815	770	17	Canada Hill/Fairview Precontact Site	5,200 feet	Woodland/ Historic	Mixed historic and precontact artifacts; site disturbed by looting; later excavated professionally: fire-cracked rock and lithic debitage observed in addition to the ruins of the Kreischer Estate		
8501.000074	7323	7, 91	Chemical Lane/Ultra-Marine Site	2,500 Feet	Archaic/ Woodland	Lithic points; site impacted by looting	Associated with Smoking Point and Pottery Farm Sites	
8501.000075	738	8	Pottery Farm	2500 Feet	Woodland?	Pottery; impacted by looting	Associated with Smoking Point and Chemical Lane Sites	
8501.000076	737	6	Smoking Point	3500 Feet	Archaic/ Woodland, Possible Paleo-Indian component	Midden with lithic points and pottery; impacted by looting	Associated with Chemical Lane and Pottery Farm Sites	
8501.000118		50	T&J Site	600 Feet	Precontact	Lithic Points and Tools		Yamin and Pickman 1986
8501.000119	772	4	Rossville Site/ Hammer-stone Hill	4,250 Feet	Precontact	Shell and artifacts	Destroyed by bulldozer during construction of West Shore Expressway	Bolton 1922
	742	9	Port Socony North	2,000 Feet	Precontact	Lithic Points and tools; pottery	Disturbed	Bolton 1922
	743	14	Port Socony South	2,600 Feet	Paleo-Indian	Lithic Points and tools; pottery	Disturbed	Bolton 1922
8501.000122	744	15/16	Charleston Beach/ Kreischer-ville/ NYS Museum STD 21-3	3,500 Feet	Paleo-Indian to Late Woodland	Lithic Points and tools; pottery	Disturbed; mapped in the location of the Port Socony North site in CRIS	Bolton 1922
8501.000130		50	Park Headquarter s	1,250 Feet	Archaic to Woodland	Lithic debitage and ground stone		Yamin and Pickman 1986
8501.000878 8501.000879 8501.00088		50	Abraham's Pond Locus A-C	1,500 Feet	Archaic to Woodland	Temporary camp sites		Yamin and Pickman 1986
8501.000083			Winant House	2,000 Feet	Historic and Precontact			
8501.002378			Salamander Court	3,250 Feet	Precontact and Historic	Lithic debitage and FCR		
8501.002569			NYCSCA P.S. 56R PRECONTA CT	5,200 Feet	Precontact			
8501.002767			A7-MCB-1	4,000 feet	Precontact	Hilltop site with lithic debitage below plow zone		

Table 2
Previously Identified Precontact Archaeological Sites within One Mile

OPRHP Site Number	NYSM Site Number	LPC Site Number	Site Name	Distance to Project Site	Time Period	Site Type	Notes	Additional Source(s)
8501.002766			C4-MCB-1	4,500 feet	Precontact	Hilltop site with lithic debitage below plow zone		
	2320		Area I	2,500 Feet	Precontact	No information		
	4603			Overlaps with site	Precontact	Fields and possible village		Parker 1920
	4604	44	Sandy Brook	2,500 Feet	Precontact/ Contact	Possible village/large camp		Parker 1920
	4606			2,000 Feet	Precontact	Camps with middens		Parker 1920
	4623			Overlaps with site	Precontact	Village and camp		
	4624			1,500 Feet	Precontact	Possible camp and village		
	5701		New Site I	850Feet	Precontact	Possible camp and workshop		
	7272			4,500 Feet	Precontact	Traces of occupation		
	8494			Overlaps with site	Precontact	Traces of occupation		
	8495			3,500 Feet	Precontact	Middens		
	8497			4,500 Feet	Precontact	Village		
8501.000120		10	Gericke Farm Site	1,500 Feet	Precontact	Lithic Debitage		Yamin and Pickman 1986
	773	12, 21?	Rossville Campsite	4,250 Feet	Woodland			
	5702		New Site II	1,000 Feet	Precontact			
8501.000122		50	Clay Pit Road Site	250 Feet	Archaic/ Woodland	Lithic Debitage and misc. stone tools		Yamin and Pickman 1986
8501.000131		50	Junkyard Site	1,250 Feet	Archaic/ Woodland	Lithic Debitage, projectile points, and misc. stone tools		Yamin and Pickman 1986
8501.000123		50	Clay Pit Road North Bluff	1,750 Feet	Precontact	Lithic Debitage and misc. stone tools		Yamin and Pickman 1986
8501.000121		50	Clay Pit Road East	1,250 Feet	Precontact	Lithic Debitage and misc. stone tools		Yamin and Pickman 1986
		5	Harik's Sandy Ground	4,250 Feet	Archaic	Resources processing site with lithic material associated with hunting and processing, possibly a series of campsites		Boesch 1994
	735	11	Wort Farm	4,500 Feet	Late Archaic to Late Woodland	Lithics and ceramics collected by local avocational archaeologists		Boesch 1994
		56	Unnamed Site	3,500 Feet	Late Woodland	Shell midden and campsite		Boesch 1994
		118	Unnamed Site at Ellis Point	1,000 Feet	Precontact	Small village		Boesch 1994
		119	Unnamed Site	500 feet	Early Woodland	No information		Boesch 1994
		3	St. Luke's Cemetery	4,200 Feet	Archaic to Late Woodland	Within historic cemetery; evidence of Native American occupation with lithics and ceramics		Boesch 1994
	771	78	Indian Fields	3,500 Feet	Woodland	Traces of occupation		Boesch 1994

Sources: CRIS database (https://cris.parks.ny.gov/) and Boesch 1994

The majority of these sites were discovered and reported by avocational archaeologists and pot-hunters in the early 20th century and are poorly documented. Several others (e.g., Canada Hill, Chemical Lane, and Pottery Farm) were reported by professional archaeologists attempting to document areas that were being looted.

One of the oldest archaeological sites to have been identified in New York City is that of Port Mobil, a group of seemingly related sites (including Port Socony North and South and Charleston Beach as described in **Table 2**) located in the immediate vicinity of the project site near the existing oil tank farm. During the Paleo-Indian period, before sea levels rose, the Arthur Kill was a "small brackish stream" located 25 feet lower than the ground surface of the Port Mobil area (Cantwell and Wall 2001: 42). The site was explored by avocational archaeologists in the early 20th century and was reported to have contained a variety of Paleo-Indian lithic points (including Clovis points) and tools made from imported chert from Pennsylvania and upstate New York (ibid). The site, which today is "heavily disturbed, scarred by all the bulldozing and grading needed to put up the huge earthen works that surround the oil tanks," was likely associated with additional similar finds located on Charleston Beach and at North Beach (aka Port Socony North). The Charleston Beach site has been interpreted as either a waterfront campsite or simply a deposit of artifacts that eroded from the adjacent high ground (ibid). The area was subsequently subjected to professional archaeological investigations that did not result in the identification of archaeological sites (ibid).

Because of the proximity to the coastline, most local Paleo-Indian sites have been lost due to rising sea levels, erosion, and historic and modern disturbance, making the Port Mobil site finds of great value to the archaeological record. At that time, the Native American population appears to have lived in the high lands adjacent to the Arthur Kill and exploited the resources in the low-lying coastal region below (Boesch 1994). There is evidence that these campsites were consistently reoccupied through the Late Woodland period (ibid). A series of professionally excavated archaeological sites were reported by archaeologists Rebecca Yamin and Arnold Pickman in the Clay Pit Pond Park area in 1986, including the Abraham's Pond Loci A-C; Clay Pit Pond Road; Clay Pit Pond Road East; Clay Pit Pond Road/Bluff North; Gericke; Junkyard; Park Headquarters; T and J; and Winant sites. Each of these sites yielded a variety of stone tools and points likely associated with Archaic and/or Woodland period occupation (Boesch 1994).

Finally, many temporary and seasonal campsites used by Native Americans have been identified within a one-mile radius of the project area. In the past, these sites and others like them have yielded large amounts of lithic debitage—waste flakes created during the manufacture of stone tools—as well as occasional stone tools, fire-cracked rock, and shell middens. The remnants left behind at these campsites indicate that they were used by the Native Americans during hunting and fishing excursions, but not necessarily for full-time habitation. Numerous campsites have been identified in the immediate vicinity of the project site, including the Wort Farm and Sandy Brook Sites. The Wort Farm, 4,500 feet to the east of the project site near the northeast corner of Winant Avenue and Woodrow Road, included Late Archaic to Late Woodland (6,000 BP to 1600 AD) artifacts. Bolton (1922) identified several sites in that vicinity, including "scattered settlements…in the southwestern portion of the island around Woodrow (82), where, along the line of Sandy Brook (81), on the Wort Farm, and over the fields to Rossville (80) and Kreischerville, signs of Native American occupancy and cultivation are found" (Bolton 1922: 194). Site 80 was a shell midden and Sites 81 and 82 were, respectively, a village site and a collection of Native American artifacts "spread over a considerable area" both located near Bogardus Corners, the historic name for the area near the intersection of Woodrow and Bloomingdale Roads. All three sites were investigated by Alanson Skinner in the early 20th century (Skinner 1909). Skinner said of the area, the sites from the Sandy Brook to the Wort Farm are remarkable for the number of stone mortars found there" and that "peculiar" stone-lined burials with possible grave goods had been reported by the Wort family

(Skinner 19019:10). Skinner further described the sites in the Rossville area as "Lodges, shells, etc…with early relics" and said that "all the sandy fields along the shore to Kreischerville yield relics" (ibid: 11).

Chapter 4: The Historic Period

A. THE EARLY HISTORY OF THE CHARLESTON NEIGHBORHOOD

The Dutch colony of New Netherlands became the British colony of New York in 1664, and though the Dutch were later able to reclaim the colony in 1673, they traded it back in 1674 for "the far more lucrative colony of Surinam" (Cantwell and Wall 2001: 181). Richmond County was established in 1683 and the area that is now New York City would remain under British control for the next hundred years. Under British rule, Staten Island's open farmland and vast coastline became essential for the production of agricultural products and collection of marine resources for export the city.

Staten Island proved to be a key asset to the British during the Revolutionary War. In 1776, unsuccessful peace negotiations were held the "Conference House" on the southern tip of Staten Island, which continues to stand in what is now known as Conference House Park. The house was built in 1680 by Captain Christopher Billopp, who four years earlier had been granted a massive plot of land comprising more than 960 acres and represents the first long-term European settlement in the southern half of Staten Island (Burrows and Wallace 1999). Throughout the remainder of the Revolutionary War, the British continued to use Staten Island as a rudimentary home base due to its strategic location at the mouth of the harbor (Historical Records Survey 1942).

Despite New York City's loyalty to the British during the war, after the American victory the conversion to the new American government was relatively smooth. Land which had been previously owned by British loyalists was divided and sold, which brought about a surge in population and development in the outer boroughs. This trend continued through the 19th century. The 1733 Popple map depicts a number of small towns across Staten Island, though none were located in the vicinity of the modern Charleston neighborhood. In 1788, the island was officially divided into four townships, Castleton, Northfield, Southfield, and Westfield, where the project area is situated (Leng and Davis 1930). A precursor to modern Amboy Road, one of the first major roads connecting northern and southern Staten Island, was constructed in the early 18th century and connected to a ferry to New Jersey located near the southwestern tip of Staten Island (ibid). Arthur Kill Road, originally known as Fresh Kills Road, was constructed around the same time to connect eastern and western halves of Southern Staten Island (ibid). With the addition of these roads, the Charleston area became newly accessible and it became an attractive area for residential development.

Between 1840 and 1880, the population of Staten Island nearly quadrupled. This surge was caused in part by the increasing population density in Manhattan that drove many people to the outer boroughs. The project site was situated in the vicinity of several Staten Island neighborhoods, including Woodrow to the east, Rossville to the northeast, and Kreischerville to the south, though the name of the Charleston neighborhood was not popular until the 20th century (Leng and Davis 1930). The region's prosperity caused the counties in the New York City region to become increasingly codependent, both economically and culturally. Staten Island was the site of several prominent industrial facilities and the role of industry in the area grew after the Civil War (ibid). Prominent factories in the vicinity of the project site included a chemical works located along the shore of the Arthur Kill to the northeast of the project site, which was founded before 1850 and later became the Delafield White Lead and Chemical Company and later became Dr. Reiner Roehre's International Ultramarine Works in 1884 (ibid). It was therefore suggested

that the counties around New York Harbor be consolidated under the name New York City. Although there was some resistance from some Staten Island residents, it officially became a borough of New York City on New Year's Day, 1898 (Burrows and Wallace 1999).

As part of the integrated city, Staten Island flourished throughout the 20th century. Increased mass transit connected all the boroughs and allowed more people to live outside of Manhattan while still having access to the city's varied resources. The remainder of the 20th century saw continued growth and increasing population density throughout Staten Island.

B. DEVELOPMENT HISTORY OF THE PROJECT SITE

EARLY COLONIAL HISTORY

Skene's 1907 map of original farmland grants (reproduced in Pickman and Yamin 1986) appears to suggest that the project site was located within a small portion of three large land grants: the western portion was included within a 55.25-acre area grated to Richard Tuttershall in 1686; the central portion was within an 84-acre plot granted to Jolly Coeur in 1680; and the map does not appear to provide information regarding land grants along the eastern side of the site. Each of the three parcels was an irregularly shaped wedge, with the widest part of each property situated along the Arthur Kill. These three property boundaries appear to have remained intact in the area north of Arthur Kill Road through the 20th century.

Few detailed maps exist that depict development conditions on Staten Island before the mid-19th century. Taylor and Skinner's 1781 map of Staten Island appears to depict the presence of homes along the waterfront of the Arthur Kill in the vicinity of the project site. Loring McMillen's 1933 map incorporating information from Taylor and Skinner's map and two maps produced during the Revolutionary War depicts several properties along the coast of the Arthur Kill, but doesn't depict specific houses or building footprints. The map depicts several property owners in the vicinity of the project site, including A. Tappan to the west of the project site, and W. Wynants (Winant Winant) and an illegible name within or in the immediate vicinity of the project site.

The Winant (also spelled Wynant, Wynants, or Winants) family was among Staten Island's oldest, with family members settling in various parts of the island. Winant Avenue was named in their honor. The family's presence on Staten Island began when Pieterse/Peter Winant (1654-1758) emigrated from Holland between 1655 and 1660 and initially settled in Brooklyn (Morris 1900). Peter's son, also named Peter, later moved to Staten Island (ibid). He was responsible for beginning "one of the oldest families on the Island" that became "so ramified that it is impossible to trace all its branches to their sources" (Clute 1877:435). The Winants' connection to the area surrounding the project site began in the early 18th century, when Winant Winant—the first of many to share that name—purchased a stone house that was possibly constructed by John Hendrickson in 1696, and which was later expanded with a frame addition after the Revolutionary War (Bailey 1936).[1] The property was inhabited by succeeding generations of Winant descendants, including a Winant Winant (1744-1804) who lived there with his second wife, Mary, and after his death in 1804, his son, Winant (1799-1871), inherited the property (ibid). The younger Winant married Christina Mary Johnson (1799-1866), whose family owned the land to the east (ibid). A cemetery near their home in which Winant and Mary were interred, along with other family members, is discussed in greater detail below.

[1] A 1907 photograph of this home is included in Bailey (1936).

Winant Winant and his descendants would continue to own a portion of the project site for more than a century. Their long time neighbors to the east included the Johnson (or Johnston) family. The 1790 census, the first federal census to be recorded, lists Winant Winants adjacent to James Johnson, suggesting that they were neighbors. At that time, the Winants household included one free white male over age 16, four free white females, and seven enslaved individuals of African descent. The Johnson home included one free white male over age 16, one free white male under age 16, three free white females, and one "other person." Subsequent census records do not indicate which individuals resided in which homes in the neighborhood and the presence of multiple family members sharing the same name made it difficult to identify which census records apply to which of the family's many homes. Furthermore, much of the documentation of the Winant family refers to their home along the waterfront, but little information is extant regarding how they utilized the remainder of their property, including the project site.

19TH CENTURY RESIDENTIAL USE

Hassler's 1844 coastal survey of Staten Island depicts the project site as a largely wooded area situated in an area with small farms scattered along Arthur Kill Road and the Arthur Kill waterfront. One home is depicted within the eastern portion of the project site along the northern side of Arthur Kill Road. The 1853 Butler map (see **Figure 4**) depicts the same house within the project site and identifies its owner as W. Winant. Winant property was located in the middle of the project site near the former 1680 land grant of Jolly Coeur. The 1853 Butler map indicates that the Winant family owned a number of properties in the Charleston/Rossville area, three of which were in the immediate vicinity of the project site. One home was located on the northern side of what is now Arthur Kill Road within the project site, another was located to the southwest on the southern side of Arthur Kill Road, and the third was located along the waterfront portion of the property to the north of the project site. The property to the east of the Winant farm was owned by the Johnston family and it was not developed in the vicinity of Arthur Kill Road.

The 1859 Walling map is the first to depict a second home along the northern side of Arthur Kill Road, which may have been within the western portion of the project site. The map identifies the home's owner as T. Storer. The Storer family owned a large amount of property to the west of the project site and their estate was separated from that of the Winants by the property of J.W. Hughes. The 1860 Walling map and the 1866 Colton map depict the project site in the same manner, but both indicate that the former Winant Winant home was now the property of F. Winant. In addition, the 1866 map identifies the owner of the former Storer home as W. Wrighs.

Beers' 1874 atlas of Staten Island (see **Figure 5**) is among the first to depict building footprints and property boundaries and suggests that the project site was situated within a portion of four larger estates. The map reflects the division of the Winant property after the death of Winant Winant in 1871. At that time, the Winant property was split: his son, Winant Winant, received a 40-acre undeveloped plot of land making up the center of the project site and the area to the north and his daughter and son-in-law, Mary Jane and James Johnson received a 51.5-acre parcel containing the family home (Bailey 1936). Both properties are shown on the 1874 Beers atlas, which depicts the former Winant home along the northern side of Arthur Kill Road that was by that time included within the 51.5-acre property of "Mrs. Johnson," though the Winant family continued to own properties to the south of the road. Mrs. Johnson's estate was developed with two buildings along the waterfront portion of the property. To the east of the Johnson estate was the 6-acre undeveloped property of I. Butler, which lined the eastern side of the project site. The central portion of the project site was at that time occupied by the now 40-acre Winant estate, which was entirely undeveloped north of Arthur Kill Road. To the west was the 27-acre property of J.W. Hughes. The 1874 atlas depicts what appears to be the former Storer/Wrighs home along the northern side of Arthur Kill Road near the western portion of the project site. While other atlases depict the same home

within the boundary of the project site, the 1907 atlas depicts the building a short distance to the west, though this is presumably in error given the placement of the house on other maps and atlases. An additional home was located on the Hughes property along the northern edge of the property facing the Kill. No changes to property ownership or layout are depicted on the 1887 Beers atlas, which only depicts certain buildings.

The 1907 Robinson atlas of Staten Island (see **Figure 6**) reflects the beginning of the transition of the area from a residential neighborhood to an increasingly industrial area. Along the western side of the project site, the Hughes estate—now owned by Dixon Hughes and measuring 22.5 acres north of Arthur Kill Road—remained largely unchanged, though a barn was constructed to the northeast of the home along the northern side of Arthur Kill Road. The former Butler property at the eastern side of the project site remained undeveloped, but was now included within the larger property of Louise M. Geigerich. The central portion of the project site—the former Winant and Johnson estates—had been combined into one larger almost 70-acre property owned by the "Arthur Kill Land & Water Front Co." The former Winant home in the southeastern portion of the project site continues to be depicted on the map, along with a small outbuilding located to the northeast. The property was consolidated in early 1907 by the Princes Bay Realty Company, which also purchased the Arthur Kill Land and Waterfront Company at the same time, giving them control of a mile-long section of the waterfront land facing the Arthur Kill (*New-York Tribune* 1907). Little else is known about the company, which does not appear to have extensively developed the property. Polk & Co.'s 1918-1919 directory for New York City identifies the corporation and its board of directors, including president John H. Jewett, and notes that it had a net worth of $250,000, though no information about the group's activities is provided.

The buildings depicted within the project site on the 1907 map are all depicted in greater detail on the 1913 topographical survey of Staten Island (see **Figure 3**). Both the former Hughes and Winant homes were built at the tops of hills adjacent to the road. No other buildings are depicted within the project site at that time, and a large portion of the former Winant property is identified as woodland. The home on the Hughes property, located at the western boundary of the project site approximately 35 feet north of the modern northern line of Arthur Kill Road, was a 1.5-story frame house. The 1913 map depicts a barn associated with the home to the northwest, just outside the project site. A second, smaller (approximately 5-feet-square) outbuilding is depicted to the north of the home. This may have been an outhouse or a small shed used for other purposes. A photograph of this house taken by P.L. Sperr in 1924 are in the collection of the New York Public Library (NYPL).[1] The information associated with the photograph indicates that the home's address was 4037 Arthur Kill Road, but no information regarding residents could be identified related to that address. The photograph also indicates that the home and the property on which is stood were both at a slightly higher elevation than the adjacent road, as it is today. Finally, a sign visible on the property in the image indicates that the 200-acre property was for sale and it may reference the Arthur Kill Land and Waterfront Company, though the name is partially blocked by vegetation.

The former Winant house located at the eastern end of the project site is identified on the 1913 map as a 2-story frame dwelling with a front porch and a 1-story frame addition along the western side of the home. At its closest point, the home was located less than 10 feet from the northern line of modern Arthur Kill Road. A small frame outbuilding measuring approximately 15-feet-sqare was located to the northwest of the home and a large 2-story frame barn was located further to the north; all three buildings are within the project site. Photographs of this home taken by P.L. Sperr between 1928 and 1930 are also

[1] Accessible at: https://digitalcollections.nypl.org/items/510d47dd-7e48-a3d9-e040-e00a18064a99.

in the collection of NYPL,[1] which depict the home as vacant, dilapidated, and covered with advertisements for the Sells Floto Circus in 1928 and a different circus in 1930.

The project site is depicted in largely the same manner on the 1917 Bromley atlas of Staten Island (see **Figure 7**). That map once again depicts the central portion of the project site as separate properties owned by the heirs of Winant Winant and the heirs of Mary J. Johnston (sic). The Hughes property, the owner of which is not identified on the 1917 map, appears unchanged with the exception of the possible removal of the barn to the north of the home along Arthur Kill Road. By that time, the undeveloped property on the eastern portion of the project site was owned by John W. Storer, Jr.

20TH CENTURY INDUSTRIAL DEVELOPMENT

An aerial photograph of the project site taken in 1924 depicts the site as a woodland crossed by dirt paths (see **Figure 8A**). A cleared and possibly disturbed area is visible along the eastern side of the project site, to the northwest of the former Winant home and its associated outbuildings. The Winant home was demolished in 1929 (Bailey 1936). An aerial photograph taken in 1951 (see **Figure 8B**) depicts relatively the same conditions despite the construction of the massive tank farm to the northwest of the project site, and similar conditions appear on aerial photographs taken in 1996.[2] Sanborn maps of the project site were not produced until the 1980s, and do not depict buildings within the project site or immediate vicinity with the exception of the small 1-story metal utility building that is currently adjacent to the northwest corner of the project site.[3]

C. CEMETERIES IN THE VICINITY OF THE PROJECT SITE

Prior to the 19th century, many families with large estates in rural areas like Staten Island maintained family cemeteries on their land, and several have been documented in the vicinity of the project site (Meade 2006). One such cemetery was reported on the Winant family estate in the vicinity of the project site, though published accounts indicate that it was located along the waterfront portion of the property and was not in the location of the project site (Salmon 2006). The cemetery does not appear on historic maps, though other family cemeteries, including a large one on the Androvette property to the southwest of the project site are depicted on the 1853 Butler map; the Blazing Star Cemetery, which is still extant, is depicted within the town of Rossville to the northeast. Headstones in the Androvette burial ground date between 1773 and 1844 and bear the names of the Androvette, Tappen, Ellis, Butler, and Johnston families, suggesting that several local families—who frequently intermarried—utilized the burial ground (Davis 1889; Inskeep 2000). A second group of graves was reported to have been located on the other side of a fence in the same property that included headstones bearing the names of the DuBois, Mesereau, and Winant families (Davis 1889).[4] This cemetery is clearly mapped and labeled as "Old Cemetery 1773-1822" on the 1913 Topographical Survey, though its size, shape, and orientation do not match that depicted on the1853 map.

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[1] Accessible at: https://digitalcollections.nypl.org/items/510d47dd-7e86-a3d9-e040-e00a18064a99. The information associated with this photograph indicates that it is west of Clay Pit Road, however, that appears to be in error as the home in the photographs is identified as part of the former Johnson estate (previously owned by J.H. and Anna C. Winant) that had been sold to the Arthur Kill Land & Waterfront Co., suggesting that it was the home on the project site.

[2] The aerial photographs taken in 1924, 1951, and 1996 are posted on NYCityMap: http://maps.nyc.gov/doitt/nycitymap/.

[3] Sanborn maps reviewed for this study were published between 1987 and 2007.

[4] Inskeep (2000) indicates that the Winant and DuBois graves were part of the Winant family cemetery, though Davis (1889), which Inskeep identifies as the source for the information on the Winant cemetery, suggests that those graves were adjacent to the Androvette cemetery and at a distance from the Winant cemetery.

No such map or clear description of the Winant family cemetery was located, and the 1913 Topographical Survey does not identify any other cemeteries in the immediate vicinity of the project site. The Winant cemetery was described by historian William Davis, who made the following observations in 1889:

> *Further along the shore* [from the Androvette cemetery], *under the shade of some large cedar trees and near the line fence are three stones, with their backs to the Kill. Near by* (sic) *is a long, low stone house, one story and attic, and with a sloping roof…in this burying ground, as in nearly all of the others mentioned, there are some graves marked by common stones* (Davis 1889: 6).

Davis transcribed the epitaphs from three headstones within the cemetery, including those of Winant Morgan (died in infancy in 1806); Mary Winant, the wife of Winant Winant (1765-1842); and Capt. Winant Winants (1744-1804). Davis' mention of graves marked with common stones appears to imply that additional unmarked graves were present. The stones from this cemetery were apparently relocated to the Bethel Methodist Episcopal Church Cemetery, though it is unclear if only the stones were relocated or if the graves were disinterred and reburied in the church cemetery (Salmon 2006).

No maps identify the location of the former cemetery and no evidence of the cemetery's possible location is presented on the 1913 topographical survey. The survey does depict a long, rectangular 1-story stone dwelling within the former Winant property along the shore of the Arthur Kill to the north of the project site. It is presumed that the burial ground was located in the vicinity of this home and was therefore at a distance of more than 1,600 feet from the project site.

Chapter 5: Conclusions and Recommendations

A. CONCLUSIONS

As part of the background research for this Phase 1A Archaeological Documentary Study, various primary and secondary resources were analyzed, including historic maps and atlases, historic photographs and lithographs, newspaper articles, and local histories. The information provided by these sources was analyzed to reach the following conclusions.

PREVIOUS DISTURBANCE

The topography of the project site has not been significantly altered through grading or filling since at least 1913. Some disturbance would have occurred as a result of the construction and demolition of the houses, barns, and other outbuildings that were located within the project site in the 19th and early 20th centuries. A comparison of aerial photographs taken before and after the construction of the adjacent oil tank farm suggests that despite the size of that facility, the project site does not appear to have been extensively disturbed as a result of its construction. Pockets of disturbance are visible across the project site, particularly along its eastern side, but other areas appear to be undisturbed woodland.

PRECONTACT SENSITIVITY ASSESSMENT

As described in **Chapter 3, "Precontact Period**," the precontact sensitivity of project sites in New York City is generally evaluated by a site's proximity to level slopes (less than 12 to 15 percent), watercourses, well-drained soils, and previously identified precontact archaeological sites (NYAC 1994). The project site is located along a generally level area in close proximity to both fresh water and marine resources. Furthermore, dozens of precontact archaeological sites have been identified in the immediate vicinity of the project site, including two that overlap with the project site. Portions of the project site appear to be undisturbed. Given the site's natural topography, lack of clearly defined areas of disturbance, and the extent to which Native American activity has been identified in the area, the project site is determined to have moderate to high sensitivity for precontact archaeological resources.

HISTORIC SENSITIVITY ASSESSMENT

The project site is situated in an area that was settled in the late 17th century and was occupied by descendants the Winant family between the early 18th and early 20th centuries. The occupation and development of the project site before the mid-19th century is unknown, though the site would have been located near the Arthur Kill Road, a major transportation corridor in Staten Island during the 18th century. Two historic homes constructed before the mid to late 19th century were identified within the project site on historic maps. The first, which was owned by Winant Winants and constructed before 1850, was located on the northern side of Arthur Kill Road near the southeastern corner of the project site. The home was vacant and in ruins by the 1920s, but was associated with at least two outbuildings located to the northeast. The second home, located on the northern side of Arthur Kill Road near the extreme southwest corner of the project site, was on the property of the Hughes family, constructed before 1859, and previously owned by T. Storer and W. Wrighs. The residents of these homes likely depended on shaft

features (e.g., privies, cisterns, and wells) for the purposes of water gathering and sanitation. Such features were typically filled with household refuse after they were no longer needed for their original purpose, and are therefore of high archaeological research value. Shaft features were typically constructed of brick or stone and extended to significant depths, often to 10 to 15 feet below the project site or more. As such, these types of features frequently survive disturbance episodes, even if the upper portions are truncated during development. The residents likely also maintained refuse midden deposits on their property, which may not have been fully disturbed by subsequent development. The project site is therefore determined to have moderate sensitivity for archaeological resources associated with the historic period occupation of the project site.

B. RECOMMENDATIONS

Given the identified precontact and historic period archaeological sensitivity of the project site, archaeological testing in the form of a Phase 1B investigation is recommended to confirm the presence or absence of archaeological resources on the potentially sensitive portion of the project site. The Phase 1B investigation should be completed in coordination with LPC and OPRHP.

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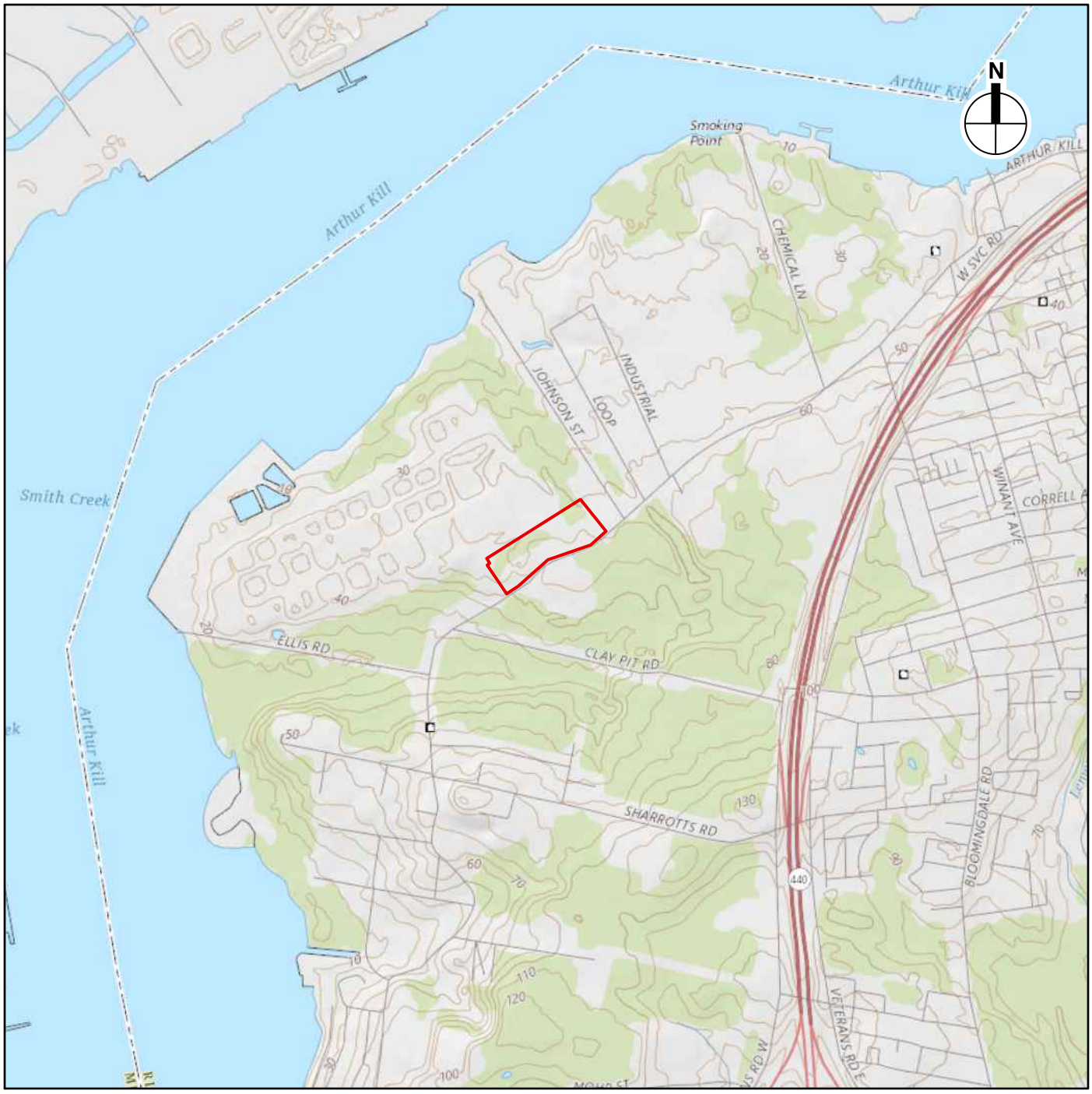
Figures

4/19/2018



Approximate coordinates of Project Site: 74°14'W 40°32'41"N
Arthur Kill Quad

USGS Topographic Map

PROPOSED ANAEROBIC DIGESTER PROJECT

Figure 1

Project Site

1 *Tax Lot Number and Boundary*

7247 *Tax Block Number and Boundary*

1 *Photograph View Direction and Reference Number*

PROPOSED ANAEROBIC DIGESTER PROJECT

Project Location and Photograph Key

Figure 2a

4/26/2018

Project Location
Aerial

PROPOSED ANAEROBIC DIGESTER PROJECT

Figure 2b

4/26/2018

Project Site

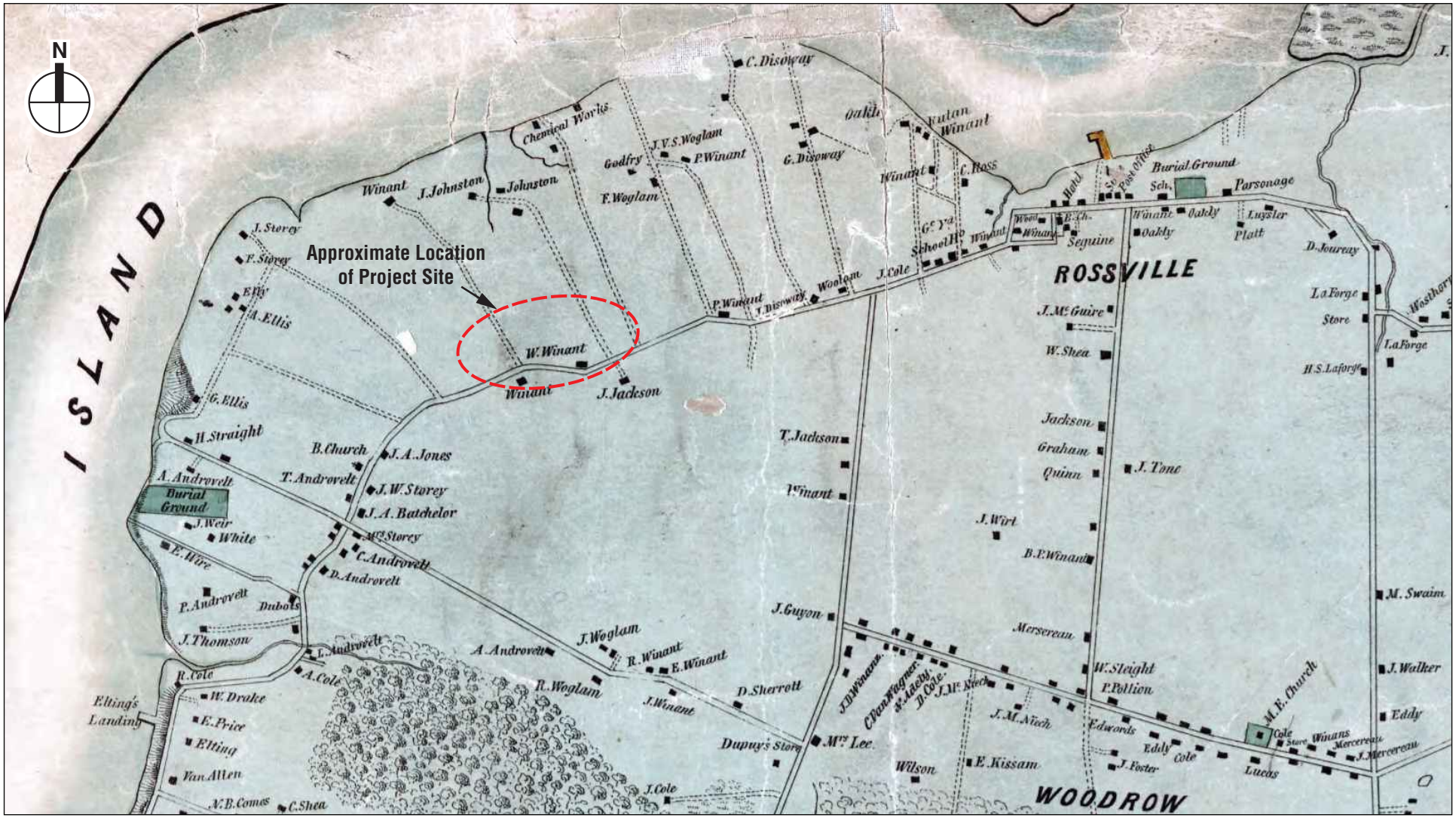
Present Day Topography (2-foot contours)

1913 Borough of Richmond Topographical Survey

PROPOSED ANAEROBIC DIGESTER PROJECT

Figure 3

4.26.18

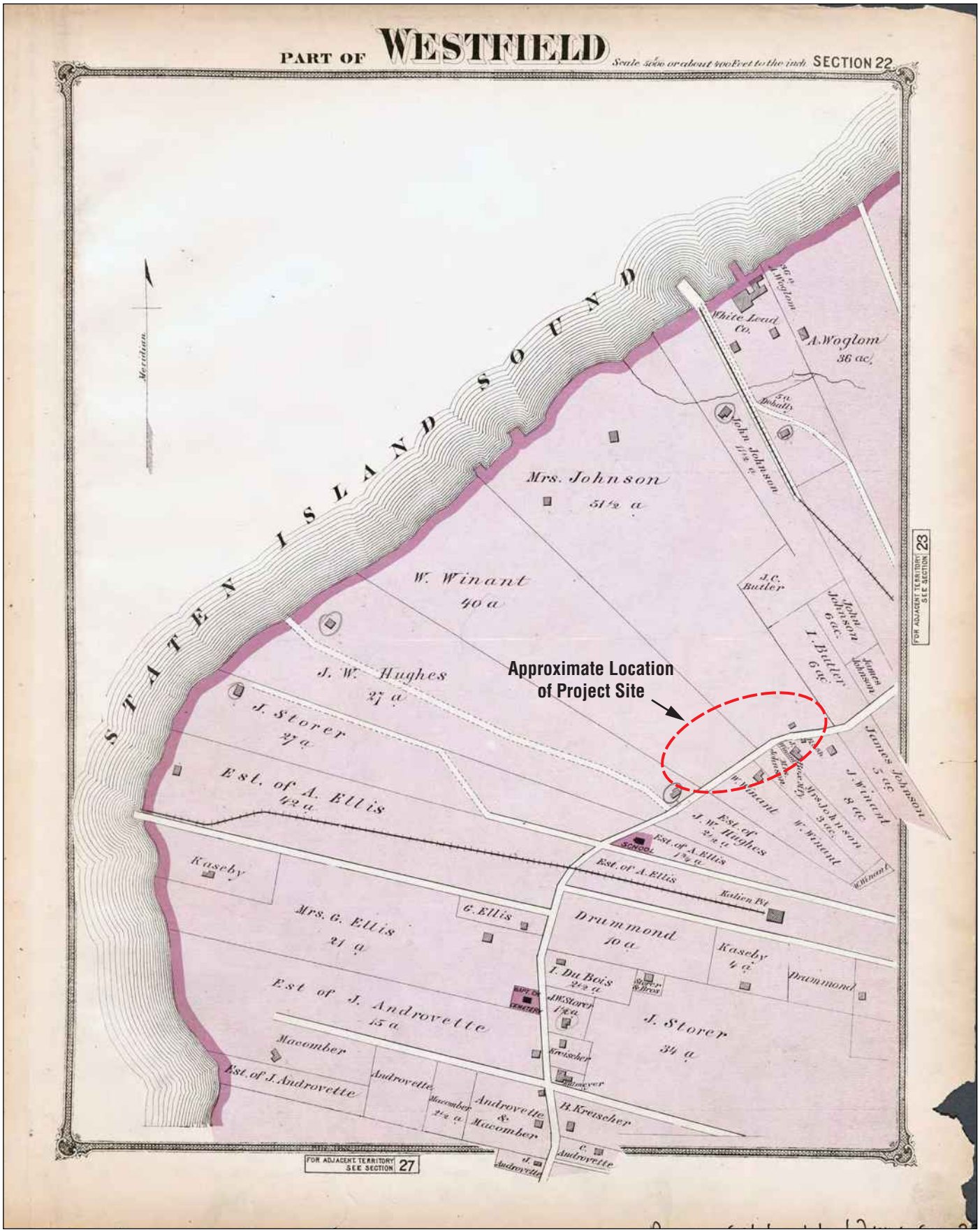


1853 Butler Map

Figure 4

PROPOSED ANAEROBIC DIGESTER PROJECT

4.26.18

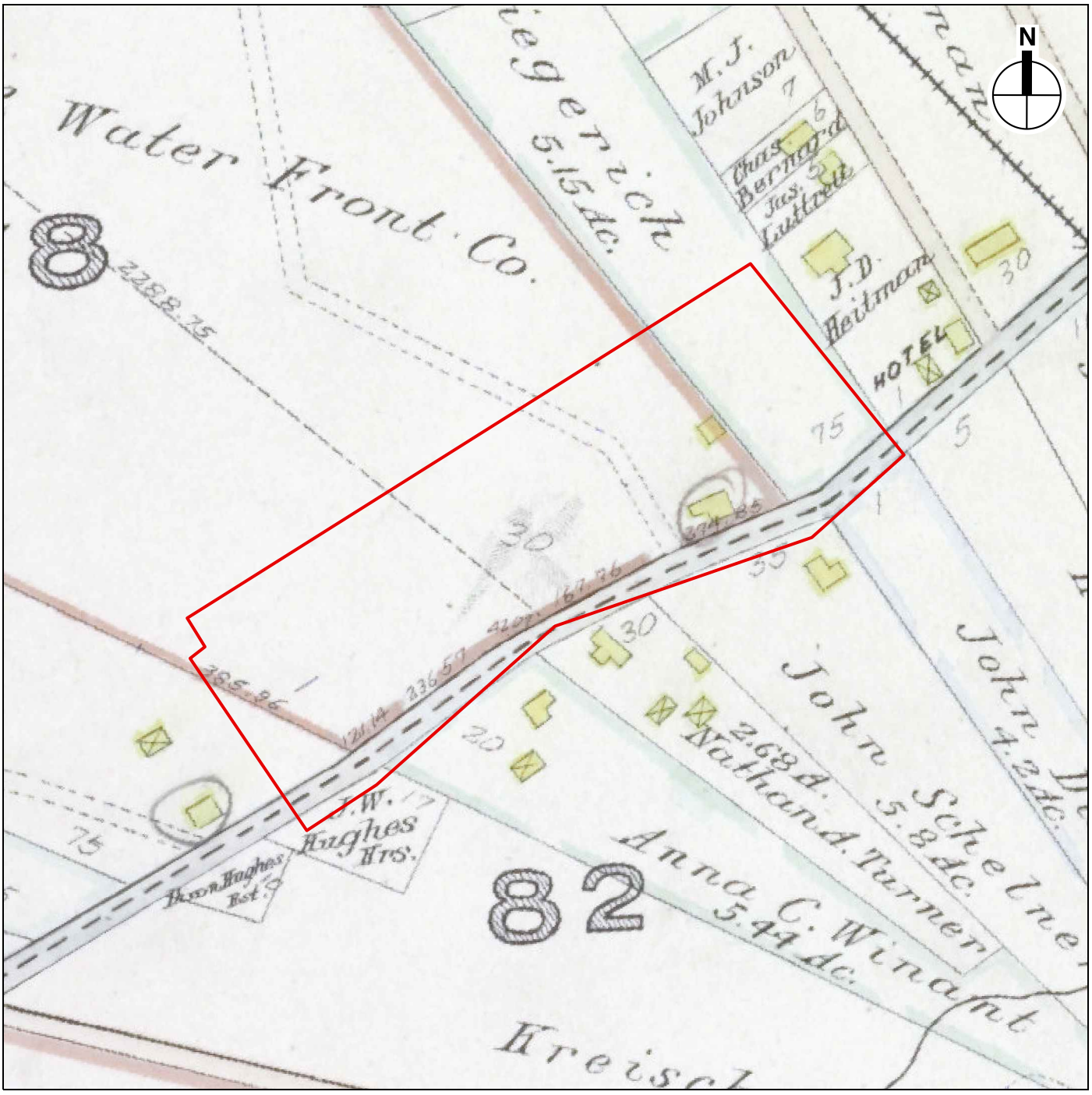


1874 Beers Atlas

PROPOSED ANAEROBIC DIGESTER PROJECT

Figure 5

4/26/2018



0 200 FEET

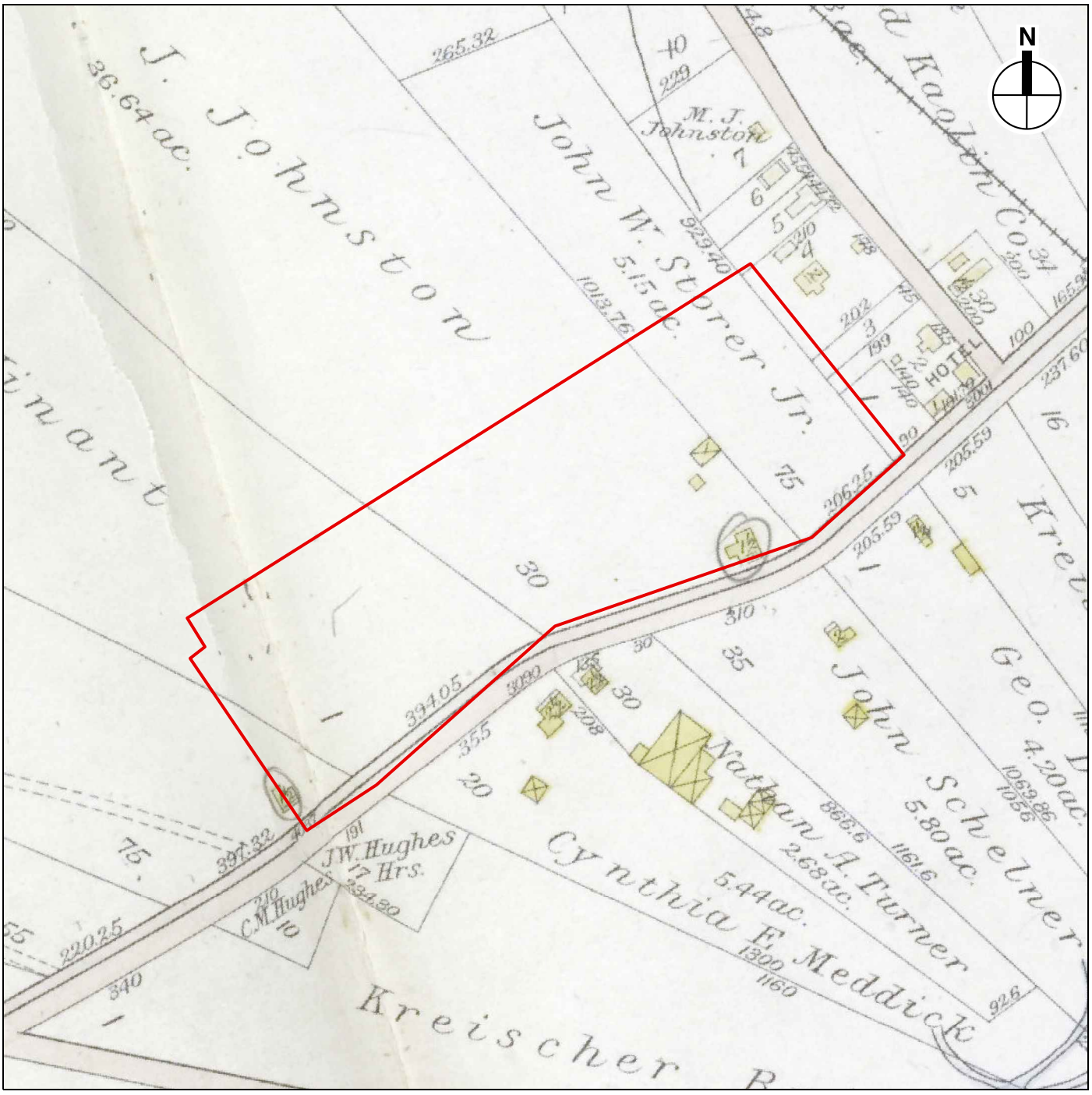
Project Site

1907 Robinson Atlas

PROPOSED ANAEROBIC DIGESTER PROJECT

Figure 6

4/26/2018



Project Site

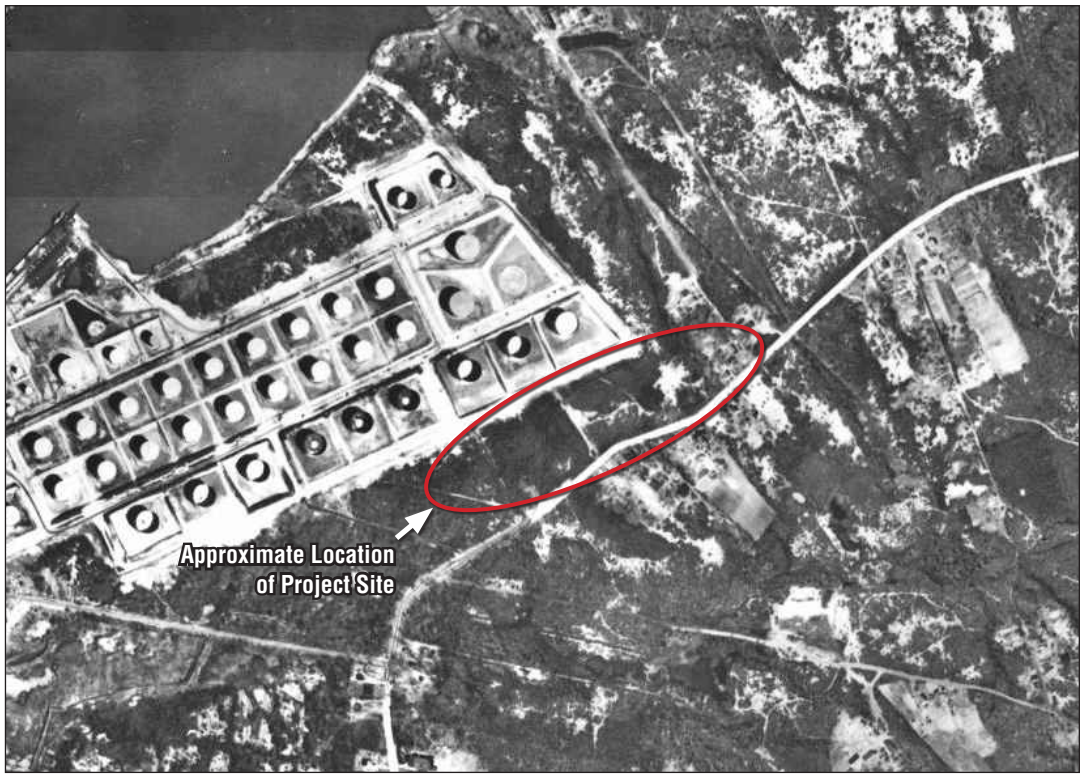
1917 Bromley Atlas

PROPOSED ANAEROBIC DIGESTER PROJECT

Figure 7

4.26.18

1924 Aerial (SOURCE: NYCity Map) **A**



1951 Aerial (SOURCE: NYCity Map) **B**

Historical Aerial Photographs

PROPOSED ANAEROBIC DIGESTER PROJECT

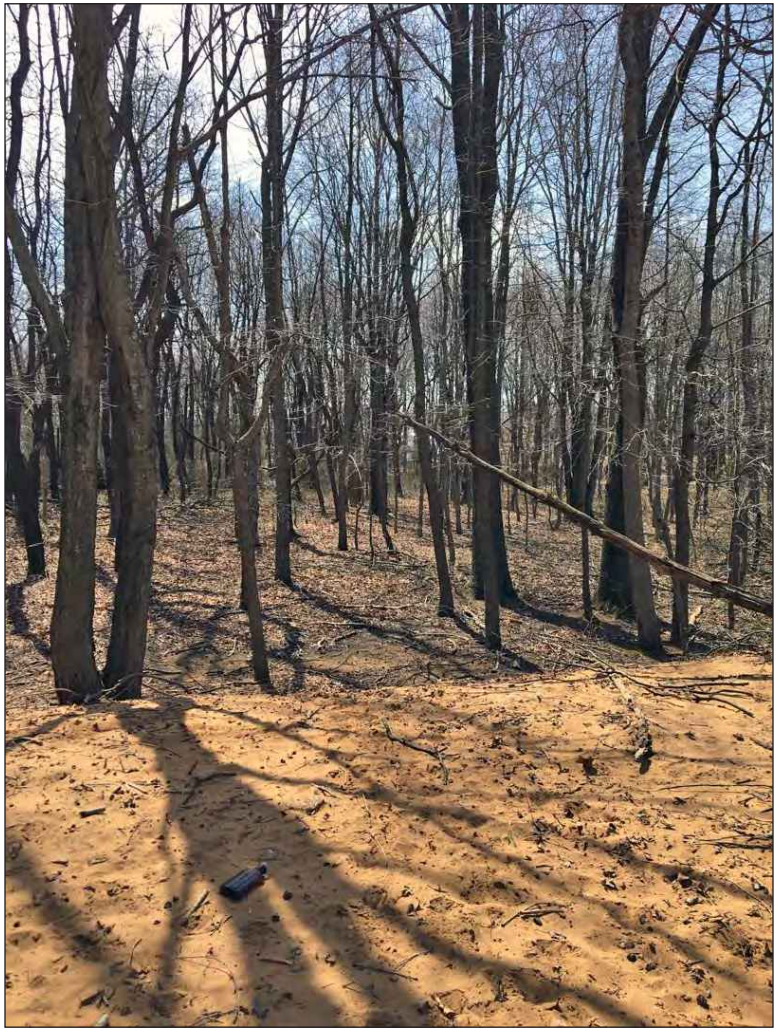
Figure 8

Photographs

Looking northeast at the wooded area near the southwest corner of the project site **1**

Looking east at the wetland area in the northwest corner of the project site **2**

The wooded area in the center of the project site, looking west towards the wetland area **3**



View southeast from the northeastern corner of the project site, showing the transition from the sandy soil surrounding the oil tanks to the woodland of the project site **4**

Looking south at the disturbed area in the southeastern portion of the project site **5**

Looking northwest from Arthur Kill Road at the wooded area in the center of the project site **6**