HARTGEN
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PHASE IA LITERATURE REVIEW AND ARCHEOLOGICAL SENSITIVITY ASSESSMENT

Eighteen Mile Creek Superfund Site Remedial Investigation/Feasibility Study Operable Unit 1 (OU1)

Water Street
City of Lockport
Niagara County, NY

HAA # 4815-11
OPRHP No. 15PR00095

Submitted to:
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MANAGEMENT SUMMARY

SHPO Project Review Number: 15PR00095
Involved State and Federal Agencies: US Environmental Protection Agency; Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
Phase of Survey: Phase IA Literature Review and Archeological Sensitivity Assessment

LOCATION INFORMATION

Location: 99, 113, 117, 127, and 143 Water Street and lots at 97, 105, 125, and 131 Water Street
Minor Civil Division: City of Lockport (06342)
County: Niagara, New York

SURVEY AREA

Length: 194 m (636 ft) north to south along Water Street
Width: 56 m (185 ft) east to west at widest point
Number of Acres Surveyed: 0.91 ha (2.25 ac)
7.5 Minute Quadrangle Map: *Lockport, NY*

RESULTS OF RESEARCH

Sites within 1,000 ft: One; the Jackson Mill Property historic site (A06342.000216)
Surveys in vicinity: One; archaeological survey, Lockport Arterial by Wapora Inc. 1977
NR/NRE sites in or adjacent: none
OPRHP inventoried structures within 1,000 ft: Two; (A06342.000518, A06342.000282)
Precontact Sensitivity: Moderate to high (proximity to other sites and creek)
Historic Sensitivity: High (documented 19th-century structures throughout APE)

RECOMMENDATIONS

Hartgen recommends a Phase IB field reconnaissance survey of the OU1 APE, or if this is not feasible then archeological monitoring is recommended. In either scenario, since the APE contains hazardous materials, a detailed archeological survey/monitoring plan should be developed in coordination with consultation partners. The plan should address the scope and methods of the survey, and artifact collection, handling and disposition. This survey should target precontact and 19th-century deposits with high interpretive value, such as archeological features, and should minimize the collection of potentially contaminated artifacts from less informative deposits. Mechanical testing or remediation monitoring may be appropriate depending on the depths of impacts, depth of potentially cultural soils, and the nature of soil contaminants.

None of the standing structures within the OU1 APE appears to retain enough integrity to warrant individual listing on the National Register.

Report Authors: Corey McQuinn, RPA and Walter R. Wheeler
Date of Report: February 2015

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PHASE IA LITERATURE REVIEW AND ARCHEOLOGICAL SENSITIVITY ASSESSMENT

INTRODUCTION

Hartgen Archeological Associates, Inc. (Hartgen) was retained by Los Alamos Technical Associates, Inc. (LATA) to conduct a Phase IA archeological investigation for the remedial investigation and feasibility study of the Eighteen Mile Creek Superfund Site in the City of Lockport, Niagara County, New York (Map 1). This report details Operable Unit 1 (OU1), which consists of about 0.91 ha (2.25 ac) on Water Street including residences at 99, 113, 117, 127, and 143 Water Street and vacant lots at 97, 105, 125, and 131 Water Street. All of the lots are along the west side of Eighteen Mile Creek near a sharp bend and narrowing of the stream.

The project requires approvals by United States Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund). Therefore, this investigation was conducted to comply with Section 106 of the National Historic Preservation Act and will be reviewed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The investigation was conducted according to the New York Archaeological Council's *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections* (1994), which are endorsed by OPRHP. This report has been prepared according to OPRHP's *State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements* (2005).

PROJECT INFORMATION

A site visit was conducted by Matthew J. Kirk, RPA, on December 2 and 3, 2014, to observe and photograph existing conditions within the project area. The information gathered during the site visit is included in the relevant sections of the report.

Project Location

OU1 is located on Water Street in the City of Lockport, Niagara County, NY (Map 1). The Area of Potential Effects (APE) lies north of the commercial center of the city and on the west bank of Eighteen Mile Creek. The creek feeds the New York State Barge Canal, hereafter Barge Canal (National Register-listed), which runs through Lockport about 1,500 ft to the south of the APE. OU1 is part of the Eighteen Mile Creek corridor (the Creek Corridor), which extends from the creek's outflow from the Barge Canal to Harwood Street in Lockport. The creek continues its flow from the study area northward to Lake Ontario.

The project also proposes similar activities in a group of parcels to the east and south of OU1, designated OU2. Hartgen completed a separate report for the Phase IA study of OU2. This area includes four different parcels, each with a different set of mills and factories dating to the early 19th century.

Description of the Project Area and Area of Potential Effects (APE)

The remedial investigation/feasibility study is currently in the investigation phase. A work plan for site remediation has not yet been developed. The locations and depths of ground disturbing activities are presently unknown. For the purpose of this report, the APE is assumed to include the full extent of OU1, encompassing 0.91 ha (2.25 ac) and nine properties. The APE is bounded roughly by Eighteen Mile Creek on the east, Water Street on the west, William Street on the north, and Olcott Street on the south (Map 2, Photos 1–6).

Historically, the APE was split up into nine residential properties around the mid- to late nineteenth century. Currently, there are standing residences (and several associated outbuildings) on five lots: 99, 113, 117, 127, and 143 Water Street (Table 1). Three of the four vacant lots are owned by the City of Lockport. The houses were built as early as the mid-19th-century, with most built between about 1860 and 1886.

The Record of Decision (ROD) was filed for OU1, which details the potential impacts to the property and APE. The ROD entails the acquisition of the residential properties and permanent relocation of residents in the five houses. Each of the five houses and all outbuildings will be demolished and security fencing will be installed around the entire APE perimeter. The ROD also states that an estimated 5,800 cubic yards of PCB-

contaminated soil will be removed from the APE. The APE will be backfilled with clean fill and the top six inches will consist of topsoil that will be planted with native grasses, shrubs, and/or trees. Soil excavation work will be performed at the time of the cleanup of the sediments in the Creek Corridor to prevent the creek from re-contaminating the residential properties in OU1.

Photo 1. View facing southeast of the OU1 APE from the corner of William Street and Water Street. The blue house to the right is Structure 7, 143 Water Street. Eighteen Mile Creek flows beneath the road through a double culvert (corrugated steel arches set into concrete forms).

Photo 2. View facing northwest of the double culvert and associated wingwalls beneath William Street at the north end of the OU1 APE. The eastern wingwall composed of dry-laid stone is likely a remnant of an earlier bridge/dam. The double culvert is just outside of the OU1 APE to the north.

Photo 3. View facing south of Eighteen Mile Creek and the backyards of houses along Water Street. The crushed stone along the creek bank appears to be recent riprap placed to help prevent erosion of sediments. This portion of the APE was once part of a large mill pond.

Photo 4. View facing south down Water Street in the OU1 APE. Visible buildings from left to right are 131 Water Street (Structure 9a, garage), 127 Water Street (Structure 11), and 117 Water Street (Structure 5).

Photo 5. View facing north of the south end of the OU1 APE from the corner of Olcott Street and Water Street. Visible structures are 99 Water Street (Structure 2, foreground) and 113 Water Street (Structure 4, background).

Photo 6.View facing northeast across the northern end of the OU1 APE towards the former Flintkote mill complex on the east bank of the creek. Structure 8 (MDS) formerly stood in this location until the mid-20th century.

Table 1. Description of properties in the OU1 APE, Eighteen Mile Creek Superfund Remediation Investigation/Feasibility Study

Address	Approx. Size (ft^2)	Description	Dates	Photos
97 Water Street	4,900 ft^2	Vacant lot, formerly held a barn or shop (Structure 1 [MDS])	Pre-1886	-
99 Water Street	14,000 ft^2	Structure 2	c.1860–1886	Photo 7
105 Water Street	6,300 ft^2	Vacant residential lot (Structure 3 [MDS])	Pre-1886	-
113 Water Street	12,500 ft^2	Structure 4	Pre-1860	Photo 8
117 Water Street	8,500 ft^2	Structure 5	Pre-1860	Photo 9
125 Water Street	6,000 ft^2	Vacant residential lot (Structure 6 [MDS])	Pre-1860	-
127 Water Street	6,500 ft^2	Structure 11	c.1928–1948	Photo 11
131 Water Street	12,400 ft^2	Vacant lot, no structures	-	-
143 Water Street	19,700 ft^2	Structure 7 (house) Structure 8 (MDS, barn)	Pre-1860 (Structure 7) Pre-1908 (Structure 8)	Photo 10

ENVIRONMENTAL BACKGROUND

The environment of an area is significant for determining the sensitivity of the project area for archeological resources. Precontact and historic groups often favored level, well-drained areas near wetlands and waterways. Therefore, topography, proximity to wetlands, and soils are examined to determine if there are landforms in the project area that are more likely to contain archeological resources. In addition, bedrock formations may contain chert or other resources that may have been quarried by precontact groups. Soil conditions can provide a clue to past climatic conditions, as well as changes in local hydrology.

Present Land Use and Current Conditions

The APE is characterized by a combination of maintained residential yards and vacant, somewhat overgrown lots. A tree line separates the yards from the banks of Eighteen Mile Creek. This portion of the creek was once part of a mill pond for the Flintkote mill complex on the east side of the creek. The mill complex had a long and complex evolution from the 1860s when it was used for a woolen mill and sawmill, and later as a large paper mill, until the 20th century when it was utilized as manufacturer of asphalt shingles. The last iteration of the mill complex (Flintkote) burned in 1971 and was never re-built or re-occupied. Currently, the EPA is demolishing the remaining standing elements of the mill.

The east side of the APE was once part of the former mill pond. Today it is exposed and recently covered with stone riprap.

Soils

Soil surveys provide a general characterization of the types and depths of sediments that are found in an area. This information is an important factor in determining the appropriate methodology if and when a field study is recommended. The soil type also informs the degree of artifact visibility and likely recovery rates. For example, artifacts are more visible and more easily recovered in sand than in stiff glacial clay, which will not pass through a screen easily.

The Niagara County Soil Survey shows the project area as unsurveyed by the USDA (USDA NRCS 2014). The USDA NRCS U.S. General Soil Map (STATSGO2) indicates the project area as Urban Land (s5992) (USDA NRCS 2006). These areas are typically in intensely built-up areas and consist mostly of buildings, paved roads, and parking lots. There are no general soil profile or characteristics (Map 3), however, natural soils to the north are typically Wassaic-Lairdsville-Farmington soils that are derived from glacial till over limestone and sandstone bedrock. Within the project area there is likely recent alluvial deposition from the creek and mill pond but the exact structure and depths of these soils are currently unknown.

Bedrock Geology

The underlying bedrock is Thorold Sandstone and Grimsby Formation sandstone and shale from the Medina Group and Queenston Formation. This is not a chert-bearing bedrock, that may have been exploited by precontact people for use in stone tools (Rickard and Fisher 1970). The underlying sandstone in this area is generally susceptible to erosion and accounts for the precipitous drop in the creek levels from the canal to the end of the project area. To the south of the project area along the nearby Niagara Escarpment is a thick bed of limestone that has thus far resisted erosion, superimposed over the sandstone. The limestone can have chert nodules, but more importantly was a source of building materials in the form of blocks and hydraulic cement in the 19th century.

Physiography and Hydrology

Steeply sloped areas are considered largely unsuitable for human occupation. As such, the standards for archeological fieldwork in New York State generally exclude areas with a slope in excess of 12% from archeological testing (NYAC 1994). Exceptions to this rule include steep areas with bedrock outcrops, overhangs, and large boulders that may have been used by precontact people as quarries or rock-shelters. Such areas may still warrant a systematic field examination.

The OU1 APE lies along the west bank of Eighteen Mile Creek, which flows northwest from the Barge Canal to Lake Ontario. The creek derives its name from the fact that it is 18 miles east of the Niagara River. The creek experiences flooding during high water events. Severe flooding of up to 100 feet from the creek bank reportedly occurs approximately once every two years, with less significant flooding events occurring several times a year as a result of heavy precipitation and blockage of culverts through which the creek flows under William Street at the northern end of the APE. The location of the project area along the Niagara Escarpment places it about 400 ft above the elevation at the lake shore.

This portion of the creek was altered by the Flintkote mill complex (and its earlier iterations), slightly changing its course and rerouting the water primarily to the east to power the factories. A mill dam created a large pond in the creek by the mid-19th century (if not before). The dam overflow, or bypass, flowed to the west of the main channel approximately along its present course. The effects of the mill dam and pond on the creek is best evidenced on the historical maps presented below.

Alterations to the flow and course of Eighteen Mile Creek by both the canal and the several mills and factories in the creek corridor have masked the original historic character of this waterway. The exact nature of the creek before the construction of the canal, which undoubtedly raised the creek's water levels with an influx of excess water from the canal system, is unknown. The creek may have been a small, seasonal drainage in the upper portions of the creek basin and more substantial near its confluence with Lake Ontario. Historical accounts suggest the creek supported a large salmon fishery, at least north of Ridge Road/Lewiston Road (NY 104), well north of the project area. Chief John Mountpleasant, a Tuscarora leader, recalled in 1849 that as a boy he took "salmon in Eighteen mile creek, where Lewiston road crosses near Lockport…with my hands, three feet in length" (captialization as in original)(Turner 1849). The chief's recollections suggest that the creek in its northern extent was significant in size before the canal.

DOCUMENTARY RESEARCH

Archeological Sites

Previously reported archeological sites provide an overview of both the types of sites that may be present in the project area and relationships between sites throughout the surrounding region.

An examination of the archeological site files at OPRHP identified one reported archeological site within a 1,000-ft radius of the OU1 APE (Table 1). There were no reported archeological sites in the New York State Museum (NYSM) site files. The presence of few reported sites may be because of a lack of previous systematic survey and does not necessarily indicate a decreased archeological sensitivity within the project area.

Table 2. OPRHP/NYSM archeological sites within 1,000 ft of the OU1 APE, Eighteen Mile Creek Superfund Remediation Investigation/Feasibility Study

OPRHP Site No.	NYSM Site No.	Site Identifier	Description	Proximity to Project Area
A06342.000216	-	Jackson Mill Property	Standing remains of a 19th-century mill complex near the Erie Barge Canal	500 ft east

State and National Register

A search of the computer files at OPRHP identified two inventoried properties within 1,000 ft of the APE. The National Register status of the inventoried structures has yet to be determined. There were no inventoried buildings within or adjacent to the APE and no NRL or previously determined NRE structures or properties within 1,000 ft. The location and a brief description of each of the inventoried properties is provided below in Table 3.

Table 3. Inventoried buildings within 1,000 ft of the OU1 APE, Eighteen Mile Creek Superfund Remediation Investigation/Feasibility Study

OPRHP Number	Property Name	Status	Description	Location and Proximity to Project Area
06342.000518	Flintkote Complex	Inventoried	198-300 Mill Street; built in the early- mid 19th century originally as a woolen mill and later paper factory and finally an asphalt shingle manufactory	200 ft northeast
06342.000282	Factory	Inventoried	55 Frost Street	900 ft northeast

Previous Surveys

Background research identified one archeological study that have been completed within the immediate vicinity of the project area. In 1977, Wapora, Inc. completed a survey of three alternative alignments for a proposed highway arterial through Lockport running north roughly parallel with Eighteen Mile Creek. The project area included about 2,500 acres for the literature review portion of the study, a land area including all of the OU1 and OU2 APEs in the southwest corner of the project area. The field reconnaissance portion of the survey focused on three alternate routes and testing, including shovel testing, pedestrian survey, and surface collection, was limited to high sensitivity areas within the proposed right-of-way. The closest field reconnaissance survey to the OU1 APE occurred just north of the APE within part of the Flintkote parcel of OU2. A more detailed discussion of the survey results is provided in the OU2 report, since its implications are more pertinent for that APE. No testing occurred within the OU1 APE. Testing throughout the entire project corridor identified five archeological precontact sites and five archeological historic sites. Recommendations were made for further investigation of those sites discovered during the survey which might be eligible for the National Register of Historic Places (Wapora 1977). The location of the tested area for the 1977 survey is indicated on Map 2.

HISTORICAL BACKGROUND

Initial Settlement and Transportation Systems

Lockport derived its name, status, and much of its economic prosperity from the Erie Canal. While canal construction began in the middle of the state in 1817, construction in Lockport began years later in 1823 and was completed in 1824. It was one of the last segments of the canal to be competed due to the need to complete a massive flight of five twin locks just west of Eighteen Mile Creek to climb the Niagara Escarpment. The excess water from the canal that flowed down Eighteen Mile Creek was utilized to power a host of mills and factories in Lockport. Largely unsettled in 1821, the area experienced tremendous growth and by 1835 no less than nine manufactories were operating on the creek below the canal (Fredrickson 2005).

An 1830 map of the area (not reproduced in this report) depicts Lockport laid out into small lots south of present-day Olcott Street. Instead of depicting the mill structures, the Haines map shows the potential for mill power along Eighteen Mile Creek by providing data on the available "head," a term used to describe the vertical

fall of water, and thus the potential power. Haines described four potential mill seats, including with head capacity ranging from 13 feet to 20 feet, including some sites of mills and factories in the OU2 APE (Haines 1830).

Part of the growth of the city and region was due to the marketing of the land by Holland Land Company, who tried to sell its vast land holdings to speculative buyers until 1835 (Klein 2001:262). Lockport was located in Township 14 and the southern portion of Eighteen Mile Creek (also known as Willinks and/or Quocaughgu Creek) included parts of Ranges 15, 60, and 61. These large square lots still largely form the political boundaries and private lots that are seen today in the Lockport area.

Lockport was incorporated as a village in 1829 and a city by 1865 (Fredrickson 2005). The city is physically divided into two major sections roughly along the Erie Canal and the flight of locks. The high ground to the south and west is the commercial heart of the city, and to the north and east the industrial center. Residential structures largely follow the divide as well, with more well-to-do and upper class residents living south of the canal and working-class people and factory workers to the north, near the industrial centers. The northern and eastern portion of the city in which the project area lies is locally known as "Lowertown" indicating its physical location below the flight of locks (Pool 1897). This area below the Niagara Escarpment and the flight of locks and north of the Erie Canal has been listed as the "Lowertown National Historic District."

Although located on the Erie Canal, an important regional transportation system, the village also benefitted from rail service starting in 1836 when the Niagara Falls Railroad began providing regional links. While this rail company closed in 1851, other area rail services expanded significantly in 1852 with the construction of the Rochester, Lockport, and Niagara Falls Railroad (later consolidated into the New York Central) (Fredrickson 2005). The railroad built a large bridge over the Erie Canal. The current structure was built in 1902, and is known locally as the "upside down bridge" due to the use of a Baltimore deck truss that extends under the tracks, although the bridge is actually multi-span utilizing five different bridge segments.

Mill Power

Initial efforts at harnessing the excess water power from the canal started immediately after the canal was constructed and focused on the southeast side of the flight of locks. The first mill constructed along the north side of the canal was operated by Otis Hathaway in 1824 where he milled wheat for flour. This early mill seat was quickly replaced with a much larger facility (7-stories tall) that took full advantage of the water power available at that location. This mill was also replaced when the canal was enlarged in 1838, in its place the Niagara Mills were constructed, producing various cotton products. Due to the erratic nature of the flow of the creek from the canal, the mill augmented power with steam engines. The canal enlargement, however, was not fully completed until 1857 and during this time many other mills were unable to survive (Geise 2015a, b). The Niagara Mills remained in operation by various owners until about 1870 (Pool 1897).

Toward the end of the 19th century, a new group of mills emerged along Eighteen Mile Creek largely focused on the production of paper for use in wrapping, boxes, containers, and other products. The trend began in the 1880s with the opening of the Lockport Paper Company (1884), continued with the emergence of the Traders' Paper Company between 1895 and 1902, and culminated with the incorporation of the United Box Board and Paper Company after 1902 which consolidated various operations along Eighteen Mile Creek (New York State Department of Health 1910).

Around 1889, the former Jackson Lumber Mill (south of Clinton Street) that specialized in sash and blinds was replaced by the Traders' Paper Company paper mill, largely using the same dam and mill pond for a new pulp mill. The plant rapidly expanded over the next five years adding a sulphite mill (to the south of Olcott Street), Niagara Pulp Mill (west side of creek), storage, and railroad track sidings.

The United Box Board and Paper Company was relatively short-lived as it dissolved by 1908, but it left a lasting impact on the Lockport mills. The company reorganized locally as United Boxboard Company and later United Paper Board Company (Weeks 1916). The company then controlled the Franklin Pulp Mill immediately below the dry docks until it was demolished in the 1920s, and similarly the Lockport Pulp Mill (opened in 1889) until it closed in 1941 (Lockport Cave 2015). The Lockport Pulp Mill was slightly different than the other mills

along Eighteen Mile Creek as it relied on waste water from the Barge Canal locks (as provided to the Hydraulic Race Corporation which divided the water between three separate facilities). The waste water merged with the tailrace of the nearby dry docks and eventually back into the main branch of the creek.

The Niagara Pulp Mill closed by 1928 and was converted to hydroelectric production for the paper mill. By 1928, the company was owned by United Board and Carton Company, and later the Beaverboard Company in 1969. The portion of the mill complex north of Olcott Street was subsequently demolished. In 1998, Duraline Abrasives purchased a portion of the former mill site south of Olcott Street that is still standing, it produces coated abrasive materials.

By 1927, the Lockport Paper Company was merged with Beckman-Dawson Roofing Company that specialized in the production of asphalt shingles. Shortly after the merger the company became known as Flintkote producing felt products for new vehicles and continued operations until 1973.

These paper mills produced a large amount of trade waste that polluted the creek and led the state to investigate the industry in 1910. The subsequent report detailed not only the effects of the pollution but the processes, staffing, and products the mills produced (New York State Department of Health 1910).

Between 1908 and 1918, the canal was enlarged and improved again to form the New York State Barge Canal. A new dry dock facility was built by the canal corporation to service its fleet on the north side of the new canal, between the railroad bridge and the Niagara Mills. This was the site of the former B. F. Cady (later Hiram Benedict) dry docks and boat yards that prospered along the canal throughout the last half of the 19th century. The area now serves as the Barge Canal, section shop facility that was expanded in the late 1920s (Historic American Engineering Record 1961).

The Niagara Mills site eventually evolved into two separate facilities. The "L. Huston" cold storage facility, using water power to generate ice for produce and goods shipped along the canal was situated immediately below the canal. To the north was the Lockport Leather company, which only survived for a short time circa 1907 to 1910. It was later purchased by the New York Cotton Batting Company (it may have shared electrical power generated by the upper mill but this is uncertain). The cotton company was defunct by the late 1920s but the building survives to the present, later used as a private garage and truck terminal, today the White Transportation building. The cold storage facility persisted until the 1960s and eventually was demolished.

As it relates to the residential structures on Water Street, it appears these structures were likely built to accommodate middle-tier managers and skilled workers at the nearby paper mills in 1860, as discussed in more detail below. It is unclear if the houses were constructed speculatively, or by the mills themselves.

HISTORICAL MAP REVIEW

Hartgen examined a series of historical maps depicting the APE from as early as 1829 through the latest NYS Department of Transportation planimetric quadrangle in 1996. Only maps with sufficient detail are presented in this report. Other maps are discussed but not included graphically or in the table of structures (Table 4). The map review demonstrates the development of the creek valley for industrial use on the east side and residential settlement. These maps also show how the changes to the creek associated with industrial development and the construction of the Erie and Barge Canals affected the APE.

Each past or current structure within the OU1 APE has been assigned a unique structure number. Map-documented structures—those structures that are depicted on one or more maps—are distinguished using the abbreviation "MDS" after the structure number (e.g. Structure 3 [MDS]).

The 1829 Burr atlas of New York State (Map 4) and the Hutchinson series of canal plans from 1839 show no structures in the project area, but demonstrate the early growth and development of the mills on Eighteen Mile Creek. By 1829, probably prompted by the natural water power and proximity of the canal, three mills were constructed opposite the OU1 APE on the east side of the creek. The first structures built within the OU1 APE appeared on the 1860 Gray atlas map, which depicted five structures in the project area and the lots divided into their current configuration (Map 5). These included the extant Structure 5 at 117 Water Street, as

well as Structure 6 (MDS) at 125 Water Street. One other structure appeared at the north end of the APE (Structure 8 [MDS]) near the corner of William Street on the Gray map.

Spurred by industrial development, houses and outbuildings rapidly filled in the lots on Water Street after 1865. The first fire insurance map which includes the APE dates to 1886 (Map 6), and shows that many of the lots were occupied by a single dwelling and associated outbuildings by that date. Although insurance map coverage is limited to the southern half of the APE until 1909, they still provide a sense of how rapidly the block developed during the course of 25 years. Houses were built at 99, 105, 113, and 117 Water Street (Structures 2, 3 [MDS], 4, and 5) and a barn (Structure 1 [MDS]) was built at the south end of the APE, which would persist until the 1920s, when it became dilapidated. Only one outbuilding was depicted (Structure 4a [MDS]) at 113 Water Street in 1886, but it is likely that other sheds, likely serving as privies, likely stood on other properties in the APE along the creek bank, as depicted on later maps (Maps 9–11).

Lot by lot, the properties developed in a similar fashion, with privies and barns slowly giving way to automobile garages during the twentieth century. At 99 Water Street (Structure 2), the northern wing of the dwelling or perhaps the entire residence, was under construction in 1886, as indicated on the Sanborn map (Map 6). A barn on the property (Structure 2a [MDS]) had an address on the 1903 and 1914 Sanborn maps of 99 ½ Water Street, suggesting it could have been used as a shop. The 1919 map (Map 10) stated that the structure was dilapidated and the building no longer appeared on subsequent maps. A small shed appeared (Structure 2b) on the 1928 and 1948 Sanborn maps (Maps 11–12).

At 105 Water Street, the house (Structure 3), a one-and-a-half-story dwelling with one-story rear and side additions, appeared first on the 1886 Sanborn map (Map 6). By 1903 (Map 7), a series of barns, sheds, and an automobile garage occupied the southeast corner of the yard (Structure 3a). The automobile garage and a very small shed persisted at least until the middle of the 20th-century (Map 12).

The house at 113 Water Street (Structure 4) first appeared on maps in 1886 (Map 6). The house was accompanied by a succession of sheds (Structures 4a–4d [MDSs]) built in various locations around the yard and first depicted in that same year, culminating with an automobile garage (Structure 4e) standing in 1928 (Map 11).

The house at 117 Water Street (Structure 5) was built by 1860 and had a similar history of evolution, with the exception of the fact that sometime during the 1920s (Map 11), a second, smaller dwelling (Structure 5b [MDS]) was constructed at the rear of the property together with a small shed, probably for a privy. This rear dwelling, 117½ Water Street, was removed by 1948, but the shed persisted on the creek bank.

The house at 125 Water Street (Structure 6 [MDS]) was also built by 1860, and is one of the earliest dwellings on the block (Map 5). A series of outbuildings (Structures 6a–6d [MDSs]) also occupied the property, including a hen house to the north. This lot was probably subdivided to accommodate the construction of 127 Water Street (Structure 11), which was built in the second quarter of the 20th century (Map 12).

A series of structures at the northern end of the APE first appeared on the 1860 map (Map 5). Beginning with the construction of Structures 7 and 8 (MDS), these lots were the site of a dwelling at 143 Water Street and a barn or shop at 143½ Water Street, respectively. A small building at the rear of the lot, Structure 8a (MDS), was indicated on the 1928 map (Map 11), and was marked with a "D.", which indicates a dwelling on the fire insurance maps.

The 1980 USGS topographic quadrangle and the 1996 NYSDOT planimetric quadrangle were also examined for this map review, but neither are presented in this report. Both maps lacked sufficient detail to determine any changes in the character of the OU1 APE.

Table 4. Summary of map-documented (MDS) and existing structures within the OU1 APE, Eighteen Mile Creek Superfund Remediation Investigation/Feasibility Study

Address	Structure	1860 (Map 5)	1886 (Map 6)	1903 (Map 7)	1908 (Map 8)	1914 (Map 9)	1919 (Map 10)	1928 (Map 11)	1948 (Map 12)	Extant
97 Water	1	-	Barn	Barn		Barn	Barn (dilapidated)	-	-	No
	1a	-	-	-	-	Shed	-	-	-	No
99 Water	2	-	Dwg., being built	D.		D.	D.	D.	D.	Yes
	2a	-	-	Barn, 99 ½	-	Barn, 99 ½	Barn, dilapidated	A.	A.	
	2b	-	-	-	-	-	-	Shed	Shed	
105 Water	3	-	Dw'g.	D.		D.	D.	D.	D.	No
	3a	-	-	Sheds	Barn	Shed	Shed	A., Shed	A., Shed	No
113 Water	4	-	Dw'g.	D.		D.	D.	D.	D.	Yes
	4a	-	Shed	Shed	-	-	-	-	-	
	4b	-	-	-	-	Shed	Shed	-	-	
	4c	-	-	-	-	-	Shed	-	-	
	4d	-	-	-	-	-	Shed	Shed	-	
	4e	-	-	-	-	-	-	A., Shed	A., Shed	
117 Water	5	X	Dw'g.	D.		D.	D.	D.	D.	Yes
	5a	-	-	Barn	Barn	Shed	Shed	Shed	-	
	5b	-	-	-	-	-	-	D., 117 ½, Shed	Shed	
	5c						-	Shed	A.	
125 Water	6	X	-	-		D.	D.	D.	D.	No
	6a	-	-	-	Barn	Shed	-	-	-	
	6b	-	-	-	-	-	Hen Ho.	Hen Ho.	-	
	6c	-	-	-	-	-	-	A., Shed	-	
	6d	-	-	-	-	-	-	-	A.	
143 Water	7	-	-	-	G. Hennig	D.	D.	D.	D.	Yes
-	8	X	-	-	G. Hennig, Barn	Barn, shed, 143 ½	Barn, shed	A., Shed	A., Shed	No
-	8a	-	-	-	-	-	-	D.	D.	No
-	9	-	-	-	-	-	-	D.	D.	No
-	9a	-	-	-	-	-	-	-	A.	No
-	10	X	-	-	-	-	-	-	-	No
127	11	-	-	-	-	-	-	-	D.	Yes

Key: D., Dw'g.: dwelling; Ho.: house; A.: Automobile garage. Half addresses (eg. 143 ½) indicate addresses found on the Sanborn maps.

ARCHITECTURAL DISCUSSION

Structures within the project APE include five dwellings (Structures 2, 4, 5, 7, and 11; Photos 7–11). All are wood-framed, and were constructed between c.1850 and 1948. Each is a modest single-family vernacular dwelling. The majority are of upright-and-wing form. One example, dating from the second quarter of the 20th century, is a bungalow style dwelling.

Photo 7. Structure 2, 99 Water Street, looking north. The upright section of this vernacular upright-and-wing house was constructed in 1886 (Sanborn 1886).

Photo 8. Structure 4, 113 Water Street, looking north. This vernacular dwelling was constructed between 1860 and 1886.

Photo 9. Structure 5, 117 Water Street, looking north. This upright-and-wing vernacular wood frame house was built by 1860, possibly as early as c.1850.

Photo 10. Structure 7, 143 Water Street, looking north. This two-story vernacular house was built before 1860, and has late-19th century additions.

Photo 11. Structure 11, 127 Water Street, looking east. This bungalow style home was constructed between 1928 and 1948.

ARCHEOLOGICAL SENSITIVITY ASSESSMENT AND POTENTIAL

Precontact Archeological Sensitivity and Potential

The position of the APE on a bend of Eighteen Mile Creek and the presence of precontact sites in similar locales in Niagara County suggests that the OU1 APE has a moderate to high sensitivity for precontact deposits. The 1839 map of the Erie Canal depicted the APE with an embankment running parallel to the course of the creek. As the block developed, this embankment was likely either graded or filled to provide a flat surface for the residential yards and to raise the lots higher above the creek. This may have buried precontact deposits beneath historic fill. Depending on the depth of the historic fill and the depth of alluvial soils in the APE, there may be a high potential for finding precontact deposits. This is especially true closer to Water Street, where grading and filling were likely minimal. The potential for finding archeological sites may also be affected by the nature of historical changes to the creek's course, especially considering the historic effects of the canal and the several mills and culverts.

Historic Archeological Sensitivity and Potential

The 29 map-documented structures indicated on historical maps demonstrate the high historic sensitivity of the APE. Sensitivity for earlier 19th-century contexts is limited to those lots where houses were depicted on the 1860 Gray atlas, in particular at 143 Water Street and 117 and 125 Water Street. The site visit indicated that disturbance is minimal in the APE and the potential for locating significant historic features is considered to be high. Sheds indicated very close to the creek bank on the Sanborn maps (i.e., Structure 3a [MDS], Map 6) may have been eroded by floods. Any historic archeological deposits would likely be associated with the 19th-century development of the APE and may include, but are not limited to, features such as privies, cisterns, wells, landscape features, outbuilding foundations, and sheet midden deposits.

RECOMMENDATIONS

Hartgen recommends a Phase IB field reconnaissance survey of the OU1 APE. Because the APE contains hazardous materials, a detailed archeological survey plan should be developed in coordination with consultation partners. The plan should address the scope and methods of the survey, and artifact collection, handling and disposition relative to limitations presented by the contaminants. This survey should target precontact and 19th-century deposits with high interpretive value, such as archeological features, and should minimize the collection of potentially contaminated artifacts from less informative deposits. Mechanical testing may be appropriate depending on the depths of impacts, the presence of contaminants, and depth of potentially cultural soils. Remediation monitoring by an archaeologist may also be an appropriate measure for fieldwork, considering the nature of contaminants in the OU1 APE. Any remediation efforts in OU1 would occur in conjunction with the associated activities at OU2.

None of the standing structures within the OU1 APE appears to retain enough integrity to warrant individual listing on the National Register.

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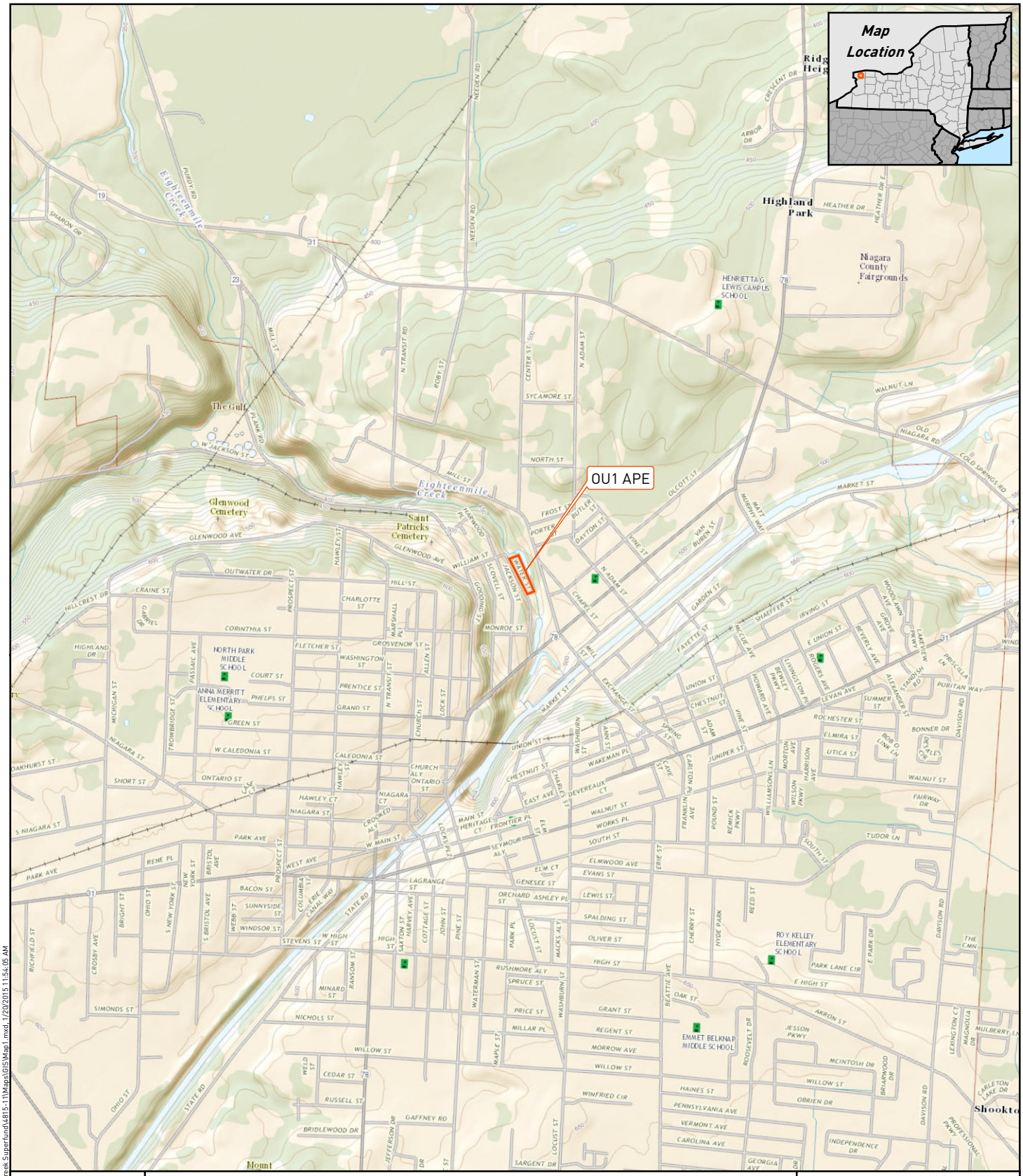
MAPS



1,000 0 1,000 2,000 Feet

300 0 300 600 Meters

Note: Contour interval is 10 feet.

Project Location (USGS 2014)

HARTGEN archeological associates inc

Map 1

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Project Map
(Environment and Ecology, Inc. 2014;
(Hartgen 2014; NYSITS 2011)

HARTGEN
archeological associates inc

Map 2

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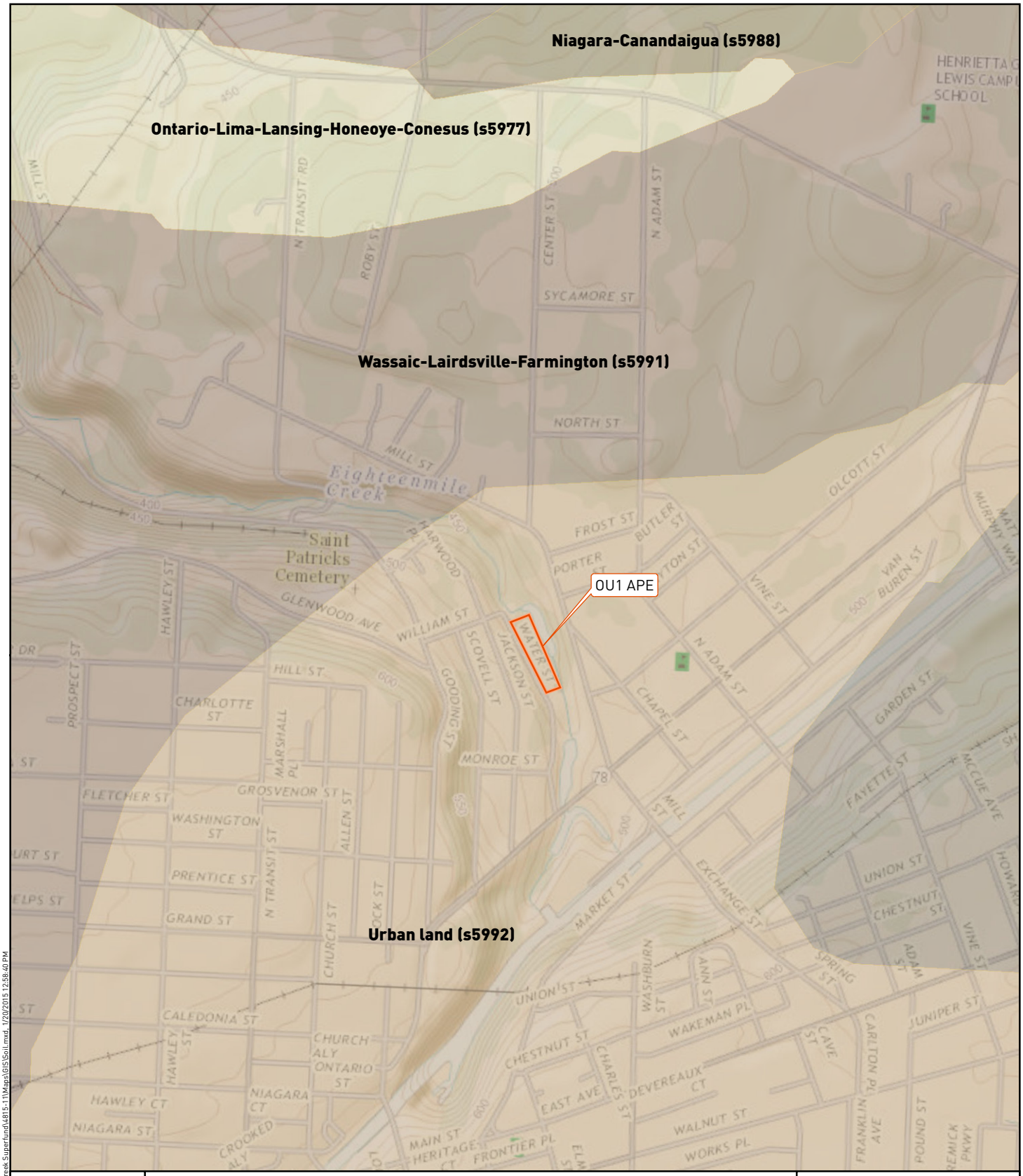

Soil Map
(USDA NRCS 2014, USGS 2014)

HARTGEN
archeological associates inc

Map 3

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N

1,000 0 1,000 2,000
Feet
300 0 300 600
Meters

Burr 1829

HARTGEN
archeological associates inc

Map 4

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Legend

Map-Documented Structure

Area of Potential Effects (APE)

100 0 100 200 Feet

30 0 30 60 Meters

Gray 1860

HARTGEN archeological associates inc

Map 5

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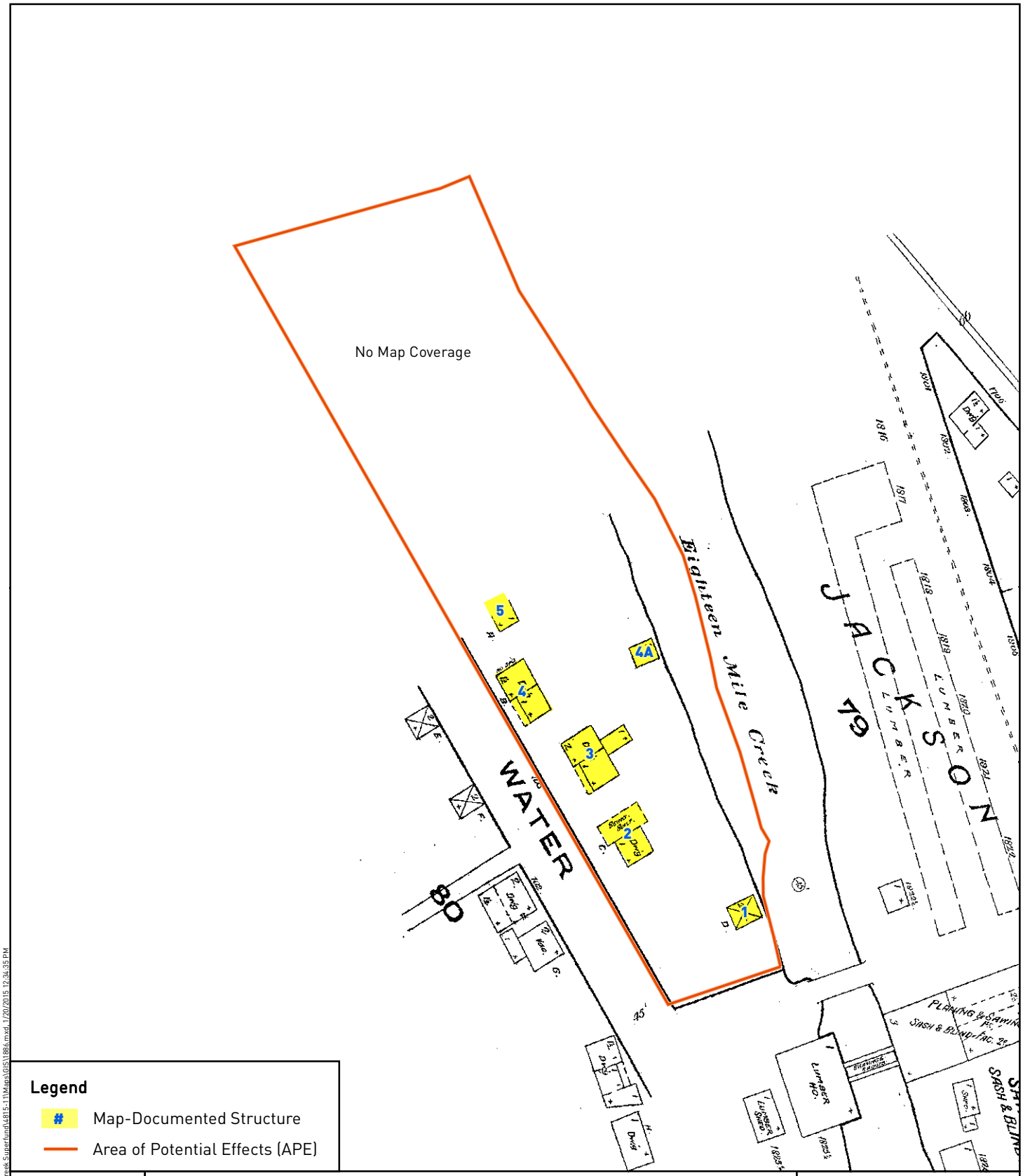

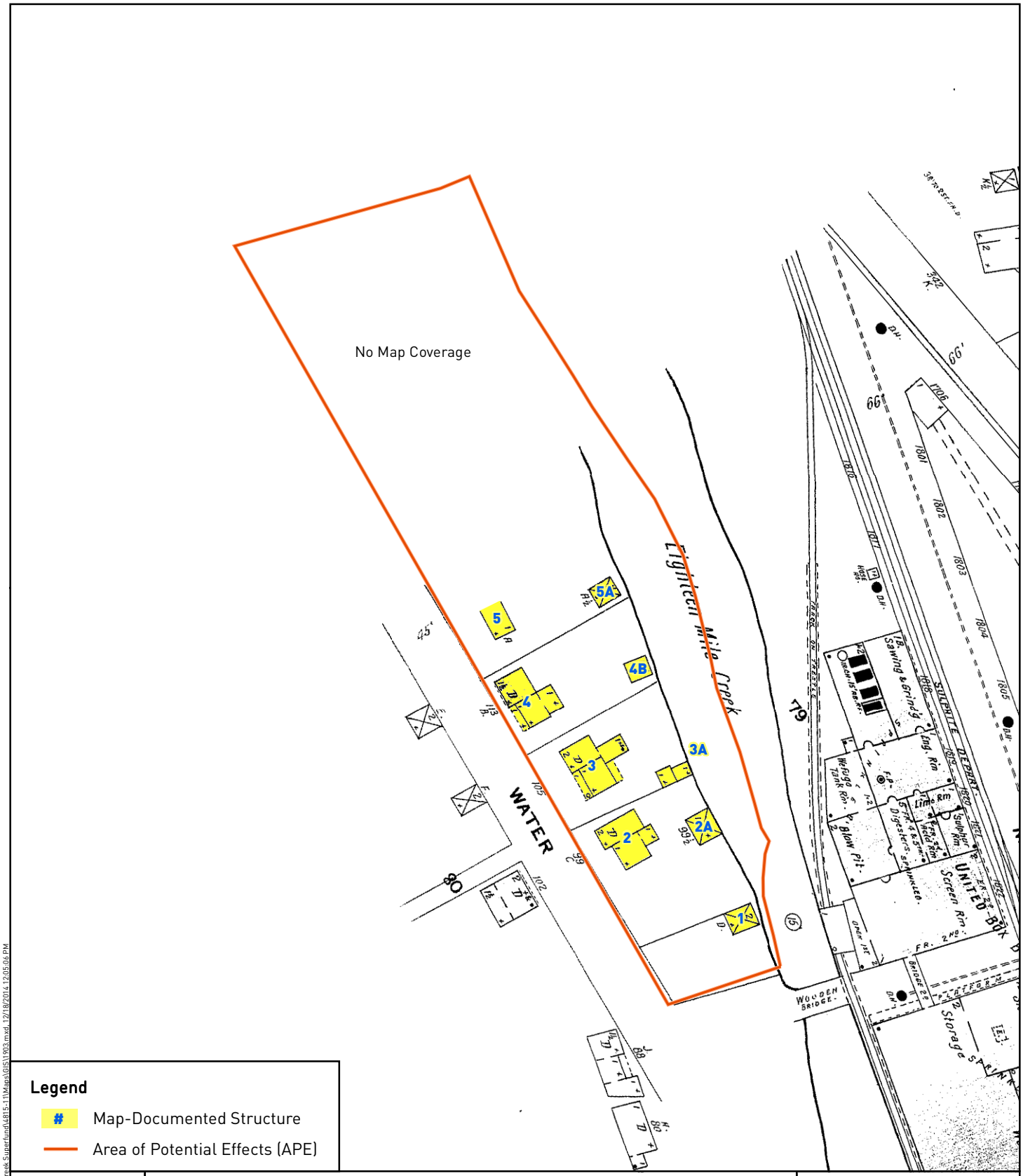

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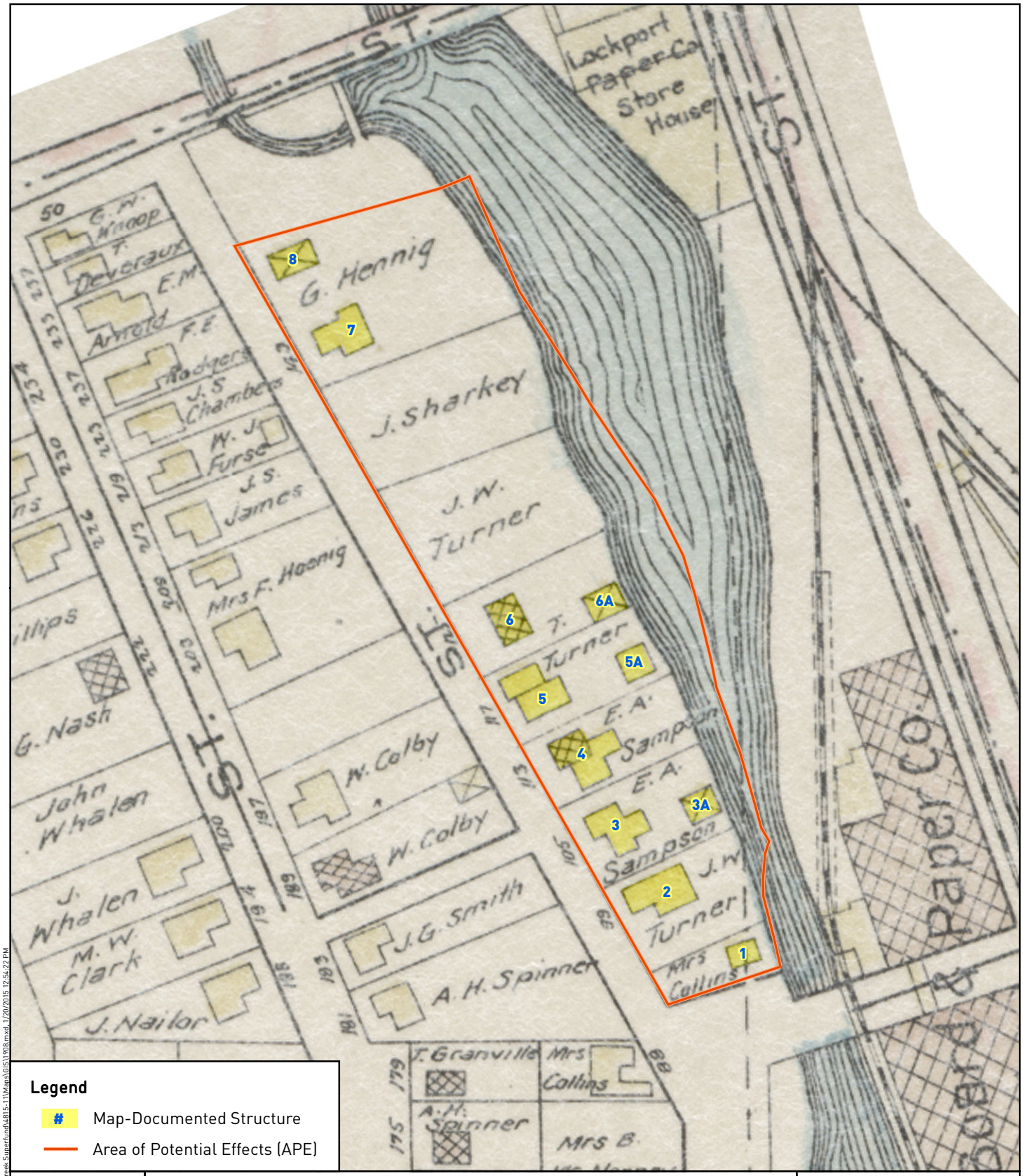

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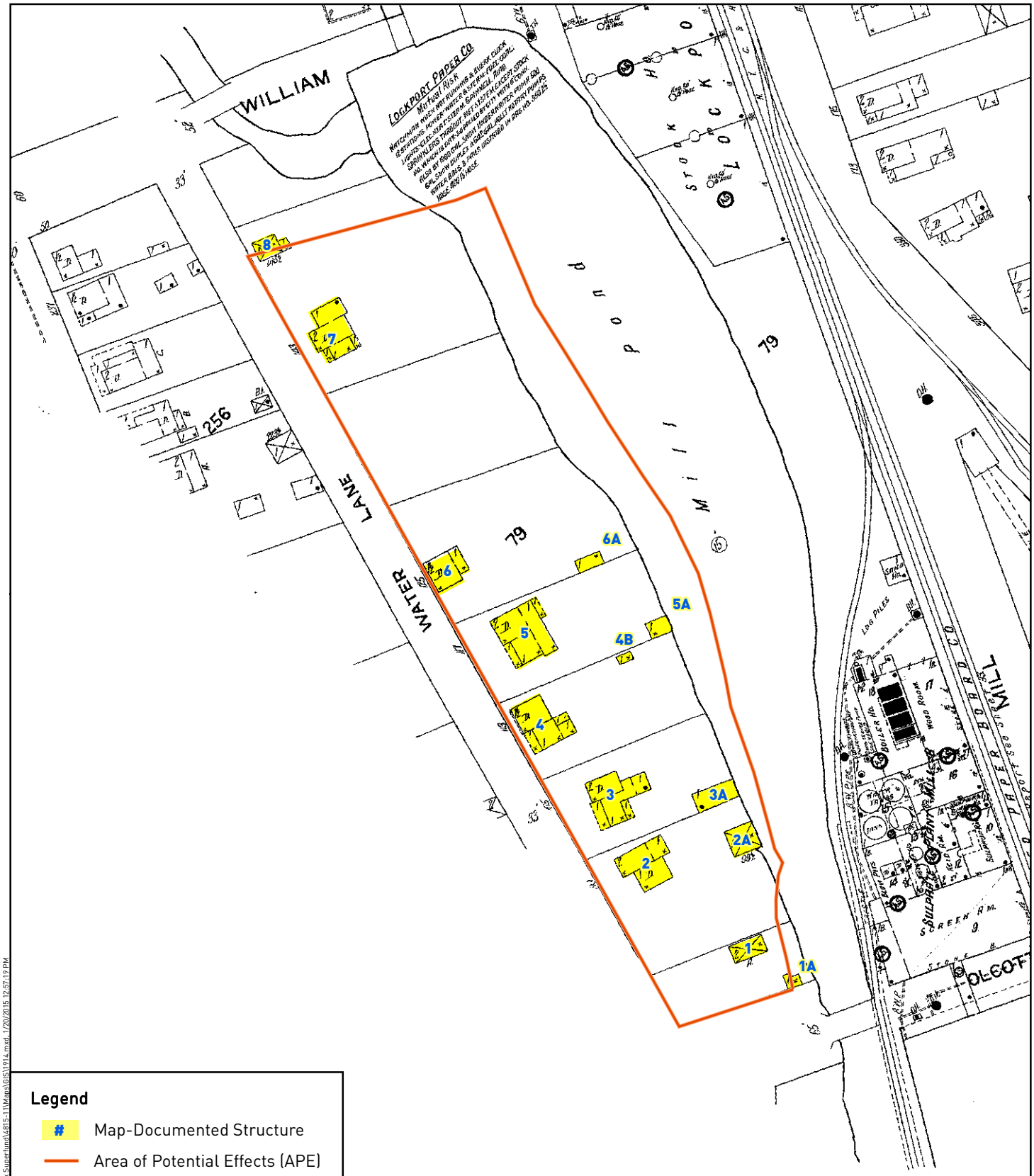

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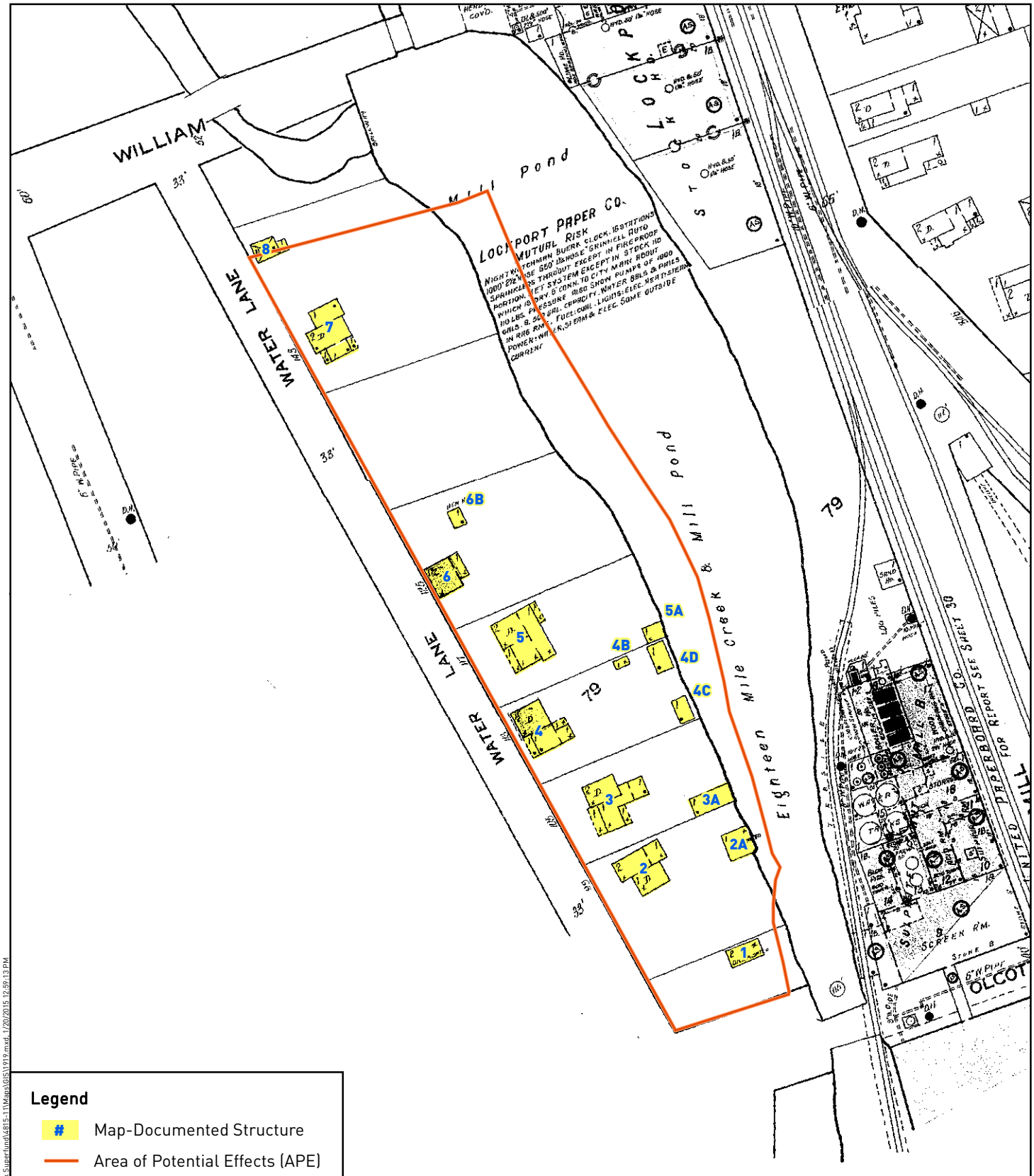

Legend

- # Map-Documented Structure
- Area of Potential Effects (APE)

N

50 0 50 100 Feet

15 0 15 30 Meters

Sanborn Map Company 1919

HARTGEN archeological associates inc

Map 10

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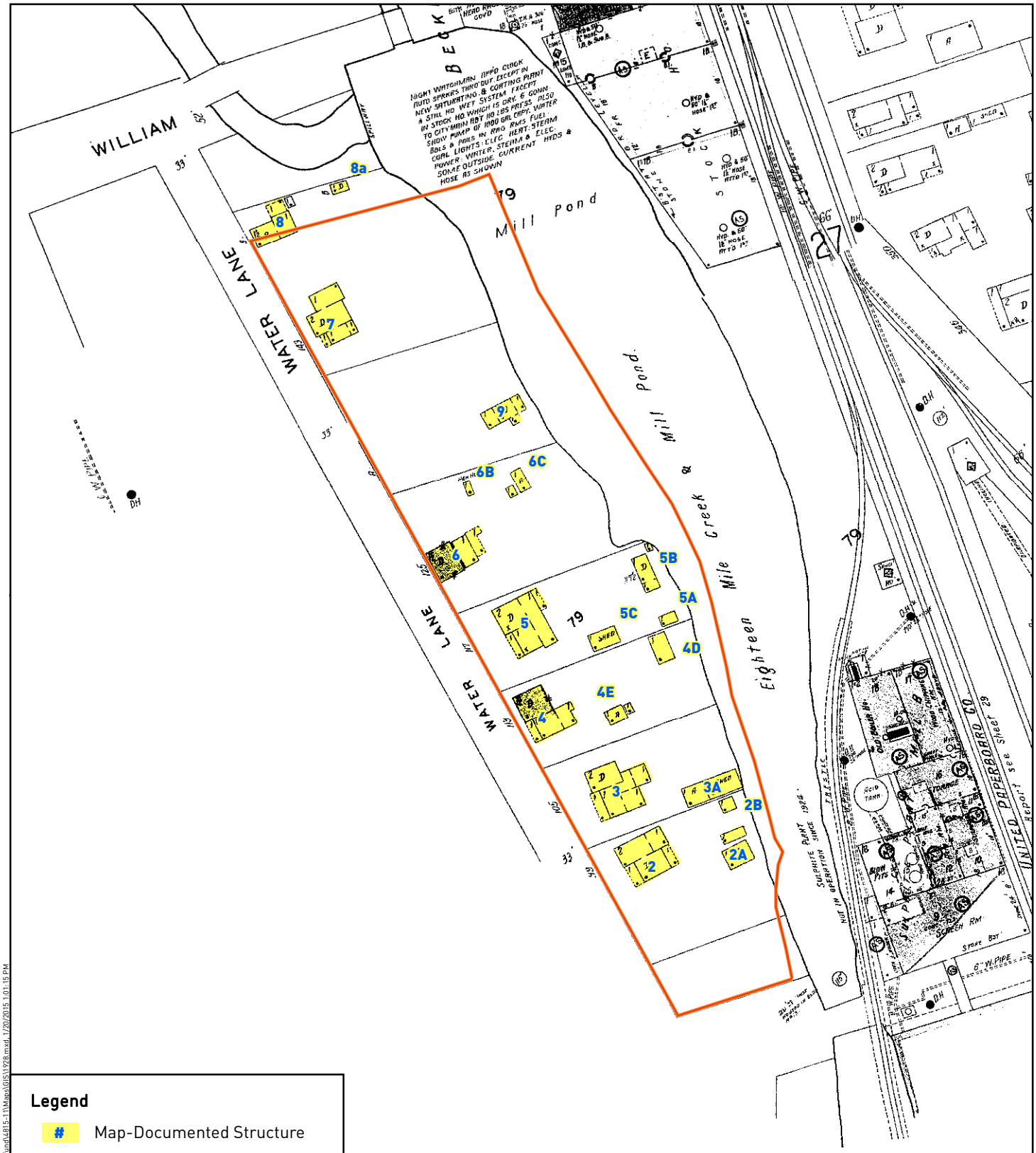

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- # Map-Documented Structure
- Area of Potential Effects (APE)

N

50 0 50 100 Feet

15 0 15 30 Meters

Sanborn Map Company 1928

HARTGEN archeological associates inc

Map 11

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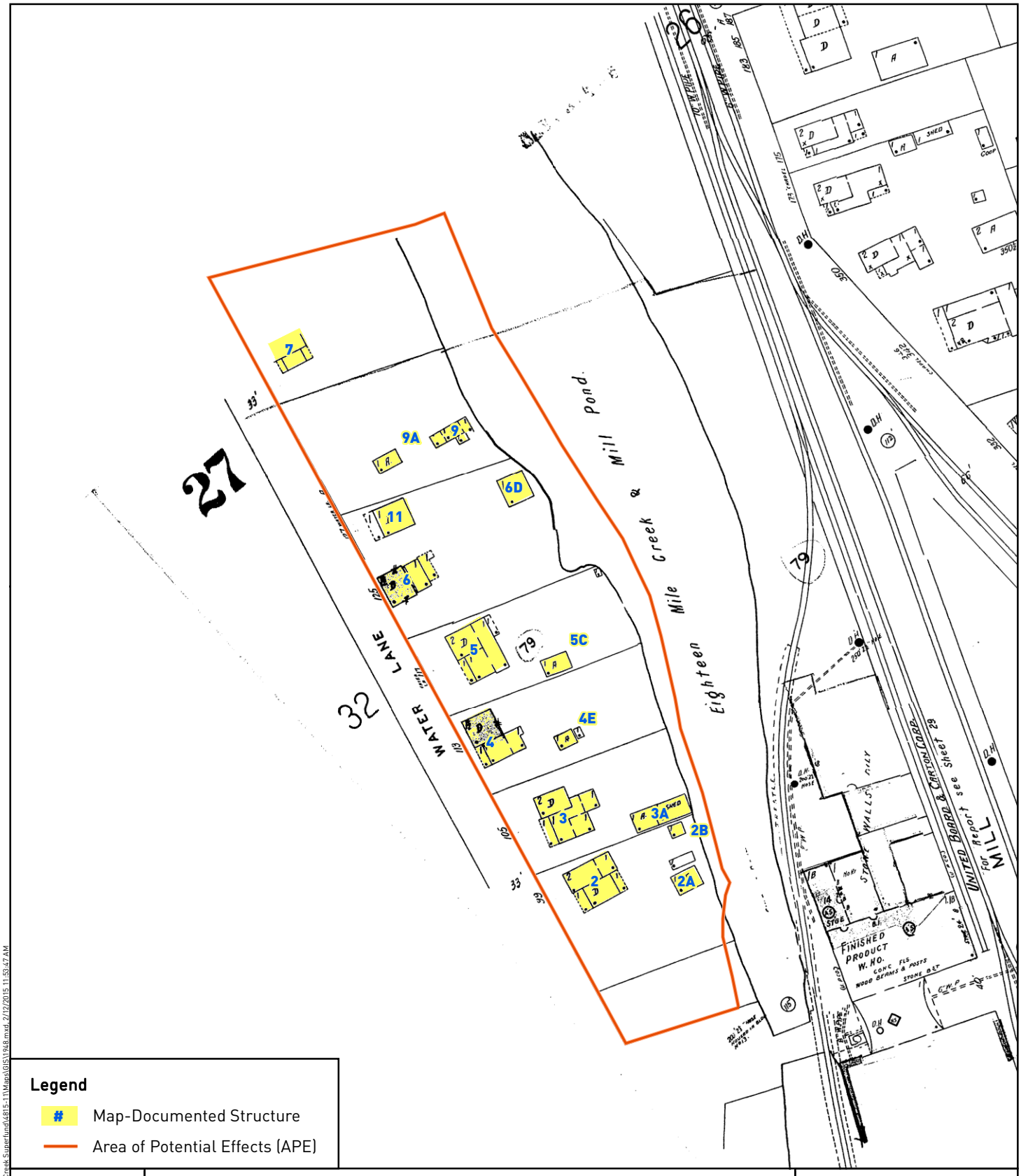

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Map 12

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