# IDENTIFICATION AND HISTORICAL ASSESSMENT OF TARGETS 37a, 37b, 37c, AND 39, LOCATED IN THE 6th STREET BASIN, AND TARGETS 31 AND 31b, LOCATED IN TURNING BASIN 4, OF GOWANUS CANAL

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## ABSTRACT

Seven targets were identified as potential cultural resources as part of a side scan sonar survey of Gowanus Canal conducted in 2010 (Cox). This report details the available information concerning six of those targets, specifically targets 37a, 37b, 37c, and 39, located in the 6th Street Basin, and targets 31 and 31b, located in Turning Basin 4. The identity of the seventh target, 31a, was detailed in a separate report.

Target 37a has been identified as the wrecked remains of a covered wooden barge, likely built in the 1920s. The barge most likely sank at or near its present site in 1979. Target 37b has been identified as a steel deck scow of all-welded construction, likely built in the decade following World War II, and probably abandoned at this location following the sinking of target 37a. Target 37c has not been conclusively identified, but it may be related to a failed bulkhead structure or pieces that have separated from target 37a. Target 39 has not been conclusively identified, but it may be sections of floating work platforms that were in use in the 6th Street Basin in recent years. Target 31, the wreck of a small boat, could not be seen from the water's surface at low tide, but a boat of similar dimensions was found in the vicinity of target 31c. The small boat photographed at target 31c is a metal motor boat with an outboard motor and an overall form that strongly resembles boats made after World War II up to the present time. Target 31b is likely related to a collapsed bulkhead around the northern Third Avenue bridge pier.

Based on the above information targets 37a, 37b, and 31 do not appear to meet the criteria for listing in the National Register of Historic Places and are, therefore, not eligible for the National Register of Historic Places. Targets 37c and 39 were not conclusively identified and target 31b should be confirmed. However, the only way to further evaluate these targets is by visual inspection of the features themselves to yield any further information as to their nature and origin of the target. Therefore, level 2 archaeological monitoring (as described in the Cultural Resource Monitoring Plan – Gowanus Canal Superfund Site) should be conducted during the removal of targets 37c, 39 and 31b to attempt to positively identify these targets. Once identified these targets will be assessed for their eligibility for the National Register of Historic Places.

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## 1.0 INTRODUCTION

In 2010 the U.S. Environmental Protection Agency (EPA) designated the Gowanus Canal as a Superfund cleanup site. A subsequent side scan sonar survey of the Gowanus Canal in 2010 (Cox) identified a number of obstructions in the canal, including potential cultural resources designated as targets 37a, 37b, 37c, and 39, located in the 6th Street Basin, as well as targets 31 and 31b, located in Turning Basin 4 (Figure 1 & 2). As progress is made towards implementing a cleanup of the Gowanus Canal, it is first necessary to identify any items of potential historic or cultural significance that will be impacted by the project. This study has been prepared to identify and assess the significance of targets 37a, 37b, 37c, 39, 31, and 31b.

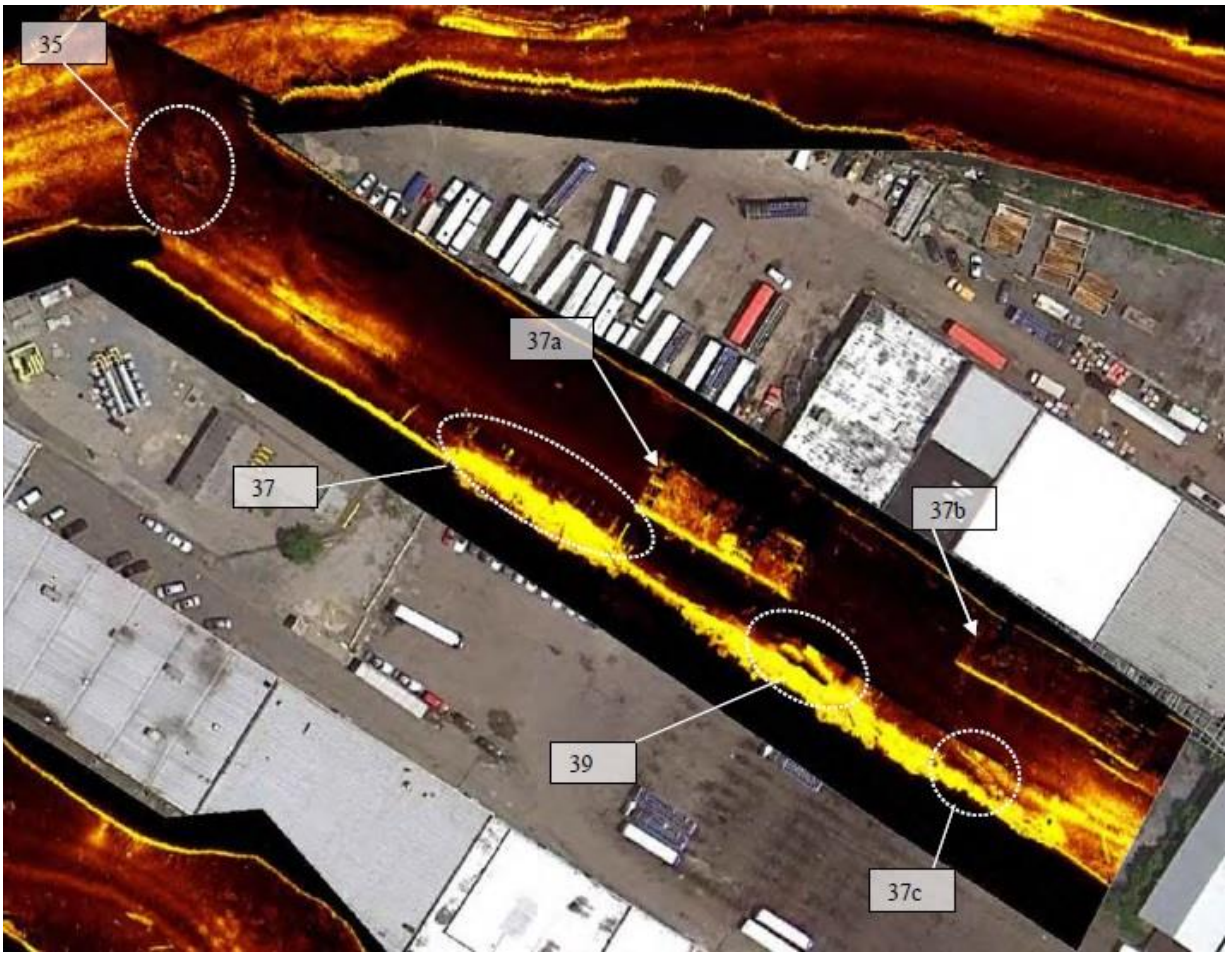



**Figure 1-** Side scan sonar targets in the 6th Street Basin (Cox, 2010).

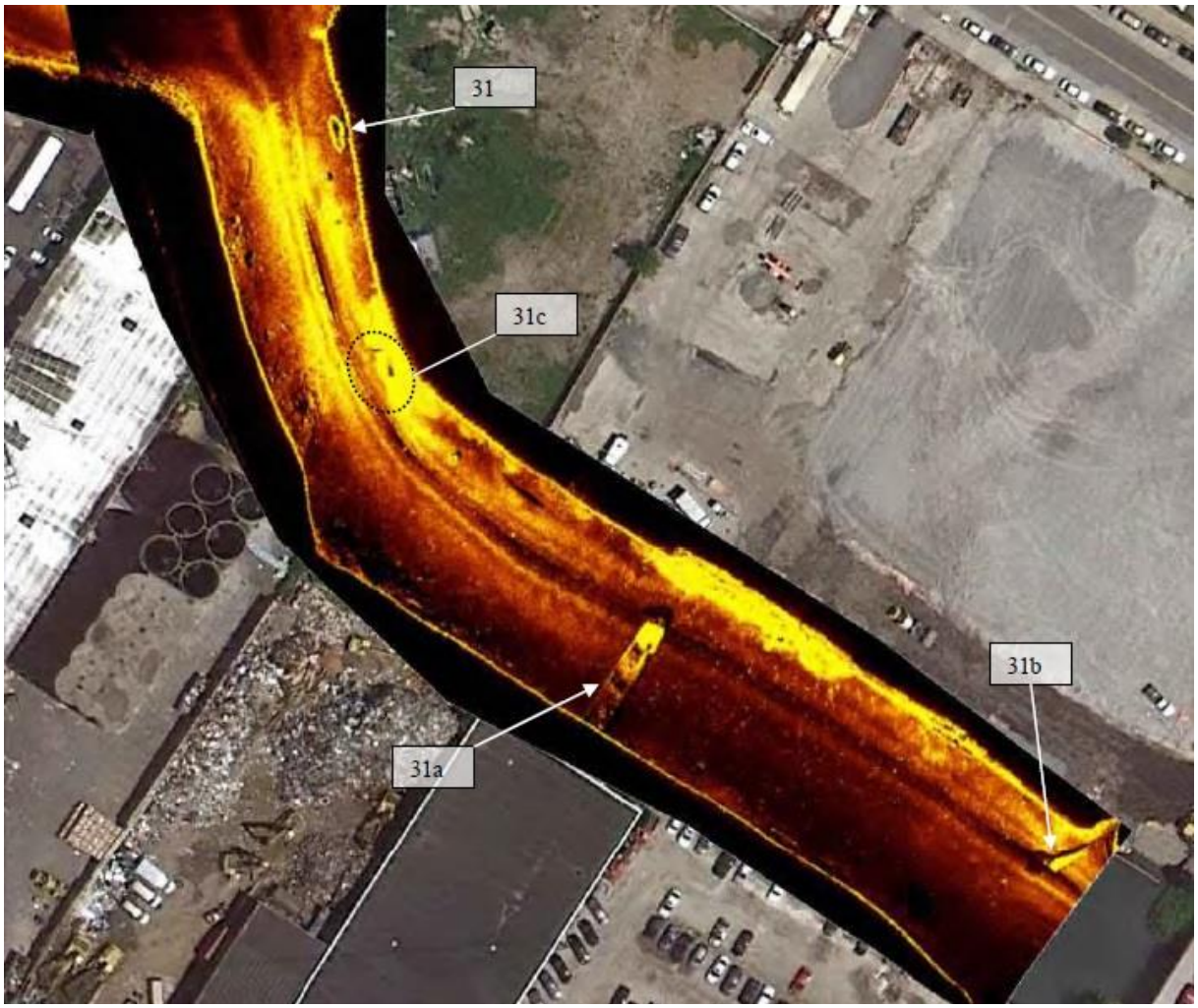


Figure 2 - Side scan sonar targets in Turning Basin 4 (Cox, 2010).

## 2.0 METHODOLOGY

Research began with information provided in the Gowanus Canal Side Scan Sonar Report (Cox, 2010). Further research was based upon recent photographs, taken at low tide, of the objects of interest or their surroundings. Most of these photographs were taken by Katie French of AHRS with the assistance of the Gowanus Dredgers Canoe Club on April 11, 2016. Professional expertise in naval architecture and maritime history then provided a context for further research. In some cases, information readily available online at various sites related to the railroads, lighterage age, and aerial mapping of New York City (see Section 5.0 References for specific sites), allowed for a general identification of the resource as well as information on the historical context of each resource.

## 3.0 RESULTS

Research provided a fairly complete historical context for the two barges in the 6th Street Basin. Targets 37a and 37b are most likely barges that likely once the property of the adjacent Spartan Dismantling Corporation. Target 37a most likely sank in 1979 under the name SPARTAN 357. Target 37b was most likely in its current location at the time of the sinking of target 37a and subsequently left to deteriorate.

The other four targets, which are all significantly smaller than the barges, have yielded some information as to their origins. Target 37c might be structural components from a failed bulkhead structure or possibly large pieces that have broken away from target 37a, the wreck of a wooden barge. Target 39 bears a strong resemblance to floating work platforms that were present in the 6th Street Basin as recently as 2012, most of which are now absent.

The side scan sonar imagery of target 31 suggests the presence of a small boat, but no small boat is visible at this location at low tide. A small boat is visible at the approximate location of target 31c which had previously been identified as debris (Cox, 2010). This suggests that there are either two small boats, one at target 31 and one at target 31c, or the possibility that target 31 has gradually moved to its current position in way of target 31c. The boat at target 31c is a small motor boat that likely sank sometime after 1955. If a small boat is also present at target 31, it too likely sank after 1955.

Target 31b remains unknown. At low tide there appears to be a high likelihood that this target is related to the adjacent bulkhead structures near the northern Third Avenue bridge pier. No other features can be seen in this vicinity at low tide. Below is the information reviewed to make the above determinations for each sonar target.

*Target 37a*

Per the 2010 side scan sonar survey, target 37a is a square-ended barge, roughly 110-feet long and 32-feet wide (Figure 3). The barge, located roughly in the center of the 6th Street basin, is described as being made of wood, with a wooden superstructure that is visible above the water surface (Photograph 1).


**Figure 3 -** Figure 3: Side scan sonar image of Target 37a (Cox, 2010).

Photograph 1 - Recent photograph of the shipwreck Target 37a (French, 2016).

The recent images of this wreck show a square-ended barge of wooden construction. The remains of a superstructure above the barge's deck indicate that this particular barge was a covered barge. These barges were characterized by a one story deckhouse that covered most of the barge deck, and were ubiquitous throughout the Port of New York and New Jersey between 1860 and 1960. This time period saw the extensive use of waterborne transportation, including barges, to convey cargo between railroad terminals and warehouses throughout the Port of New York and New Jersey.

A search for reports of barges sinking in the Gowanus Canal revealed that barge sinkings were common in the early decades of the 20th-century. Because of this, it was necessary to better define when this particular barge likely sank. A subsequent review of available aerial photographs of the 6th Street Basin, combined with the above photographic evidence that the superstructure of this particular wreck is visible above the water at all tidal conditions, indicated that this barge did not sink before 1974 and was, by 1996, already in a state of serious decay. This information provided sufficient insight to identify the most probable identity of the barge at the time of its sinking, but the once-ubiquitous nature of this barge type, combined with a general lack of vessel documentation, precludes the compiling of a complete operational history for Target 37a.

Lighterage typically refers to a process in which cargo is transferred from larger vessels to smaller ones in order to allow the larger vessel to navigate shallower waters, but the term

came to mean something slightly broader in the area around the Port of New York and New Jersey. Here, most railroad terminals were on the New Jersey side of the Hudson River and did not directly connect with the berths for large, oceangoing vessels. A so called "lighterage system" was developed to facilitate the movement of cargo between ships, trains, and warehouses. A key component of this lighterage system were the thousands of unpowered (no engine) and unrigged (no sails or rigging) barges.

A number of different barge types were in use during this time. Common types included hold barges, deck scows, hoisting barges, car floats, and covered barges (Foster and Steuerwald, 1992). Hold barges carried bulk cargo in a cargo hold down within their hulls; a hold could be fitted with a removable cover or simply left open. Deck scows were loaded with cargo on their continuous, open-air decks. A hoisting barge, such as stick lighters and derrick lighters, were fitted with a lifting apparatus, typically a mast or A-frame, for hoisting cargo. Car floats were used to transport rail cars over water. Covered barges were much the same as deck scows, but they were fitted with a permanent, shed-like superstructure to protect cargo from the elements and from theft. This structure typically had a pair of large doors with removable hatch covers on each side for cargo loading and unloading. Some covered barges were also fitted with a small cabin on top of the superstructure. Regardless of the barge type, all were unpowered and relied upon separate tugboats to be moved from one location to another (Figure 4).


*Gowanus Canal – 1935 photograph by Seymour "Zee" Zolotorofe.*

**Figure 4 -** A tugboat pulls a covered barge on Gowanus Canal; hold barges tied up at left (Verel, 2013).

Beginning around 1850, construction of the Gowanus Canal began on what was formerly Gowanus Creek. As New York City's waterfront became increasingly overcrowded from increased commerce, the Gowanus Canal became a major hub for Brooklyn's shipping activity. From 1915 until 1950 Gowanus was the busiest commercial canal in the country (Verel, 2013). During the 1920s annual vessel transits numbered between 23,000 and 25,000 with 50 to 60 businesses using the canal (Olsen, 2007). This traffic was driven by the lighterage system in use throughout the Port of New York and New Jersey.

During the 1920s the cost of wood construction materials in and around New York City had begun to make steel construction increasingly attractive for barges. This coincided with the onset of the Great Depression in 1929. The result of these two factors was a precipitous drop in the construction of wooden barges after 1930 (Merwin, 2014). Construction of new wooden barges have remained relatively rare in this country ever since. In the years following World War II, hundreds of steel barges were built to replace the wooden barges that had reached the end of their expected service life (while somewhat subjective, the anticipated service life for maritime vessels is typically 30-50 years, with rare exceptions surviving beyond this range).

Infrastructure improvements, such as the opening of the Gowanus Expressway in 1964 and the advent of containerized shipping in the 1950s, were principal contributors to the decline of the lighterage system and the importance of the Gowanus Canal. Annual vessel transits were fewer than 5,000 in 1965 (Verel, 2013). Approximately 25 businesses and city agencies were using the canal and basins in that same year (Olsen, 2007). The United States Army Corp of Engineers suspended regular maintenance dredging of the Gowanus Canal in 1955 and the last maintenance dredging event occurred in 1971 (CH2M Hill, 2011). This decline of the lighterage system continued and the last documented use of a covered barge (constructed of steel) in New York Harbor was in 1984 (Merwin, 2014).

As noted above, significant numbers of steel barges began to replace their wooden predecessors following World War II. While many wooden barges would continue to see service under new owners, great numbers of wooden barges were abandoned during the 1960s and 1970s in mudflat areas along the Hudson River (Merwin, 2014). The wood from which these barges were constructed, much of which was rotting after decades of waterborne service, had no real scrap value. Even today, the remains of covered barges can be seen in ship graveyards like the Arthur Kill Ship Graveyard on Staten Island (Figure 5).

**Figure 5 -** Arthur Kill Ship Graveyard with arrow pointing to one of many covered barges (Bing Maps).

The Lehigh Valley No. 79, a wooden covered barge of New York's lighterage system, survives to this day as the Waterfront Museum in Brooklyn, New York. Built in 1914, this 86'-long, 30'-wide covered barge was first listed on the National Register of Historic Places in 1989 (Merwin, 2014). The National Register nomination paperwork submitted in 2015 includes plans for the barge (Figure 6) as well as a number of photographs. One photograph shows one of the three centerline structural stanchions between the main deck and the overhead (Figure 7). The size and quantity of these stanchions, necessary to support the superstructure, were kept to a minimum to allow for cargo movement and storage on the main deck. These stanchions are a common characteristic of wooden covered barges operating in New York Harbor.

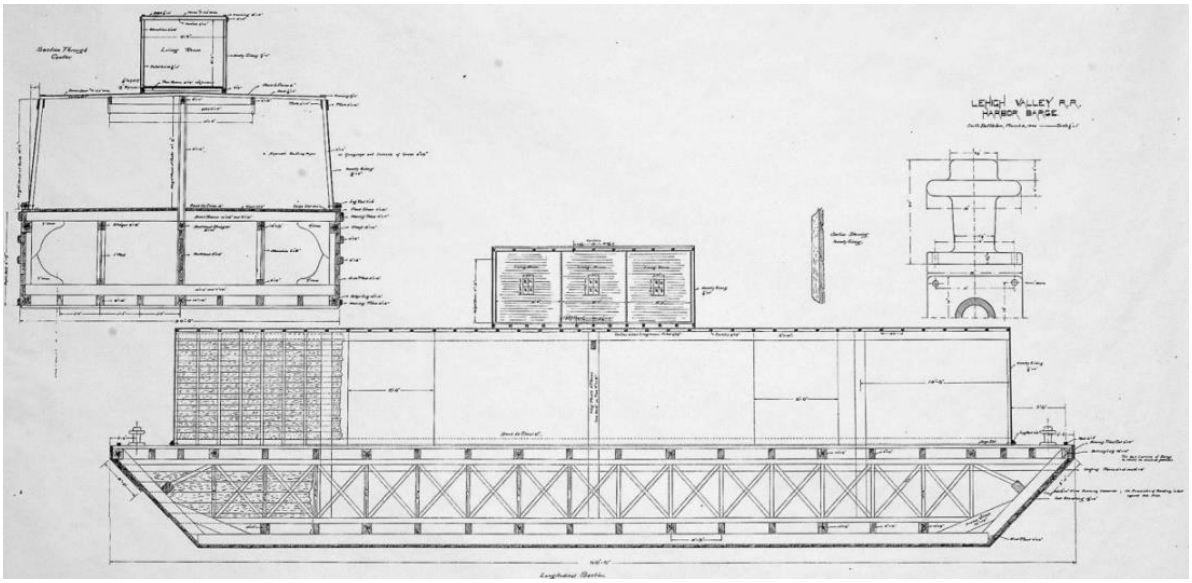


**Figure 6 -** Plans for the Lehigh Valley No. 79 (Merwin, 2014).

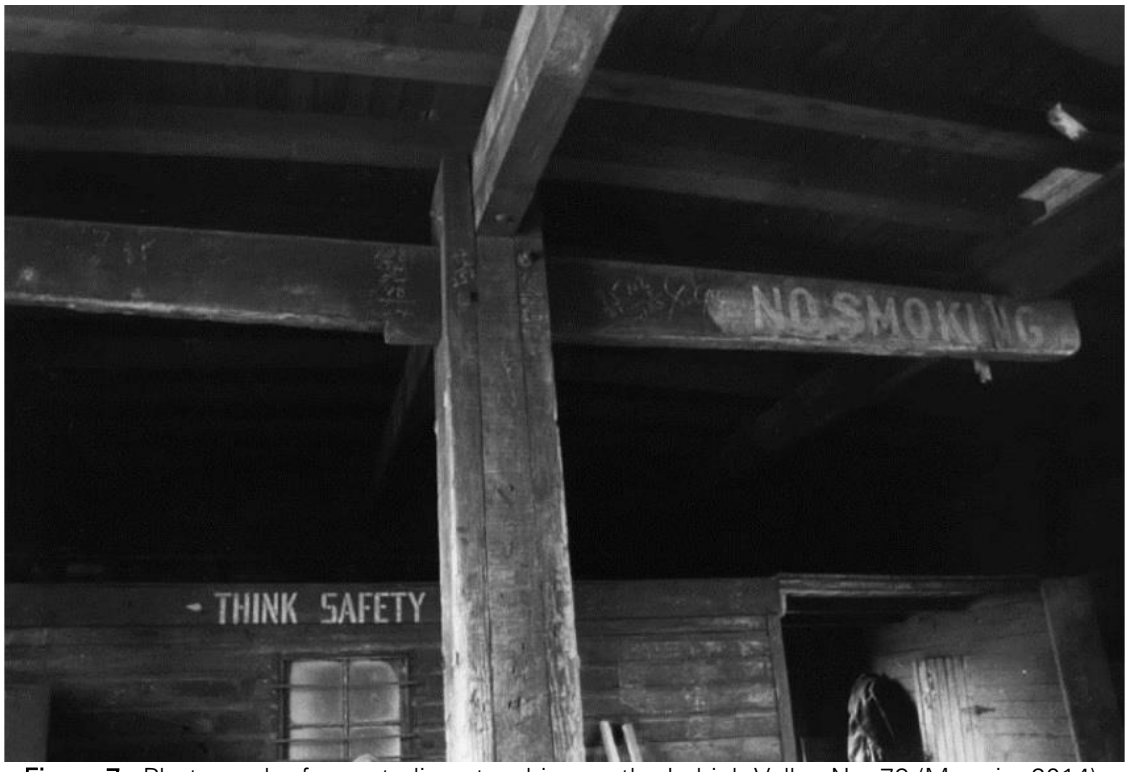



Figure 7 - Photograph of a centerline stanchion on the Lehigh Valley No. 79 (Merwin, 2014).

The wooden wreck in the 6th Street Basin of the Gowanus Canal retains enough of its superstructure to allow for its identification as a covered barge used as part of the lighterage system. A recent photograph of the wreck's superstructure indicates the presence of three vertical stanchions along the vessel's centerline. Two of those stanchions retain sufficient surrounding structure to illustrate that the top of the stanchion supported a centerline deck longitudinal, below which a transverse beam extended to carry the load of port and starboard deck longitudinals (Photograph 2). This structure compares most favorably with the three stanchions found on the Lehigh Valley No. 79 and its plans that show an identical structural arrangement at the top of its stanchion at midships.

Photograph 2 - Recent photograph of the superstructure stanchions of shipwreck Target 37a (French, 2016).

The specific identity of the wooden barge in the 6th Street Basin is not certain. Per the photographs of the barge's superstructure that show weathering patterns on the wood timbers, it is clear that some portion of the structure remains visible above the waterline in all tidal conditions. Aerial photographs of the 6th Street Basin, found as part of this research, are available for 1924, 1951, 1974, 1996, 2004, 2010, and 2012. This wreck is clearly absent in photographs up to and including 1974 (Figure 8). By 1996, this wreck is shown in the aerial photographs (Figure 9).


Figure 8 - 1974 Aerial Photograph showing 6th Street basin (Anonymous, 2011).


Figure 9 - 1996 Aerial Photograph showing 6th Street Basin (City of New York).

Between 1974 and 1996, barge traffic on the Gowanus Canal had decreased considerably from its peak. A review of newspaper databases and online sources revealed only one report of a barge sinking in this area for this time period, and suggests a very high probability that the wooden barge wrecked in the 6th Street Basin is the SPARTAN 357.

The legal case of Spartan Dismantling v. Barges H.R. 54 & H.R. 93, 742 F.2d 1441 (2d Cir. 1983), details the sinking of Barge No. 357, also known as SPARTAN 357, in April 1979 (Leagle,

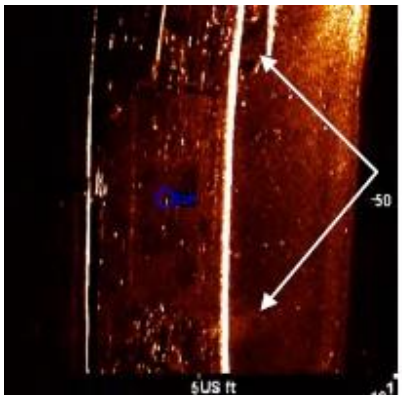
2015). The SPARTAN 357 is described as a motorless wooden barge, roughly 125 feet long and 30 feet wide, built sometime before 1950 and purchased by Charles Christie, President of Spartan Dismantling Corporation, in 1974. The sinking was alleged to have been the result of damage sustained when the tug TWIN and barge H.R. 54 were maneuvering to deliver the H.R. 54 to Ferrar Construction, directly across from Spartan Dismantling Corporation. This puts the location of the 1979 sinking of the SPARTAN 357 in the immediate vicinity of the current wreck in the 6st Street Basin (Figure 10).


Figure 10 - 1996 Aerial Photograph showing locations of Spartan Dismantling Corp and Ferrara Brothers Construction in 1979.

Specific details on the history of SPARTAN 357 prior to 1974 are not readily available. Vessels that worked only within designated limits of New York Harbor did not have to be documented by the federal government (Merwin, 2014). This likely explains why there is no mention of Barge No. 357 or SPARTAN 357 in the U.S. Coast Guard's annual publication *Merchant Vessels of the United States (Including Yachts)* between 1974 and 1979. Similarly, neither Spartan Dismantling Corporation nor Charles Christie are listed as owners of any vessel in that same series of books. This annual publication lists all federally documented merchant vessels operating in the United States, indexed by both vessel name and vessel owner.

*Target 37b*

Per the 2010 side scan sonar survey (Cox), target 37b is a square-ended barge, roughly 126-feet long and 37-feet wide (Figure 11). The barge, located in the northeast corner of the 6th Street basin, is described in the side scan sonar survey report as being made of wood; however, the barge is actually an all-welded steel structure (Photographs 3 & 4).




**37b**

- Sonar Time at Target: 11/12/2010 17:53:59
- Click Position (Lat/Lon Coordinates)
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- Click Position (Projected Coordinates)
  (X) 632910.44 (Y) 671196.13
- Map Proj:
- Acoustic Source File: I:\Sonar Data\Gowanus Canal\20101112\FILE0037.sds
- Ping Number: 57062
- Range to Target: 17.93 US Feet
- Fish Height: 0.00 US Feet
- Event Number: 0
- Line Name: FILE0037

**Dimensions**
Target Height >= 0.0 US Feet
Target Length126.6 US Feet
Target Shadow:0.0 US Feet
Target Width:37.3 US Feet

Description: The hull of a square-ended barge, 126' x 37' is lying on the canal floor in the northeast corner of Cove 2. The wreck of a small fiberglass boat is resting on the deck of this barge

**Figure 11** - Side scan sonar image of Target 37b (Cox, 2010).

**Photograph 3** - Recent photograph of the shipwreck Target 37b (French, 2016).

Photograph 4 - Structural detail of shipwreck Target 37b (French, 2016).

The recent images of this wreck show a square-ended barge of all-welded steel construction. The lack of a superstructure above the barge's deck indicates that this particular barge was most likely a deck scow. These were ubiquitous throughout the Port of New York and New Jersey beginning just after World War II.

No name or identifying markings have thus far been found on Target 37b. Without conclusive evidence as to its name, identification of this steel barge is speculative. Even so, this wreck almost certainly shares the same historic context as the nearby Target 37a in that both barges were part of New York Harbor's lighterage system.

Metal arc welding for marine structures was introduced shortly before 1920. The first all-welded steel barge, *Ac 1320*, was built in England in 1918. In New York Harbor, steel barges built before World War II were typically of the car float variety (Flagg, 2014). Steel was attractive for car floats because of its strength to accommodate the concentrated wheel loads of the rail cars carried. As metal arc welding was an experimental process in 1918, the steel barges produced around New York Harbor during the 1920s relied heavily on riveted construction techniques.

Following World War II, the railroad companies servicing New York City sold off most of their wooden barges and replaced them with steel versions (Flagg, 2014). The General Managers of these railroads had earlier formed the General Managers Association of New York, or GMA. The GMA, under the leadership of Perry Shoemaker, standardized steel deck scow design

(Marine News, 1951). Hundreds of these all-welded steel barges were subsequently produced, many of those by the Bethlehem Steel shipyard on Staten Island (Colton, 2014).

Because of its all-welded steel construction and overall design, Target 37b is almost certainly a post-war deck scow. Furthermore, the general appearance of the wreck is very similar to the GMA's standardized barges built during the early 1950s (Figure 12).

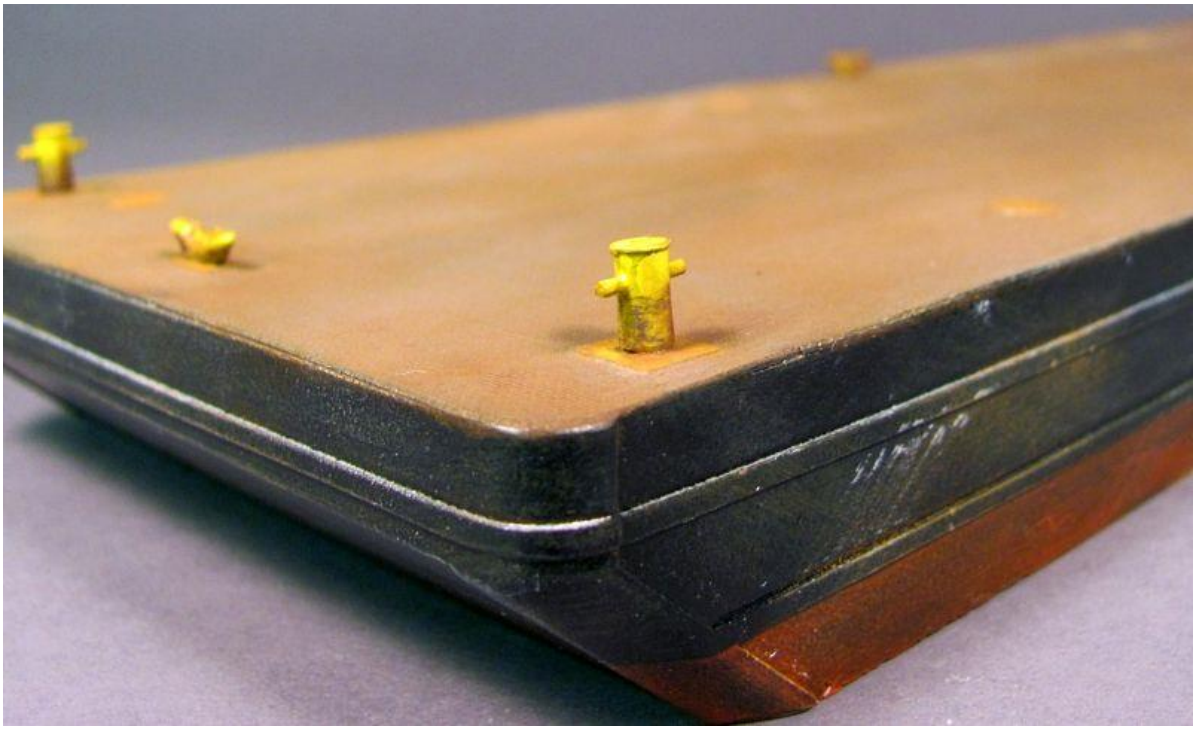


Figure 12 - A model of a 1950s GMA deck scow (Frenchman River Model Works, 2016).

The advanced state of metal corrosion on target 37b suggests that the barge has been at its present site for a number of decades. Target 37b's location in the northeast corner of the 6th Street Basin also suggests that this steel barge was present when Target 37a, presumed to be the SPARTAN 357, sank. The submerged portion of the wreck of the wooden barge in the center of the basin, combined with the relatively shallow water along the dock walls, would make it nearly impossible to navigate a tugboat to pull the steel barge from the basin (Figure 1 & 13). Similarly, the wooden barge wreck and shallow waters would prevent this steel barge from being safely placed in its current position. Unsurprisingly, both targets are shown in their present positions in the 1996 aerial photograph of the basin (Figure 9).


Figure 13 - 6th Street Basin (Bing Maps)

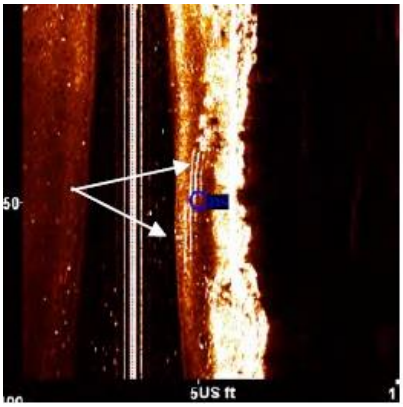
Because of the position of the steel barge relative to the wreck of the wooden barge, it stands to reason that the steel barge was located at its present position when the wooden barge sank. As the wooden barge is most likely the SPARTAN 357, owned by Spartan Dismantling Corporation or its agent Charles Christie when it sank, there is a reasonable likelihood that the nearby steel barge was also owned by Spartan Dismantling Corporation. Regardless of ownership, the steel barge was neglected in place, probably when it became trapped in the 6th Street Basin.

As noted concerning the presumed SPARTAN 357, vessels that worked only within designated limits of New York Harbor did not have to be documented by the federal government (Merwin, 2014). Again this likely explains why there is no mention of Spartan Dismantling Corporation or Mr. Charles Christie as vessel owners in the United States Coast Guard books *Merchant Vessels of the United States (Including Yachts)* between 1974 and 1979.

In 2014 there were no fewer than five 1950s-era GMA steel barges built by Bethlehem Steel's Staten Island yard still in service (Colton, 2014). Owing to their unremarkable utilitarian nature and, in some cases, lack of federal documentation, the number of steel barges similar to target 37b still in service is likely greater than five.

*Target 37c*

Per the 2010 side scan sonar survey (Cox), target 37c is described as two hard rectangular features, each approximately 29-feet long, and located in a pile of rip rap that has fallen away from the bulkhead (Figure 14).




**37c**

- Sonar Time at Target: 11/12/2010 17:53:53
- Click Position (Lat/Lon Coordinates)
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- Click Position (Projected Coordinates)
  (X) 632853.56 (Y) 671141.94
- Map Proj:
- Acoustic Source File: I:\Sonar Data\Gowanus Canal\20101112\FILE0037.sds
- Ping Number: 57004
- Range to Target: 5.00 US Feet
- Fish Height: 0.00 US Feet
- Event Number: 0
- Line Name: FILE0037

**Dimensions**
Target Height >= 0.0 US Feet
Target Length29.7 US Feet
Target Shadow:0.0 US Feet
Target Width:0.0 US Feet

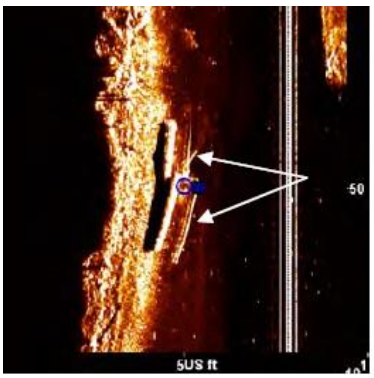
Description: Two hard rectangular features, 29' long are lying on the canal floor next to the ascending starboard side canal bulkhead in Cove 2. These 2 rectangular features are in the middle of a pile of rip rap that has fallen away from the bulkhead.

Figure 14 - Side scan sonar image of Target 37c (Cox, 2010).

These features are not visible from the water surface at low tide, as noted on April 11, 2016, as part of efforts to photograph this and other targets. The only data currently available on these features is that provided by the side scan sonar survey, and any attempt at identification at this point is purely speculative. Given the location of these features in a pile of rip rap, it is tempting to speculate that these are structural components from a failed bulkhead. If that is not the case, these features may be timbers from the nearby wrecked wooden barge, or something else altogether.

*Target 39*

Per the 2010 side scan sonar survey (Cox), target 39 is described as two rectangular objects, one on top of the other. The top object is approximately 22-feet long and 8-feet wide (Figure 15). The objects are not visible from above the water's surface at low tide.




**39**

- Sonar Time at Target: 11/12/2010 17:55:31
- Click Position (Lat/Lon Coordinates)
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- Click Position (Projected Coordinates)
  (X) 632765.25 (Y) 671204.31
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- Acoustic Source File: I:\Sonar Data\Gowanus Canal\20101112\FILE0039.sds
- Ping Number: 57830
- Range to Target: 8.64 US Feet
- Fish Height: 0.00 US Feet
- Event Number: 0
- Line Name: FILE0039

**Dimensions**
Target Height >= 0.0 US Feet
Target Length21.8 US Feet
Target Shadow:0.0 US Feet
Target Width:8.0 US Feet

Description: Two rectangular objects are lying on the canal floor adjacent to the ascending starboard side canal bulkhead in Cove 2. One of the features is partially lying on top of the other feature. The top feature is 21.8' long x 8.0' wide.

Figure 15 - Side scan sonar image of Target 39 (Cox, 2010).

As was the case with target 37c, the only data currently available on these features is that provided by the side scan sonar survey, and any attempt at identification at this point is purely

speculative. The dimensions of the top object appears to match the dimensions of floating work platforms that have been used in the 6th Street Basin (Figures 16 & 17). These objects may be floating work platforms that have sunk, but the particular platform shown in Photograph 5 appears to remain located on the deck of the steel barge. The dimensions of target 39 are also reminiscent of standard TEU (twenty-foot equivalent unit) shipping containers, but the relatively shallow water here suggests that shipping containers are not likely to be associated with these objects.

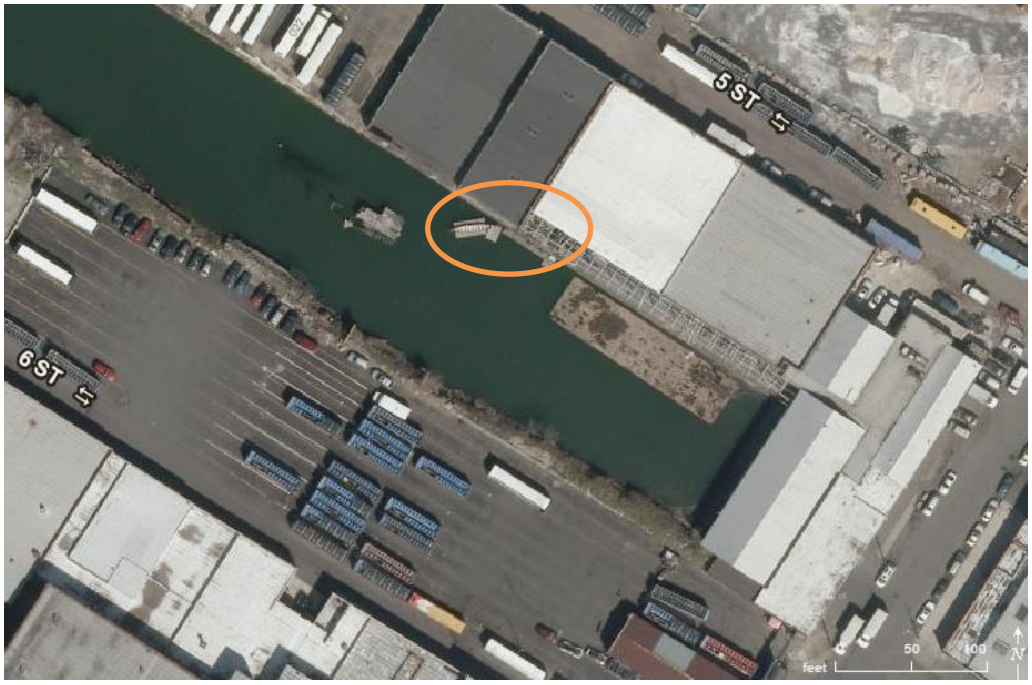


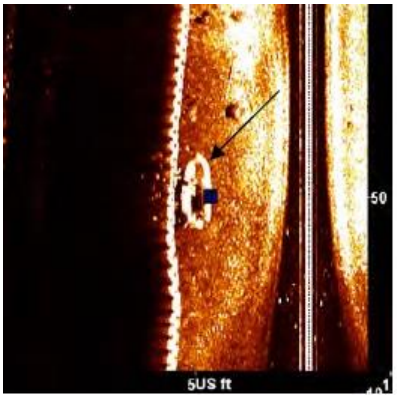

**Figure 16 -** 2012 aerial photograph showing numerous floating work platforms (City of New York)

Figure 17 - One 20' floating work platform in 6th Street Basin (Google Maps)


Photograph 5 - Steel barge target 37b with one floating work platform on deck (French, 2016).

*Target 31*

Per the 2010 side scan sonar survey (Cox), target 31 is the wreck of a small boat, approximately 19-feet long and 8-feet wide (Figure 18). This target was located at the northern end of Turning Basin 4, roughly where the basin meets the canal proper.




**31**

- Sonar Time at Target: 11/12/2010 17:40:44
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- Click Position (Projected Coordinates) (X) 633453.19 (Y) 671371.88
- Map Proj:
- Acoustic Source File: I:\Sonar Data\Gowanus Canal\20101112\FILE0031a.sds
- Ping Number: 48477
- Range to Target: 8.81 US Feet
- Fish Height: 0.00 US Feet
- Event Number: 0
- Line Name: FILE0031a

**Dimensions**
Target Height >= 0.0 US Feet
Target Length18.9 US Feet
Target Shadow:0.0 US Feet
Target Width:8.1 US Feet

Description: A small boat wreck, 19' x 8', lies on the canal floor adjacent to the ascending port side canal bulkhead in Cove 1. Misc. debris is located on the canal floor near the wreck.

**Figure 18 -** Side scan sonar image of Target 31 (Cox, 2010)

No evidence of this small boat is visible above the water's surface at this location at low tide. There is, however, a small motor boat near the site of target 31c (Photograph 6, 7 & 8).

**Photograph 6 -** Overhead view of small motor boat at site of target 31c (French, 2016).

Photograph 7 - Small motor boat at site of target 31c (French, 2016).

Photograph 8 - Another view of the small motor boat at site of target 31c (French, 2016).

Target 31c had been identified as most likely being debris (Cox, 2010). This suggests that there are either two small boats, one at target 31 and one at target 31c, or the small boat at target 31 has since moved to a position in way of target 31c. In either case, the United States Army Corp of Engineers suspended regular maintenance dredging of the Gowanus Canal in 1955 (CH2M Hill, 2011). Although research done to date has not yielded details as to when specific portions of the canal were dredged, it seems likely that submerged boats at the location of targets 31 and 31c would not have remained submerged at these locations when dredging was last completed. Because of the history of regular maintenance dredging, any submerged small boats in the canal at this general location likely sank after World War II.

The small motor boat located in way of target 31c is made of metal, most likely aluminum, and the top of an outboard gasoline motor is clearly visible on the transom. Production of aluminum motor boats became fairly common in the 1950s. The general shape of the hull, with its flat transom, is typical of small motor boat forms prevalent in the second half of the 20th century to the present time.

*Target 31b*

Per the 2010 side scan sonar survey (Cox), target 31b is a hard rectangular feature, roughly 24.5-feet long and 6-feet wide, with several feet of relief off the canal floor (Figure 19).

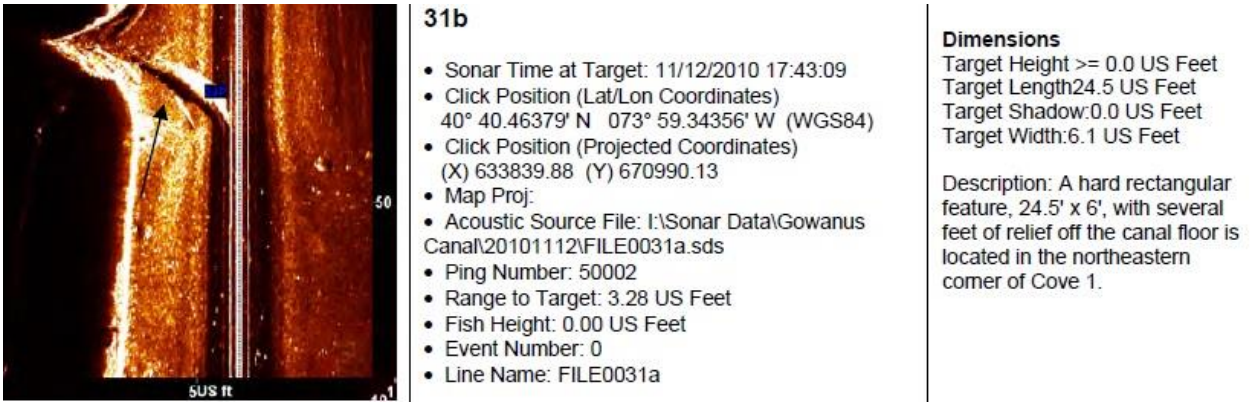


Figure 19 - Side scan sonar image of Target 31b (Cox, 2010).

Photographs taken of the area at low tide show some rectangular features associated with the collapsed bulkhead at the Third Avenue northern bridge pier that may be responsible for this sonar target (Photograph 9, 10 & 11). These features show some measure of relief off the canal floor as described in the side scan sonar survey. No other features were visible above the water's surface that could be identified as possibly being associated with this sonar target.

**Photograph 9 -** Area of target 31b viewed from Whole Foods boardwalk, facing south (French, 2016).

**Photograph 10 -** Area of target 31b viewed from Third Avenue bridge, facing north (French, 2016).

**Photograph 11 -** Area of target 31b facing southeast (French, 2016).

## 4.0 CONCLUSION

Research done to date for targets 37a, 37b, 37c, and 39 located in the 6th Street Basin, and targets 31 and 31b, located in Turning Basin 4, has not resulted in an absolutely irrefutable identification for any of the features, but some features have been identified with a very high degree of probability. Enough information exists to make a determination as to the historical value of the barges in the 6th Street Basin (targets 37a and 37b) as well as targets 31 and 31b. Furthermore, additional information has been obtained on the other features that will likely prove helpful in creating plans for the environmental remediation of Gowanus Canal.

*Target 37a*

Despite the lack of complete documentation for the history of the wreck of the wooden covered barge in the 6th Street Basin, there is a very high degree of probability that this barge sank in 1979 under the name SPARTAN 357. The remaining structure matches that typical of a covered barge of wooden construction. The barge's dimensions compare favorably to other barges built in the 1920s. These barges were once ubiquitous throughout New York Harbor during the lighterage age. The early history of the SPARTAN 357 is uncertain, but given its size and longevity this particular barge was likely built in the 1920s.

The wreck of the wooden covered barge does not retain sufficient integrity to allow for a meaningful association with its historic use. Furthermore, the barge's current setting

underwater does not lend itself to an appropriate association with its historic use. This loss of integrity with regards to its current design and feeling, as well as its inappropriate underwater setting, make the barge ineligible for listing in the National Register of Historic Places as an example of a wooden covered barge from the area's lighterage age. Similar covered barges, although rare, are still in existence. The NRHP-listed Lehigh Valley No. 79 is maintained as a museum, and abandoned covered barges, some likely in a better state of preservation than the one in the 6th Street basin, can still be found in nearby ship graveyards. The availability of comparable covered barges and their associated documentation suggests that the archaeological value of this particular wreck is negligible. The lack of archaeological value, combined with the barge's relatively recent period of time as a shipwreck, makes Target 37a ineligible for listing in the National Register of Historic Places as a shipwreck.

*Target 37b*

Despite the lack of complete documentation for the history of the wreck of the steel deck scow in the 6th Street Basin, there is a very high degree of probability that this barge was effectively abandoned at this location in 1979 when the presumed SPARTAN 357 sank. The remaining structure matches that typical of a post-war, steel barge of all-welded construction. The barge's general design compares favorably to other barges built for New York's lighterage system during the 1950s. These barges were built in substantial numbers to replace the earlier wooden barges common throughout New York Harbor during the lighterage age.

The wreck of the steel barge does not retain sufficient integrity to allow for a meaningful association with its historic use. Furthermore, the barge's current setting, partially underwater, does not lend itself to an appropriate association with its historic use. This loss of integrity with regards to its current design and feeling, as well as its inappropriate underwater setting, make the barge ineligible for listing in the National Register of Historic Places as an example of a steel barge from the area's lighterage age. Similar steel barges are still in service. The availability of comparable steel barges and their associated documentation suggests that the archaeological value of this particular wreck is negligible. The lack of archaeological value, combined with the barge's relatively recent period of time as a shipwreck, makes Target 37b ineligible for listing in the National Register of Historic Places as a shipwreck.

*Target 37c*

Target 37c has not been conclusively identified. These submerged features may be structural components from a failed bulkhead or timbers from the nearby wrecked wooden barge, neither of which would be eligible for listing in the National Register of Historic Places. However, target 37c may be something else altogether. Only direct study of the features themselves is likely to yield any further information as to their nature and origin. Therefore, level 2 archaeological monitoring will be conducted while this target is being removed.

*Target 39*

A number of floating work platforms of various sizes have been observed in the 6th Street Basin in recent years. Only one of those floating platforms appears to remain in the basin. Target 39 could be the sunken remains of some of those once-floating platforms, but no conclusive

determination can be possible without direct study of the features themselves. Floating work platforms of such recent vintage would not be eligible for listing in the National Register of Historic Places. Therefore, level 2 archaeological monitoring will be conducted while this target is being removed.

*Target 31*

Nothing related to the wreck of a small boat identified as Target 31 could be found at low tide at this location. The wreck of a small, metal motor boat was found at the location of target 31c. Given the history of maintenance dredging of the canal, any small boat wreck would most likely have sunk sometime after World War II. The wrecked metal motor boat found at target 31c appears to be a typical example of a boat with an outboard motor built in the second half of the 20th century. Thousands of similar boats remain in use today. There is nothing about the wreck of the metal motor boat that suggests any possibility of eligibility for listing in the National Register of Historic Places. The wreck lacks integrity as a boat. The wreck itself is possibly too recent to allow National Register designation. The vast numbers of similar boats in active use stand as testaments to the lack of any archaeological value associated with this wreck.

*Target 31b*

A visit to the site of target 31b at low tide suggests that this feature is related to a collapsed bulkhead around the Third Avenue northern bridge pier. No other features matching the description of the side scan sonar survey report are visible above the shallow water's surface in this area. Pieces of collapsed bulkhead structure are not eligible for listing in the National Register of Historic Places. Failed bulkhead structure lacks integrity as a functioning bulkhead. The existing material is likely unsuitable for reconstruction of a bulkhead, otherwise the bulkhead should not have collapsed in the first place. Level 2 archaeological monitoring is recommended while this target is being removed to confirm t is part of the collapsed bulkhead.

Based on the above information targets 37a, 37b, and 31 do not appear to meet the criteria for listing in the National Register of Historic Places and are, therefore, not eligible for the National Register of Historic Places. Targets 37c and 39 were not conclusively identified and target 31b should be confirmed. However, the only way to confirm or refute this is by direct study of the features themselves to yield any further information as to their nature and origin of the target. Therefore, level 2 archaeological monitoring should be conducted during the removal of targets 37c, 39 and 31b to attempt to positively identify these targets. Once identified these targets will be assessed for their eligibility for the National Register of Historic Places.

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