

**ROBERT PORTNER BREWERY
(44AX0196)**



The Portner brewery, early 1880s. (Brockett & Rock 1883)

INTRODUCTION

In the Fall of 1998 and Winter of 1999-2000, Parsons Engineering Science (Parsons ES) conducted Phase I and II archaeological investigations at the Portner's Brewery Site, located in the parking area at the rear of 600 North Washington Street in Alexandria, Virginia. The property was bounded by Wythe Street on the north, Pendleton Street on the south, St. Asaph Street on the east, and Washington Street on the west. The Portner's Brewery Site existed on this property during the mid-nineteenth and into the twentieth centuries. This study was conducted in compliance with the City of Alexandria Archaeological Standards, May 1990, *Guidelines for Preparing*

Archaeological Resource Management Reports, and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. All work was carried out in consultation with and overseen by the staff of Alexandria Archaeology.

As part of the project, Timothy Dennée, a recognized local expert on brewing and breweries, conducted documentary research on both Portner's Brewery and the brewing process in general. Mr. Dennée's report comprises a separate document entitled *Robert Portner and His Brewery*. The interpretation of the features discovered at the Portner's Brewery site was based upon the findings of Mr. Dennée's research.

HISTORY

The Brewing Industry in Alexandria.

The origins of brewing in Alexandria date as early as the 1730s when area plantations produced beer for their own use. By 1771, Andrew Wales established a commercial brewery in a leased public warehouse on Point Lumley at the foot of Duke Street. The Wales brewery, despite undergoing several changes of ownership during the 1790s, continued to produce "Strong and Small Beer," perhaps as late as 1809. By that time, two other breweries also opened: the Potowmack Brewery at the foot of Oronoco Street, and the Union Brewery at the southwest corner of Union and Wolfe Streets. These companies closed in 1807 and 1821, respectively.

Success for early American brewers was difficult since they not only competed with British imports, but with a multitude of other fermented and distilled beverages available such as wine and cider. Hard spirits, especially rum and whiskey, remained more popular than beer until the mid-nineteenth century. Brewery proprietorships were often short-lived as turnovers and advertisements offering to rent or sell breweries were common occurrences during the Federal period.

For most of the 1820s, no beer was commercially produced in Alexandria. About 1831, however, brothers James and William Henry Irwin established an ale brewery on the waterfront at the foot of Wolfe Street, across from the former Union/Entwisle brewery. Their business grew quickly and, at an eventual 3,000 barrels annual production (one barrel equals 31 gallons) and a regional market area of about 1,000 square miles, it perhaps became the largest brewery in the

South. The Irwin brewery also exported ale to the West Indies. Although there were already larger breweries in America, by the standards of the day this was indeed a large operation. Unfortunately, the Irwin plant was lost to fire in 1854.

Only a few years elapsed before new establishments took the place of the Irwin brewery. Henry S. Martin opened a small ale brewery at the corner of Commerce and Fayette Streets in 1856. And in 1858, two Germans, Alexander Strausz and John Klein, leased an old frame building on Duke Street in the "suburb" of West End, and commenced the construction of a brick-vaulted beer cellar. The Shooter's Hill Brewery (later known variously as Shuter's Hill, Klein's, Englehardt's or the West End Brewery) was the first to introduce the brewing of lager beer to Alexandria and to the state of Virginia. Compared to the ales and porters popular until after the Civil War, lager beer required a different type of yeast and colder temperatures for fermentation and aging.

The Civil War was a time of rapid, but temporary, expansion in the local brewing industry. The presence of Union troops created an unprecedented demand for alcoholic beverages of all types, despite the prohibition of the sale of liquor and beer within the city limits. The two existing breweries increased production and capacity accordingly. A third brewery, Portner & Company, was established in 1862 by a partnership of four men who had arrived during the Union occupation hoping to prosper from wartime demand for provisions. In fact, between September 1862 and October 1865, these three breweries produced and sold nearly 9,000 barrels of lager beer and ale.

The collapse in demand following the war ruined or threatened all of the brewing firms. By the mid-1870s, several breweries were no longer in operation and others were in substantial debt. The former Shooter's Hill Brewery, now under the proprietorship of Henry Englehardt, a former employee of John Klein, continued its operations, though at considerably decreased levels. Portner & Company dissolved, and Robert Portner, now sole owner, purchased a new site on North St. Asaph Street and constructed a large modern brewery and cellars.

The Robert Portner Brewery. Robert Portner purchased the north half of the 600 block of between Washington Street and St. Asaph Streets and between Pendleton and Wythe Streets in 1865. He constructed lager cellars containing 36 large fermenting casks. In 1868, Portner began construction on a new brewery along St. Asaph Street.

The roughly 60-foot by 160-foot brewery was built along the west side of what is now the 600 block of North St. Asaph Street. It was constructed of load-bearing brick arches and walls reaching thicknesses of two-and-a-half feet. It was clearly of the Victorian era, designed in the Gothic Italianate style, popular among brewers of the period. Near the center, however, rose a tower more than 56 feet high capped by a Second Empire mansard roof and apparently constructed for aesthetic reasons. The plant was divided into six sections, three- to five stories tall, running north and south along the northern half of the block. Brewing was conducted in the southernmost section, a four-story structure surmounted by a cupola and louvered window openings for cooling and ventilation. The third story contained hoppers or storage bins for

barley malt. The malt was elevated there by mechanical hoists, readied to drop through chutes into the mash tuns on the floor below. The second floor, the center of brewing activity, contained probably two copper brew kettles and at least one mash tun. The first floor housed the wash room. Immediately behind the brewhouse was an attached structure containing an eight-horsepower steam engine and boiler, ventilated by a smokestack. The next section to the north held the coolers used to reduce the temperature of the freshly brewed wort. Because the coolers were located on the third floor, the wort had to be pumped upward from the brew kettles. The rest of the floor area was devoted to malt storage. The next section, surmounted by the central tower, also contained hops and malt storage on at least the third floor. The brewery clearly possessed room for expansion, and probably housed some of the functions, like cooperage or bottling, which were later spun off into subsidiary buildings.

One of the first enlargements to the Portner Brewery facilities was the construction of an ice house, partly complete in the spring of 1871. By the late 1870s, in addition to the main brewery buildings and the ice house, Portner had constructed at least one stable and as many as four other accessory structures, likely including a cooper's shop. In 1885, new additions at the rear of the brewhouse reflected technological advancement and the increase in production. Two one-story structures contained a 150-horsepower steam engine and its boilers. The "engines," or compressors, that cooled the wort after brewing, kept the vaults cold and possibly manufactured ice. A large smokestack vented coal smoke from the boilers' fireboxes. In 1886,

electric lighting was beginning to replace the gas jets, oil lamps, and candles which illuminated the work space and beer vaults.

In 1891, the plant showed still more changes including a new pump house and wells, relocation of the cooper shop; new bottle and keg storage sheds; and a new, 50-foot smokestack. The steam power had been increased to a total of 225 horsepower contained in a larger addition.

In the spring of 1893, a new three story brewhouse, measuring 40 by 60 feet was constructed adjoining the old brewhouse on the south. The new brewhouse was 54 feet high from the street level to the top of main cornice, and a total height to apex of ventilator over lantern of main roof of 80 feet. The new brewhouse was built of brick, stone, steel and iron, with lumber only being used for windows, doors, the purlins and top layers of roofs. The entire interior framing for floors, platforms, galleries and other supports, as well as the main roof were constructed of steel. The floors were filled between beams with concrete arches. The roof was covered with slate and all guttering was copper. The floors were accessed by iron staircases as well as an elevator.

By 1907, extensive additions to the brewery occurred west and south of the earlier configuration, including a condenser, ice machines and air conditioners. The air conditioners were located in a large concrete floored structure. The boiler room was extended westward with a brick floor. Additional structures, including a pump room, office, storage, and pipe shop, were constructed behind the brewery. A large 120,000 gallon water tank and associated water

tower occur north of the pipe shop. A 50 foot square structure identified as a Brew House was situated to the south, along N. St. Asaph, in addition to several small ancillary buildings including a meal room and grain dryer.

Portner's Brewery curtailed operations in 1916 because of Prohibition but entered new fields; the company was rechartered as The Robert Portner Corporation. The main brewery buildings were likely used for storage for the Portner's Virginia Feed and Milling Corporation, given that they still contained huge grain bins. The brewery buildings were vacant by 1921. The buildings behind the brewery structure were razed in 1932 by order of the fire chief. In 1935, the management of the Corporation decided to demolish the main brewery buildings. Two years later, the Robert Portner Corporation was dissolved.

ARCHAEOLOGY

The first controlled excavation of any part of the Robert Portner Brewery site occurred in 1994. City archaeologists monitored the demolition of the rear of the 1901 ice plant and the excavation behind it along Pitt Street in preparation for a mixed-use office/residential development. Little was discovered except for brick rubble, a few bottle sherds, and clumps of purple-stained refuse and clay, presumably from the 1907 ink factory across Wythe Street. Similarly, backhoe excavation of the rear (east side) of the 1912 bottling house during the winter of 1997-1998, prior to the construction of "Portner's Landing," produced no evidence of the brewery's large, ca. 1898 stable.

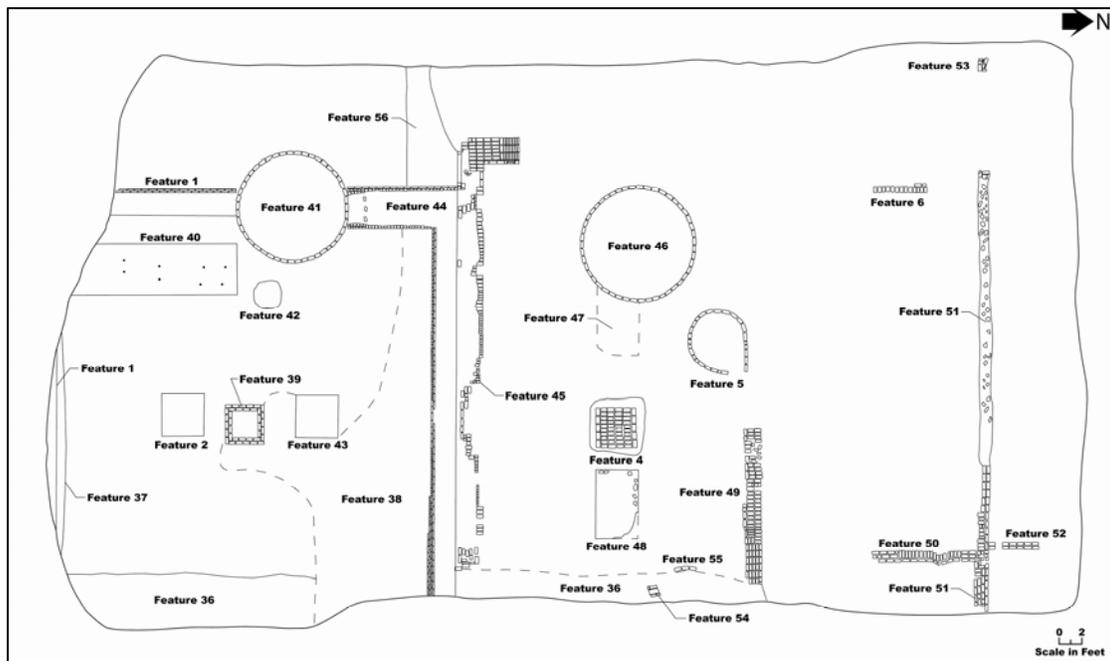
Parsons ES conducted Phase I archaeological investigations in October

and November 1998. The purpose of these studies was to determine if archaeological resources remained intact beneath the parking lots. After the analysis of historic maps of the project area, 11 trenches were excavated using a backhoe monitored by an archaeologist. These trenches were placed on the property where they could best intercept potential archaeological resources. Archaeological testing revealed the presence of 15 architectural features related to the use of the property as a brewery, including: the beer vault, where lager beer was produced; walls from several associated structures; and two deep features (wells or privies) that would have provided and stored water for use in the beer making process.

A Phase II archaeological study on the property in December 1999 and January 2000 utilized a backhoe to remove the asphalt parking surface and overburden from above intact archaeological resources. Forty-one additional features

were identified and recorded in areas representing the 1868 brewhouse, the 1894 brewhouse and the north beer vault.

Features. The structural features encountered were divided into six categories: bearing wall foundations; partition or platform footings; column bases or footings; equipment mounts; flooring; and water source or storage features. Sixteen brick wall/ foundations or wall fragments were identified during these investigations and represent both exterior and interior walls from various construction episodes at the Robert Portner Brewery. Exterior walls associated with the beer vaults (Feature 14), the Ice/Engine room (Feature 13), and the 1868 brewhouse (Feature 45), and interior walls separating the beer vaults and brewhouse (Features 6, 9, 49, 50 and 51) represent the 1885 brewery configuration.



Archaeological Features in the Southern Portion of the Project Area

Additional brick foundations associated with the construction of the new brewhouse in 1894 consisted of exterior walls (Feature 1) and new interior walls (Feature 44) which were slightly skewed from the original wall (Feature 45). A later construction period (pre-1907) is represented by the east wall of the Grain Dryer building (Feature 3).

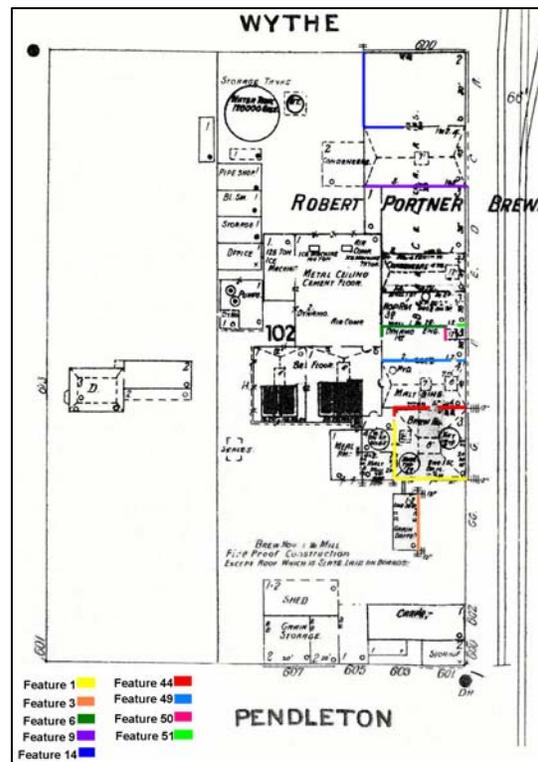
Artifacts. Individual artifacts related to brewing or associated with the Robert Portner Brewing Company were absent. Only a few possibly brewery-related metal objects were observed, including a large iron strap hinge, a wall or beam anchor, some steel and copper pipe, some type of reciprocating machine part, and a wooden box conduit containing seven insulated wires associated with the plant's electrical system.

SUMMARY

The Brewhouses. The massive foundations of the two (1868 and 1894) brewhouses were found approximately 4 feet below the current grade, confirming the size and location of the structures as depicted on Sanborn insurance maps. Constructed of load-bearing brick masonry, the foundations were as much as 4.5 feet wide. Possible footings or pads for structural support or equipment platforms were located in both brewhouse footprints.

The new brewhouse (1894) contained two dressed granite slabs (a non-native stone), generally about 18 inches tall and usually at least 4 feet square, that served as pedestals or mounts for equipment or steel posts. The documentary evidence provides the basis for reasonable guesses as to the function of the stone blocks in the new brewhouse. The granite may

have supported the cast iron framework that held up the interior platforms and stairs; *or* the hop jack, which added hops to the wort for flavoring, then strained them out; *or* the receiving tank for the brew on its way to the coolers. But perhaps the most likely alternative, however, was that the stones served as the base for the brewhouse freight elevator, depicted on the 1902, 1907, and 1912 Sanborn maps as being in roughly the same location.



1907 Sanborn Map with Features

The other notable features of the southern end of the brewery were water source or water storage structures. Two brick shafts were discovered within the old brewhouse (1868), not far from the south wall. The larger measured approximately 11 feet in diameter and only 7 feet deep from the elevation at which it was discovered (Feature 46).

The other shaft was approximately 70 inches in diameter, although its upper section was distorted and irregular in shape (Feature 5). On its interior were remnants of parging, a coating of mortar used as a water barrier, in this case, to keep water in. The shallowness of the wider shaft also suggests that these were cisterns for water storage rather than wells for drawing ground water. Feature 5 matched the approximate location of a circle labeled “pump over 2 driven wells” in the washroom on the 1885 Sanborn map.

At the rear of the 1894 brewhouse, interrupting its rear wall, was a third brick shaft, 10 feet in diameter, at least 20 feet deep, and showing no evidence of parging (Feature 41). Its location attests to the fact that it was excavated prior to construction of the 1894 brewhouse, although possibly just before. It actually corresponds to the location of the brewery’s ca. 1885 pump house, which was torn down before 1891 and contained “four driven wells”. Since the builders of the 1894 brewhouse did not run the walls around this shaft or fill it in, this strongly suggests it was being used at the time.

In 1869, Portner probably drew his water from surface wells and possibly, the city water supply. By the mid-1880s, however, deep wells were being driven far below the water table. Some of the earlier water features may have remained either filled in or re-used for other purposes. By 1912, the brewery had at least 10 dug or driven wells, plus a number of other unidentified subterranean receptacles (not to mention large above-ground and rooftop tanks).

The Beer Vault. Two brick foundation features (Features 11 and 12) were identified in the beer vault area which do not correspond to any interior beer vault walls as indicated on the Sanborn Insurance maps. Both features were substantial brick walls with concrete surfaces; Feature 11 occurred within the second beer vault and Feature 12 was located adjacent to the interior wall inside the third beer vault. Two distinct construction episodes were recorded for the west wall of the north beer vault (Feature 14) with the exterior portion representing the original construction and an inner wall characterizing a later stage of construction. These features indicate structural changes to the beer vault configuration. It is possible that Features 11 and 12 could be associated with the original beer vault configuration constructed by Portner in 1865-1867 and the original west wall (Feature 14) of the north beer vault also represents that time frame.

The perfectly preserved floor of the beer cellar (Feature 33) was uncovered at the southwest corner of St. Asaph and Wythe Streets. The northernmost section of the plant, which measured nearly 40 by 50 feet, would have been the location for the fermentation and aging of much of the beer produced by the brewery, especially prior to 1880. The concrete floor was bisected by a gutter (Feature 20) running west to east and dropping about a foot over its course. The gutter obviously served to drain off ice melt, wash water, and spilled beer.

The most remarkable aspect of the cellar was the marks left in the floor. Apparently, substantial weights on the not entirely cured concrete surface left a

permanent series of shallow, rectangular depressions in regular rows. Each was perhaps 4.5 feet long by 12 inches wide and at 4 to 5-foot intervals from other similar and parallel depressions. Oriented east-west, these depressions appear to have been left by the timber stillions or stands that once supported large aging casks. Given the arrangement of the depressions that were actually exposed, it appears that there were once four parallel rows of casks in the cellar, each row containing 6 or 7 casks, for a total of 24 to 28 casks. Portner's mid-1860s deeds of trust state that he then had 36 large casks in his cellar.