

**SITE 44AX0215: BELLE PRE BOTTLE COMPANY
800 N. HENRY STREET (MADISON),
CITY OF ALEXANDRIA, VIRGINIA**

**A DOCUMENTARY STUDY AND
ARCHEOLOGICAL EVALUATION**

Report Summary by John Mullen

INTRODUCTION

Documentary research and archeological investigations of the 800 block of N. Henry Street were required under the Archeology Protection Code, located within the City of Alexandria Zoning Ordinance. The Documentary Study for the property was completed in 2007 (Flahive and Sipe). The archeological investigation was conducted between October 2011 and February 2012 by Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc.

The city block bounded by Madison, North Fayette, Montgomery, and North Henry Streets was formerly the location of the Belle Pre Bottle Company, which was in operation between 1902 and 1921. One new archeological site (44AX0215) was recorded with the Virginia Department of Historic Resources as a result of the archeological work. The designation as 44AX215 represents this site as the 215th archeological site (0215) recorded in the City of Alexandria (AX) in the Commonwealth of Virginia (44).

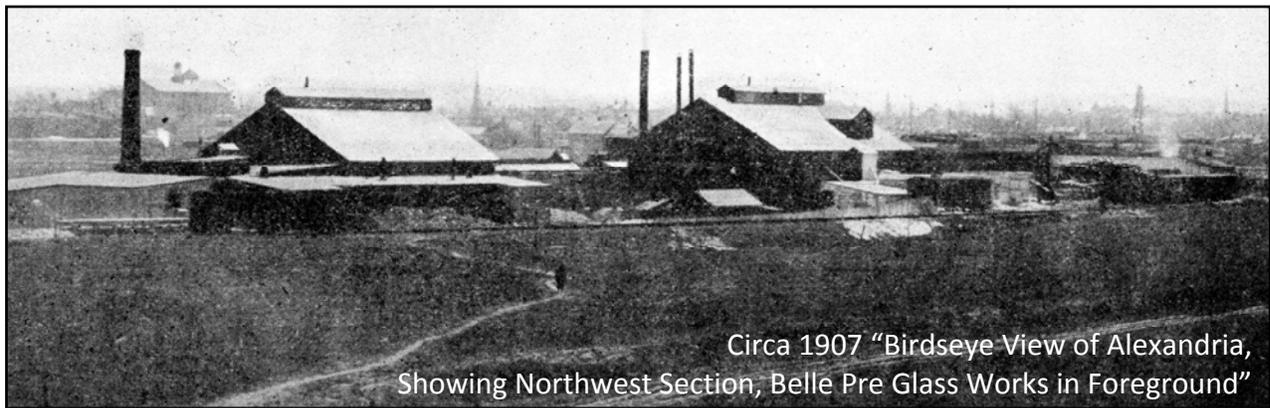
The archeological work consisted primarily of archeological monitoring of footer/foundation demolition of the 1955 warehouse, and periodic monitoring of contaminated soil abatement from the site. All fieldwork was conducted in consultation with Alexandria Archaeology.

EARLY PROPERTY HISTORY

Captain Richard Conway was one of several wealthy land holders who owned various tracts of land on the outskirts of Alexandria in the late 18th century, including the study area. Conway was both an army captain during the Revolution and the captain of a merchant vessel, the "Friendship." He served as mayor of Alexandria in 1783. Upon his death around the turn of the 19th century, Captain Richard Conway's estate was surveyed, and his executors later sold off several parcels of land to interested parties.

A 28-acre parcel, which included a large portion of the study area, was sold to John Gadsby, who was already established as the reputable proprietor of Gadsby's Tavern between 1796 and 1808. Gadsby purchased the 28 acres of land on the west end of Alexandria from Captain Richard Conway's executors around the time he relocated to Baltimore in 1808. Most likely, the purchase of the land was speculative, as he subdivided and sold the property to others within one month of acquiring the land. No leases in deed books to or from Gadsby have been located at this time.

The 28 acre purchase was subdivided into four separate parcels by Gadsby when he sold all of his holdings in Alexandria. The study area was included in three of those parcels. The land changed hands between various real estate speculators throughout the 19th century. Finally, in June of 1902, the heirs of both Charles C. Smoot and John B. Smoot (who served as mayor of Alexandria from 1885 until 1887) conveyed the entire city block (the study area) to the Belle Pre Bottle Company of Washington, D.C., a corporation organized under the laws of the State of Delaware.

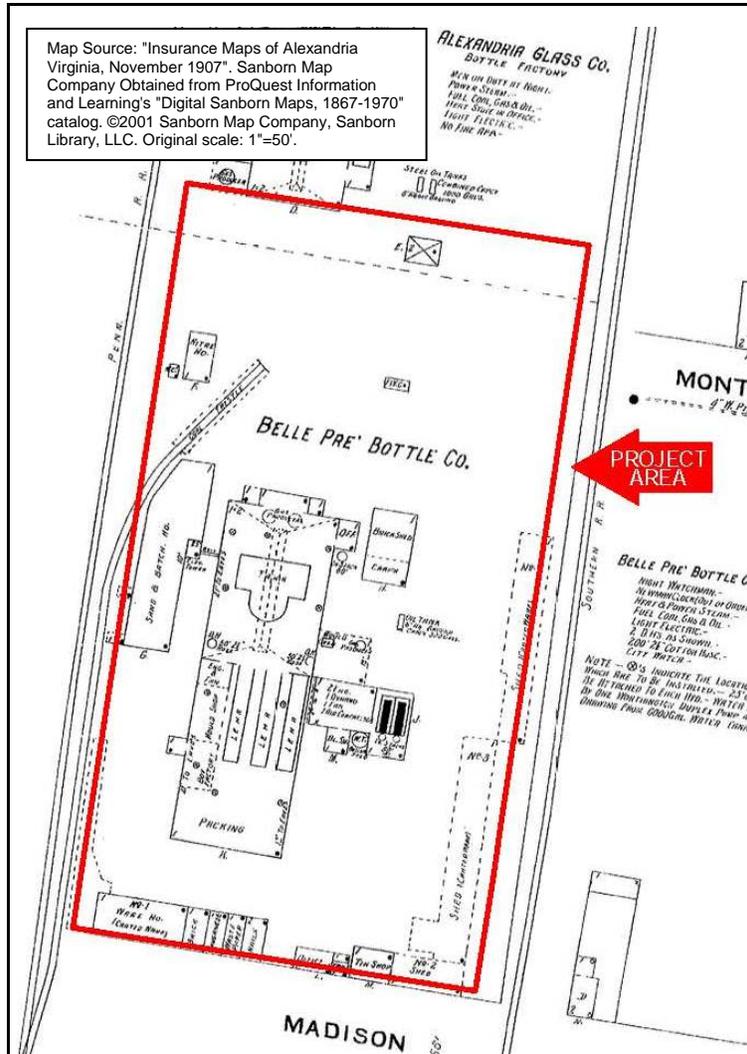


BELLE PRE BOTTLE COMPANY

The Belle Pre Bottle Company, Alexandria's third glassworks, was founded in 1902 and was in operation until 1921. According to glass factory directories, the Belle Pre originally produced green beer bottles, soda bottles, and packers' bottles but by 1906, had switched to producing milk bottles. The Belle Pre Company held a patent that stylistically improved on the capseat finish for milk bottles: a grooved section in the mouth of the bottle and a paper cap with an innovative extension or tab that fit into this groove and would serve as a handle. This innovation allowed for the bottle to be easily resealed.

William B. Smoot, a local businessman "provided liberal inducements" to the board of directors to convince them to locate the glassworks in Alexandria. According to an article in the Alexandria Gazette, the directors purchased from Smoot (and others) two squares of ground (4 acres) between the Washington Southern tracks on Henry Street from Madison Street north to First Street.

The plant opened on October 30, 1902, with the first anticipated production on the following day. The Alexandria Gazette also reported that John D. Miller, the patentee of the signature Belle Pre milk bottle, was hired to “look after the financial end of the business”.



1907 Sanborn© Map Showing the Belle Pre Bottle Company

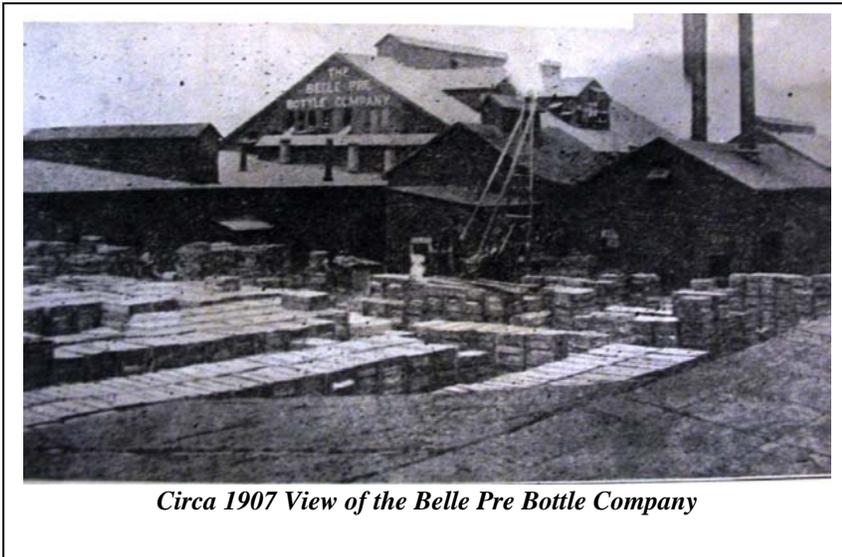
Early photographs and Sanborn® Map Company Insurance Maps provide details of the spatial layout of the glass factory. The November 1907 Sanborn® Map of Alexandria, Virginia, shows the Belle Pre Bottle Company factory and various ancillary buildings located between Henry Street and the Southern Railroad to the east and Fayette Street and the Pennsylvania Railroad to the west. Details of the interior of the main factory building include the continuous tank and two gas producers in the northern end (underneath a roof that soared 21 feet above the floor),

three lehr ovens in the southern half of the main building, a mould shop and engine room to the west of the lehrs (also covered by a 21 foot high roof) and the plant's packing room and box factory in the southern end beneath a one-story roof that measured 12 feet to the eaves.

A larger engine room housing two engines, a dynamo, a fan, and an air compressor, and the boiler room with two horizontal steam boilers, were located to the east of the lehr ovens. The one-story roof of the boiler room was pierced by two 50-foot high iron smokestacks. A small blacksmith shop and a water tank (feeding the boilers) were located adjacent to the south of the engine room. A side note to the map describes a 6,000 gallon water tank that was to supply the water for the new hydrants to be installed. A third gas producer and mould oven, an office, and a 60 foot iron stack stood are shown north of the engine room.

Three photographs included in a 1907 book celebrating the tercentennial of Alexandria show the factory from several vantages (Wedderburn 1907). One of the photographs (see Page 2) shows a lone figure walking up a dirt path toward the Alexandria Glass Company and the Belle Pre Bottle Company, with the city skyline in the distance, including the Mt. Vernon Cotton Mill building (located on Washington and Pendleton Streets). The second photograph shows the main building of the factory from the east, behind two outbuildings that were located on the lot across the street. The main dwelling of this lot is described on the 1907 Sanborn©

map as a two-story dwelling with a metal roof.



Circa 1907 View of the Belle Pre Bottle Company

Based on the perspective, the third photograph (shown to the left) may have been taken from the upper story of a house across the street from the factory, and shows the "crated ware" stacked in the southwestern yard of the factory. What is intriguing is that the photograph also shows what appears to be a rig

and scaffolding in front of the engine room/blacksmith shop, captured in the process of drilling a well. The Belle Pre Company was known to have drilled a well on the property in 1907 to supply water for the boilers and for other uses in the factory (Sanford 1913: 139).

ARCHEOLOGICAL INVESTIGATIONS

At least twenty architectural features from the Belle Pre Bottle Company were documented during the demolition and abatement at site 44AX0215. Most of the features were only documented with photographs and notes, as it was not considered safe for the archeologists to work in contaminated areas. Architectural features included foundation walls and floors in the vicinity of the main furnace and lehr



ovens, structural piers, remnants of the ventilation system and the foundation for a gas producer. In addition, several post holes, brick/concrete piers, soil features and the foundation for the vault were found in the vicinity of the Belle Pre Company office.

The remains of two arched brick flues were identified and mapped within the central portion

of the site. One flue was oriented north-south and appeared to terminate in the vicinity of one of the chimney stacks. The southern end of flue angled toward the location of the one of the three Belle Pre Bottle Company gas producers. This feature probably served as an air intake or exhaust flue. The second brick flue also originated within the vicinity of the gas producer, but turned westward toward the lehr ovens and furnace area. It is possible that this flue was carrying producer gas toward the furnace area.

Only one foundation of the factory's three gas producers was located to the east of the lehr ovens and main furnace. Structurally, gas producers were iron tanks lined with refractory bricks, which were connected to the furnace ventilation system (Pfanstiehl et. al 1999:8-10). Located in the approximate location of this third gas producer, this feature consisted of a 15.7 foot diameter circular brick foundation. Although the two flues described above appeared to originate in this vicinity, the actual connections were not visible.



A possible brick furnace was located approximately 60 feet to the north of the gas producer. The feature measured 11 by 7.5 feet and extended nine feet into the underlying soils. The feature was reinforced with one-inch thick iron pipe set vertically into the four corners. Finally, the brick foundation of the company “vault” (as identified on the 1907 Sanborn© map) was located near Madison Street during the investigations. Machine stripping in the vicinity of the feature revealed a few post holes and brick piers, but they could not be attributed to any known structure.

MILK BOTTLES

Advertisements for the Belle Pre Bottle Company describe the company as the largest milk bottle producing factory in the world. Mysteriously, Belle Pre bottles are very rare among collectors and the real extent of the company’s sphere of commercial activity remains unclear. Very few milk bottles were recovered from the site during the archeological monitoring, but this meager evidence may demonstrate the widespread distribution of Belle Pre bottles, as they include bottles from Washington D.C., Philadelphia, San Francisco and Wisconsin dairies. Most of the bottles were produced with an automatic bottle machine; research revealed that the Belle Pre was using up to seven machines by 1908 to produce quarter, half pint, pint and quart sized milk bottles.



Only one recovered bottle exhibited the Belle Pre Company patented lip groove. The “slugplate” of the bottle was blank; however, the back was embossed with “THIS BOTTLE TO BE WASHED AND RETURNED” and the base with “BELLE-PR.../PATENTED NOV...” Because the milk bottle was embossed with the Belle Pre Company name (1902-1921) and was manufactured with an automatic bottle machine (post 1910) with a capseat finish (1889-1950s), the manufacture date range for this bottle must fall between 1910 and 1921. Additionally, the bottle may have been used as a salesman’s sample because it did not contain a dairy name (Flahive and Sipe 2007: 57).

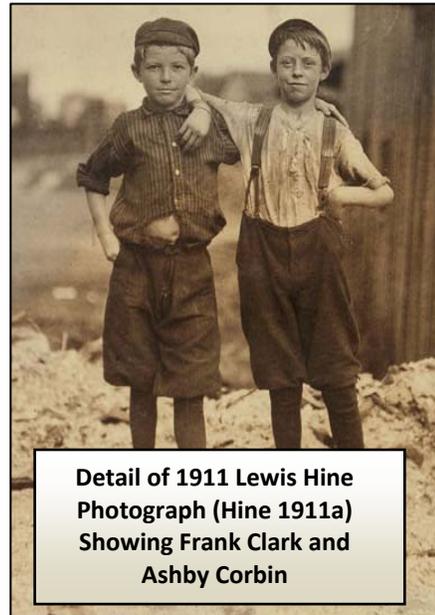
Other recovered artifacts included cullet/wasters, glass bottle stoppers, cane and other decorative twisted glass, evidence that skilled glass workers were employed at the company. Generally, throughout the early years of American glass production, the glass blower was a highly skilled, sought after, and respected artisan.

CHILD LABOR

Wages for skilled glass blowers were fairly high, averaging about 80 cents per hour in 1903, twice the rate of a bricklayer and nearly three times that of a blacksmith at the time; however, most skilled labor in the industry was paid on a piece rate basis. The average work week for glassworkers in Virginia and industry wide in 1914 was between 48 and 54 hours. Labor cost was significant in the glass industry, at least in the 20th century and possibly earlier, averaging about 42% of the sales value of product in 1917, despite labor costs below 20% in some fully automated factories (Department of Commerce 1917: 246-255).

It was certainly the high cost of labor in the glass industry that led to the widespread use of child labor in the industry. Although it is unknown to what extent the exploitation of “boy labor” was undertaken in early glassworks in the region, the widespread use of child labor around the turn of the 20th century is well documented, as in the photos of Lewis Hine, available at the Library of Congress.

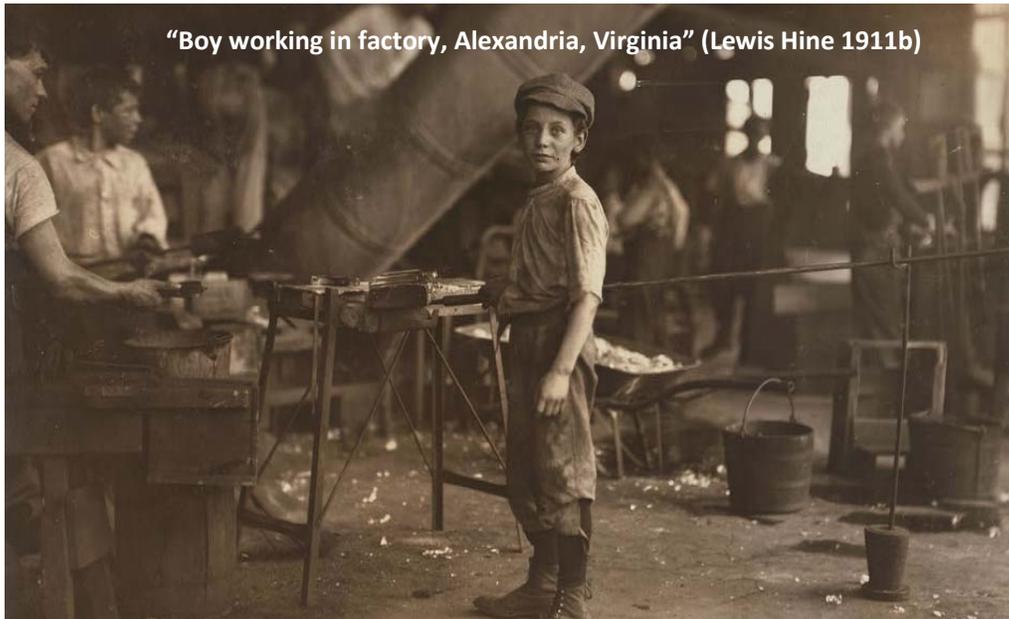
The widespread use of child labor in the glass industry declined as the adoption of automated manufacturing technology spread in the first decades of the 20th century, driving down the cost of labor for the factories. Federal regulation of child labor did not occur until 1938, when President Franklin D. Roosevelt signed the Fair Labor Standards Act, which set minimum wages and maximum hours for all workers employed in interstate commerce and also placed limitations on child labor.



Detail of 1911 Lewis Hine Photograph (Hine 1911a) Showing Frank Clark and Ashby Corbin

Although research at this time has not conclusively determined the degree of the child labor at the Belle Pre Bottle Company or the other glass factories in the Alexandria, Virginia, several photographs from the Hine collection document the use of children employed at an unnamed Alexandria glass factory and at the Old Dominion Glass Company in 1911.

Two of Hine's photographs show children employed at glass factories in the city, who were later employed by industries associated with Potomac Yards, located just to the north of the Belle Pre Factory. Potomac Yards was established in 1902 as a classification and transfer facility for freight moving between northern and southern states. According to his daughter, Ashby Corbin was later employed as an engineer at the Mutual Ice Company, (Manning 2012a), which supplied ice to refrigerated cars for perishable fruits and vegetables passing through the Yards. Mutual Ice was under lease to the Fruit Growers Express Inc. Another glass factory boy (Robert Kidd) also worked for the Fruit Growers Express and then Southern Railroad as a car repairer, according to an interview with his daughter (Manning 2012b).



The Belle Pre Bottle Company declared bankruptcy on October 15, 1912. The company's real estate and machinery was sold at auction and eventually the property was conveyed to the trustees of The Old Dominion Glass Corporation in October of 1913. The factory remained closed between September of 1914 and November 1916 because of a pending vote on prohibition; however, in June of 1916 the Old Dominion Glass Company announced that it would reopen the Belle Pre plant.

Operations probably resumed in September of 1916 and continued until 1919, but there are no industry listings or reports of Belle Pre following the year 1914. The factory was reportedly used for storage after 1919, but according to the Alexandria Gazette, on October 24, 1921, one day before Mr. Schwarzmann, secretary of the Old Dominion Glass Co, expected to sell the Belle Pre, a fire "of suspicious origin destroyed the one story frame 200 by 300 foot structure."

Prohibition and a series of fires may have contributed to the demise of this factory; however, the decline of glass bottle manufacturing in the City of Alexandria can be attributed to costs associated with rebuilding after fires, the lack of readily available natural resources, and other economic pressures (Pfanstiehl et. al 1999:10-2).

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Hine, Lewis W.

1911a *Two young carrying-in boys in Alexandria (Va.) Glass Factory. Frank Clark (on left) 702 N. Patrick St., could neither read nor write, having been to school only a few weeks in his life. Two older brothers work in glass factory, and his father is a candy maker. Frank is working on night shift this week. Ashby Corbin (on right), 413 N. St. Asaph St. Has had only four terms of schooling.* Library of Congress Prints and Photographs Division, Washington, D.C.
<http://www.loc.gov/pictures/resource/nclc.01296/>.

1911b *"Carrying-in" boy in Alexandria Glass Factory, Alexandria, Va. Works on day shift one week and night shift next week.* Library of Congress Prints and Photographs Division, Washington, D.C. <http://www.loc.gov/pictures/resource/nclc.01293/>.

Manning, Joe

2012a *Interview with Anna Corbin Dodson, daughter of Ashby Corbin, conducted by Joe Manning (JM), on February 6, 2009.* Electronic document,
<http://www.morningsonmaplestreet.com/ashbycorbin2.html> , accessed March 1, 2012.

2012b *Edited interview with Catherine Dicks (CD), daughter of Robert Kidd, conducted by Joe Manning (JM), on January 13, 2009.* Electronic document, <http://www.morningsonmaplestreet.com/robertkidd2.html>, accessed March 1, 2012.

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