United States Department of the Interior

National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, How to Complete the National Register of Historic Places Registration Form. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property Historic name: Valley Furnace Other names/site number: Fanny Furnace/Valley Furnace Name of related multiple property listing: N/A (Enter "N/A" if property is not part of a multiple property		
2. Location Street & number: Route 38, Approximately 750 feet west City or town: Valley Furnace State: WV County: Barbon Not For Publication: Vicinity:		
3. State/Federal Agency Certification		
As the designated authority under the National Historic	Preservation Act, as amended,	
I hereby certify that this $\frac{X}{X}$ nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.		
In my opinion, the property X meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:		
nationalstatewideX_local Applicable National Register Criteria:ABCX D		
_A _B _C _^D		
Susau Mierce Deputy State Historic	Preservation Officer 661023	
Signature of certifying official/Title:	Date	
West Virginia State Historic Preservation Office, Department	t of Arts, Culture & History	
State or Federal agency/bureau or Tribal Government		
In my opinion, the property meets does no	t meet the National Register criteria.	
Signature of commenting official:	Date	
Title:	State or Federal agency/bureau or Tribal Government	

United States Department of the Interior National Park Service / National Register of Historic Places Registration Form NPS Form 10-900 OMB Control No. 1024-0018 Valley Furnace Barbour County, WV Name of Property County and State 4. National Park Service Certification I hereby certify that this property is: entered in the National Register determined eligible for the National Register ___ determined not eligible for the National Register ___ removed from the National Register ___ other (explain:) _____ Signature of the Keeper Date of Action 5. Classification **Ownership of Property** (Check as many boxes as apply.) Private: Public – Local Public – State Public – Federal **Category of Property** (Check only **one** box.) Building(s)

District

Structure

Object

Site

United States Department of the Interior National Park Service / National Register of Historic Places Registration Form NPS Form 10-900 OMB Control No. 1024-0018 Valley Furnace Barbour County, WV Name of Property County and State **Number of Resources within Property** (Do not include previously listed resources in the count) Contributing Noncontributing 0 0 buildings 0 sites 6____ structures 0_____ 0 _____ objects Total Number of contributing resources previously listed in the National Register _____ 6. Function or Use **Historic Functions** (Enter categories from instructions.) INDUSTRY/PROCESSING/EXTRACTING: Processing Site

Current Functions

(Enter categories from instructions.)

RECREATION AND CULTURE: Outdoor Recreation

Principal exterior materials of the property: <u>STONE/Sandstone</u>

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7. Description		
Architectural Classification		
(Enter categories from instructions.)		
OTHER/Stone Blast Furnace		
OTTIER/Stone Blast I utilace		
Materials: (enter categories from instructions.)		
VIALEFIAIS: Lenier calegories from instructions.)		

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

[Within this document, the furnace may be referred to as the Fanny Furnace between 1847-1850, and the Valley Furnace between 1850-1855 based on documentary evidence of the ownership at the time. Some secondary documents referred to the furnace as the Brushy Fork Furnace, but for this nomination, the furnace will generally be referred to as the Valley Furnace.]

The Valley Furnace is located in the Cove District of Barbour County, West Virginia along the Mountaineer Highway (Route 38), approximately 0.3 miles west of Shilo Road and approximately 3 miles northeast of Nestorville, West Virginia in the unincorporated, rural community of Valley Furnace. The former charcoal-fired cold-blast iron furnace stack is constructed of sandstone approximately 23 feet in height built with a truncated pyramidal shape with a base dimension of 30 feet by 30 feet with its approximate measurement at its current zenith of 20 feet by 20 feet. The furnace is eligible under Criterion D for its potential to yield information associated with the early manufacturing of iron in Barbour County. The period of significance of the furnace is from 1847 to 1855. While the stack itself has suffered from erosion and some repair through a local inmate work program, it still retains its integrity of location,

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setting, feeling, association and materials. The workmanship and design of the furnace has been compromised somewhat through the structural failure and subsequent repair of the furnace walls. Still, this furnace is the only known iron furnace in Barbour County and much can be learned from it.

Narrative Description

Description

The Valley Furnace is situated on a flat parcel north of Brushy Fork of Teter's Creek with a small, unnamed tributary running along the east elevation which is believed to have powered a water wheel to pump cold air from a bellow into the furnace. The furnace is located adjacent to a steeply pitched hillside with the remains of an old bench road, possibly used to access the charging station of the furnace stack, still evident (to the northeast).

Historically, the furnace was reportedly between 32 and 39 feet in height and was constructed similar to other cold-blast iron furnaces from the time period. A brick stack provided the opening for the raw material to enter into the furnace. The stack then was lined with sand to provide a layer of insulation, followed by a layer of stone, then sand and then a structural layer of stone to support the furnace. Iron ore, charcoal and flux (mostly limestone) was placed into the furnace from an opening in the top of the stack. This combination of raw material is referred to the charge. The heat from the process separated the ore from the impurities and allowed molten iron to flow out into forms cut into sand, which, when cooled, served as pig iron that was transported and sold to foundries. One side of the furnace wall should have a recessed arch with an opening to allow the insertion of a tuyere or iron pipe connected to a bellow to force a cold air blast below the bosh chamber. The furnace also had vents constructed into the exterior walls to allow gas to escape. (Figure 4). Since the heat was most intense in the bosh, that was where the iron ore transformed into a molten material before the liquid was allowed to run into the casts. The shape of the internal structure supported the heavy load and allowed for the air blast to move freely.

Historically, there may have been a charging bridge and/or associated buildings which extended from the hillside to the top of the furnace in which to place ore, limestone and charcoal into the stack. Additionally, documentary evidence suggests that the furnace was assisted by a water wheel which pumped cold air into the stack. A natural unnamed tributary may have acted as a headrace to power the water wheel. It is unknown if the water wheel was an overshot or undershot wheel. Archaeological evidence could indicate if water was dammed from the unnamed tributary and diverted to power the wheel via a flume like the National Register-listed Virginia Furnace in nearby Preston County.

¹ Norman Scott, Shenandoah Iron: A History of Mining, Smelting and Transporting Iron in the Virginia Counties of Clarke, Frederick, Page, Rockingham, Shenandoah and Warren, United States: Create Space.com, 2017, 64 and Arthur Cecil Bining, Pennsylvania Iron Manufacturing in the Eighteenth Century, Pennsylvania Historical and Museum Commission, vol. iv, Harrisburg, 1938, 78.

² Scott, 64.

³ Arthur C. Bining, *Pennsylvania Iron Manufacturing in the Eighteenth Century*, Pennsylvania Historical and Museum Commission, vol. iv, Harrisburg, 1938, 79.

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According to historic newspaper articles, the original furnace site contained "the furnace stack, an engine house, coal house, etc." on a thirteen-acre parcel, however, adjacent related parcels also included "about 20 or 30 dwelling houses erected thereon, besides new store house and blacksmith shops, stables and corn cribs, etc." Additional lands included groves of timber and iron ore. No above-ground references of these structures, aside from the furnace, are currently visible.

Today, the furnace is approximately 23 feet in height and is constructed with both cut and rough-cut sandstone in a truncated pyramidal design. The exterior of the furnace is clad in fieldstone with a flat arch hearth located on the west elevation (Photo 1). A large lintel supports the trapezoidal opening where tool marks are visible on the interior stones (Photo 5 and 6). No other openings (including the tuyere passage or bosh) are currently visible due to the deterioration of the stack. It appears that the original stone was dry laid and although the furnace interior is not accessible, sand is depositing in the hearth which may show the deterioration of the stack. Commonly, the interior of charcoal, cold blast furnaces were lined with firebrick inside the stack, known as the bosh. The furnace also had vents constructed into the exterior walls to allow gas to escape, although it is difficult to ascertain which openings were vents and which holes are from erosion.

The southeast elevation of furnace appears to have suffered the most and has deteriorated into a pile of rubble (Photo 2). The southeast elevation was also repaired in 1989 by the Barbour County Inmate Work Crew, however, it appears that the southwest, northwest and northeast sides were not altered (Photos 3 and 4). The opening at the top of the furnace was also enclosed with concrete and a piece of the northeast corner also showed evidence of concrete, however, the southeast elevation that was previously repaired has since fallen (Photo 13).

The facility is currently utilized as a county park and consists of approximately 0.475 acres of land fenced on three sides and is situated north of Mountaineer Road and the Brushy Fork Creek. Evidence of early accommodations to the park are visible and include the concrete remains of a pit toilet, concrete slabs which held picnic benches, pavilions (Photos 8, 9 and 10). A gravel pull-off area along Route 38 provides parking for the site. The wooden structures were torn down ca. 2020, and only the concrete pads remain.

Early deeds suggest that the original furnace property contained several parcels which included approximately 1,000 acres while the furnace structure itself was contained to a thirteen-acre parcel. Unfortunately, the deed does not identify the meets and bounds of the thirteen-acre parcel, and it is difficult to identify its original, historic boundaries.

Documentary evidence suggests that a water wheel powered a bellow (approximately 1847-1850) before a steam engine provided the cold air blast (1850-1855). No apparent above ground evidence of a water wheel pit remains, although there are cut stones irregularly placed in an adjacent stream which may indicate the wheel's former placement (Photo 11).

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⁴ The Wheeling Daily Intelligencer, June 7, 1860, Page 2.

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The furnace's significance was recognized in 1966 with the addition of a roadway historical marker and the West Virginia Department of Highways operated a small roadside park between ca. 1971-1988 with a picnic area, timber bridge with concrete piers and pit toilets until they broke their leasehold on the property due to the cost of maintaining the structure as well as safety concerns. In 2020, the pavilions, pit toilet and tables were removed before Barbour County took possession of the property and removed debris and small trees growing from the furnace.

While volunteers partially reconstructed the south furnace wall in 1989, it is believed that archaeological evidence remains intact to assist in preserving the historic integrity of the site. The furnace's location at the base of a steep embankment and adjacent to a water source retains its original setting and location.

Historically, the legacy of the Valley Furnace has been an oft repeated telling of the information found in Hu Maxwell's *History of Barbour County* (1899), however, little primary source information exists to flush out the historical narrative. No archaeological investigations have been conducted of the furnace as yet which may yield additional information. Pieces of fire clay, slag and brick appear to be scattered around the base of the furnace and modern iron bars and railroad spikes are also present (Photo 12). A historical archaeological investigation can further uncover the story of the former Valley Furnace.

Valley Furnace c. 1847 contributing structure

Pit Toilet Foundation

ca. 1988 non-contributing structure

Southwest of the furnace, the remnants of a roadside pit toilet remain. The 8 foot by 14-foot top slab is constructed of concrete and has eight square holes. Inside the pit, poured concrete and concrete block walls are visible. The pit toilet is no longer functioning but instead has collected trash from littering vandals.

Picnic Pavilions

ca. 1988 non-contributing sites

Six former picnic pavilion concrete slab bases are located east of the furnace. There were no tables or pavilions at the site remaining.

Concrete/Timber Bridge c. 1971 non-contributing structure

Unnamed Tributary to Brushy Fork n.d. contributing (possible wheel pit/race)

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Statement of Integrity

The Valley Furnace, while altered, still conveys the historic significance of a cold blast iron furnace on the western Virginia frontier. Although the furnace did not have a long lifespan, the technological advances of the furnace reflect the industrial revolution of the era. The furnace retains its original <u>location</u> and is the only stack in Barbour County and one of only six remaining in North Central West Virginia (as of 1989). The rural <u>setting</u> of Valley Furnace is retained as is its proximity to the Brushy Fork. While the <u>workmanship</u> and perhaps some <u>materials</u> have been altered, the structure still provides clarity into the operations of a mid-19th century iron furnace and provides a <u>feeling</u> of and <u>association</u> with a mid-19th century industrial site. Finally, archaeological research will help provide a more detailed understanding of the <u>materials</u> and <u>design</u> of this furnace and this unique period in Barbour County history.

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	tatement of Significance		
Apj	icable National Register Criteria		
	x "x" in one or more boxes for the criteria qualifying the prop	erty for National Register	
	A. Property is associated with events that have made a significant broad patterns of our history.	gnificant contribution to the	
	B. Property is associated with the lives of persons signific	cant in our past.	
	C. Property embodies the distinctive characteristics of a ty- construction or represents the work of a master, or pos or represents a significant and distinguishable entity w individual distinction.	sesses high artistic values,	
Х	D. Property has yielded, or is likely to yield, information history.	important in prehistory or	
	ria Considerations		
(Ma	x "x" in all the boxes that apply.)		
	A. Owned by a religious institution or used for religious p	ourposes	
	B. Removed from its original location		
	C. A birthplace or grave		
	D. A cemetery		
	E. A reconstructed building, object, or structure		
	F. A commemorative property		
	G. Less than 50 years old or achieving significance within	n the past 50 years	

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Areas of Significance (Enter categories from instructions.) INDUSTRIAL ARCHAEOLOGY/Non-Aboriginal	
Period of Significance 1847-1855	
Significant Dates N/A	
Significant Person (Complete only if Criterion B is marked above.) N/A	
Cultural Affiliation N/A	
Architect/Builder UNKNOWN	

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The Valley Furnace is locally significant under Criterion D: Industry and Archaeology: Non-Aboriginal for its potential to yield additional information related to the early production of iron ore and the manufacturing of pig iron in the mid-19th century in Barbour County, West Virginia. Archaeological investigations could help provide a better understanding of the mid-19th century iron furnace by evaluating the subsurface for evidence of the processing of ore, furnace construction methods, as well as the socio-economic history of the complex. The period of significance for this furnace is 1847-1855, which reflect the years the furnace was in operation.

Narrative Statement of Significance (Provide at least one paragraph for each area of

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Brief History of the Early Iron Industry in North Central West Virginia

In the late 18th and early 19th century, Virginia sought to capitalize on its natural resources, especially timber, minerals and waterpower. In the early colonial period, bloomery furnaces were established to produce wrought iron. These small complexes heated the iron ore with fuel (usually charcoal) and flux (usually limestone) to create a material that, through the hammering away of the impurities, established a malleable piece of metal which was used to manufacture tools and weapons.⁵

Later, blast furnaces were established which could produce greater quantities of cast iron than the bloomery furnaces, however, cast iron was more brittle than the wrought iron. Blast furnaces also took greater effort to establish. Generally situated adjacent to the iron ore and timber stands, the cold blast furnace often contained an inner core constructed of a firebrick-lined stack insulated by clay before being covered with a structural layer (generally stone).⁶ Oftentimes resembling a truncated pyramid, the interior shaft of the furnace was layered with fuel (consisting of charcoal in the early years), the ore and flux or limestone. The heat from the stack allowed the slag and the iron to separate and the molten iron to flow into pits carved in the sand where they were allowed to cool and transform into pig iron. To provide a continuous source of oxygen to increase the temperature of the furnace, air was pumped into the structure by a bellow, oftentimes powered by a water wheel. In later years, mechanical engines replaced the need for waterpower. Toward the end of the 19th century, as the timber stands began to deplete, ironmakers took advantage of the coal seams nearby the furnaces. Coal and coke do not initially burn as hot or as clean as charcoal so iron masters increased the temperature of the furnace by incorporating previously warmed air into the furnace (hot blast), thereby creating a more efficient system which produced greater amounts of iron.⁷

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⁵Janet Friedman, et. al, *The Iron Industry of Virginia*, 1620-1920, George Washington and Jefferson National Forests, Western Virginia, https://www.dhr.virginia.gov/VLR to transfer/PDFNoms/011-5116 Iron Industry of Virginia MPD 1996 Draft Nomination.pdf

⁶ Friedman, E-5. ⁷ Friedman, E-5.

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Geologically, western Virginia had two types of ores discovered in the late 18th and early 19th century. The Appalachian band of ore (known as the western field) included brown carbonates and black bands which were found in Monongalia, Preston, Barbour, Braxton, Clay, Kanawha, Jackson and Raleigh Counties. Monongalia and Preston counties had the largest outcropping of material in the region. The second region was known as the eastern field and included Monroe, Greenbrier, Mercer, Pocahontas, Pendleton, Grant and Hampshire Counties. These counties' ores were differentiated by the inclusion of brown and red hematites. Hampshire and Jefferson Counties had established some of the earliest forges in Western Virginia, including the Vestal Bloomery, built in 1734 near the Shenandoah River and the Keep Trust Furnace, constructed ca. 1763, was built along the Potomac River near Harpers Ferry. Both furnaces were located in Jefferson County.

The earliest blast furnaces in North Central Western Virginia included the Deckers Creek Furnace in Monongalia County, which was first constructed prior to 1798. The Deckers Creek Furnace was located approximately 3.5 miles from Morgantown and included a furnace and a forge which was water-powered. Soon, additional furnaces were constructed to create iron. The nearby Cheat River also supplied energy to the "Jackson's Works on the Cheat," also known as Pleasant Furnace, where Samuel Jackson forged nails by hand. Jackson purchased and later sold a second nearby facility known as the Davis Furnace, although it failed in 1811. Reportedly, Jackson purchased iron ore from Spring Hill, Pennsylvania to continue producing nails. At the height of its success, the Jackson facility may have employed as many as 1200 men in the mid-19th century. Monongalia County continued to host furnaces including the Woodgrove Furnace on Ice's Ferry (constructed in 1822, destroyed by fire in 1862), the National Register-listed Henry Clay Furnace, a cold blast furnace, and the Anna Furnace, built in 1845. The Clinton Furnace was situated nearby the Anna Furnace, however, it failed soon after its construction in 1846.

Preston County contained a number of early furnaces including the Greenville Furnace, built 1815 and failed by 1830. It was reopened in 1836 yet failed again four years later and was torn down in 1881. The Old Valley Furnace was constructed ca. 1837, but it closed soon thereafter. National Register-listed Virginia Furnace/Muddy Creek Furnace/ Josephine Furnace was built in 1832 and closed in 1880. The Franklin Furnace (Irondale) was built in 1859 and was remodeled in 1878 to be one of the largest furnaces in existence with a 62-foot-high stack and thirty coke ovens. The Glady Furnace was also constructed circa 1870 and closed

⁸ J. W. Methany, "The Early Iron Industry in West Virginia," *The West Virginia Review*, May 1926, United States: Zurich Publishing Company, 1926. 256.

⁹ Ibid.

¹⁰ Lee Maddox, "The Virginia Furnace" National Register of Historic Places Nomination Form, 1998, page 8-1.

¹¹ Methany, 256. The Deckers Creek Furnace was later called the Valley Furnace (after 1824) and operated until 1855.

¹² Methany, 275.

¹³ Methany, 276.

¹⁴ Margaret Parker, et al., Norris Farm, HABS No. WV-298, page 4.

https://memory.loc.gov/master/pnp/habshaer/wv/wv0500/wv0518/data/wv0518data.pdf

¹⁵ Parker, 4.

¹⁶ Methany, 276.

¹⁷ Maddox, Page 8-2.

¹⁸ Methany, 276.

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eleven years later due to a strike. ¹⁹ Both the Franklin Furnace and the Glady Furnace were constructed by George Hardman, an investor from Wheeling. ²⁰

While most pig iron produced on the early western Virginia frontier was utilized by settlers and not for major manufacturing, toward the mid-19th century, Wheeling became a dominant city in the smelting and development of iron products. Known as Nail City for the numerous foundries producing products, small furnaces saw an opportunity to transport their goods to the larger cities to increase their profits. With the development of turnpikes, steamships and eventually the railroad, transporting pig iron to major foundries, for a short time, became more profitable.

Industrialist entrepreneurs saw the potential in this market and began purchasing furnaces and associated mineral rights. Wheeling saw several capitalists invest in small, local furnaces in Preston and Barbour Counties including George Hardman and William Whitman. As the demand for iron grew, associated structures were established near the furnaces including dwellings for the iron master as well as employees (or perhaps slaves), the casting sheds, a blacksmith's shop, engine house, etc.

Furnaces needed large amounts of fuel to convert the ore into pig iron. In order to fuel the Valley Furnace, timber was transformed first into charcoal, generally by being stacked in large piles and smothered with dirt before being lit on fire to control the speed and intensity of the burn. The resulting charcoal was then funneled into the furnace to create the high temperatures needed to separate the ore from the slag. Iron ore in this region may have been found on the surface of the ground or sometimes shallow trenches were dug to unearth the ore. It does not appear deep mines were dug to excavate the ore at this location. Instead, it was located closer to the surface within the Bolivar Fire Clay deposit which, with limited iron nodules, may explain, in part, why this furnace was not more successful.

In the mid-19th century, many northern industries began to utilize anthracite coal to power their furnaces were able to produce iron more cheaply. Additionally, the opening of the Sault Saint Marie iron ore fields and easy rail, steamship and canal transportation to market made producing pig iron locally less profitable. Western Virginia's charcoal furnaces began a steep decline in production.

A table in the 1850 US Census indicates that in Virginia, in 1850, 29 establishments were involved in the manufacture of pig iron producing 22,163 tons of pig iron.²⁴ The Census also reveals that 54 enterprises were involved in iron casting, while 38 establishments were involved in the manufacture of wrought iron.²⁵ In 1860, the US Census tells us that there was only 1 iron bloomery in Virginia which produced 550 tons of blooms. Pennsylvania became the "principal iron producing state in the union" in 1860 with 125 establishments, but that was still 42 less than

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¹⁹ Methany, 276.

²⁰ Maddox, Page 8-2.

²¹ Thomas C. Miller, *History of West Virginia*, v. 2-3, United States: Lewis Historical Publishing Company, 1913, 211.

²² Miller, 211

²³ William A. Price, et al. *Barbour and Upshur Counties and Western Portion of Randolph County*, United States: Wheeling News Lithograph Company, 1918, 763.

²⁴ U.S. Census, https://www2.census.gov/library/publications/decennial/1850/1850c/1850c-06.pdf, page 181.

²⁵ US Census, 1850, 82. There is no mention of the number of tons of wrought iron produced.

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the decade prior. ²⁶ That same year Virginia only possessed 39 establishments with 16 pig iron producing furnaces while the amount of pig-iron made was only 11,646 tons, almost half of what was produced the decade prior. The annual value of pig iron in Virginia also decreased almost \$230,000 between 1850 and 1860.²⁷

The decline of the charcoal fired blast furnaces was in direct correlation with the rise of the use of anthracite coal. The previous demand for charcoal had decimated the timber stands near the iron furnaces and the once plentiful natural resource was no longer easily accessible. By the end of the 19th century, West Virginia's cold-blast furnaces were no longer in operation.

Brief History of the Valley Furnace

In the early 19th century, as settlers pushed westward, away from the settled commercial and manufacturing centers of the east, a need developed for iron implements west of the Allegheny Mountains. Settlers soon found iron ore in the soils in the eastern panhandle as well as farther inland in north central western Virginia, including what would become Barbour County (in 1843). Barbour's rolling hills, timbered landscape and abundant waterways lured settlers who transformed the county into an agricultural destination.

On the banks of the Brushy Fork of Teter's Creek, John Johnson reportedly discovered ore in the area ca. 1835, and traveled to Philadelphia to encourage businessmen to consider opportunities in the area. ²⁸ Apparently word spread of the region's potential and a man named George W. Bryan saw an opportunity to exploit the natural resources.

In 1847, Bryan, originally a postmaster from Hampshire County, established the first iron blast furnace in Barbour County. In only two years, Bryan's success was evident as he appeared to be the wealthiest landowner in Barbour County according to the 1850 US Census. Identified as an "iron master," the 35-year-old Bryan's fortune was listed as \$9,000, which was approximately three times more than other successful landowners within Barbour County which had a heavily agricultural-based economy.²⁹

Bryan's furnace was reportedly 39 feet in height and situated on a bed of coal. 30 While coal could have been utilized to separate the minerals from the slag, early settlers considered it a less superior fuel.³¹ Instead of using the coal as the fuel for the furnace, Bryan transformed the nearby timber stands into charcoal, which was loaded into the top of the furnace, producing approximately 9,000 pounds of iron a day.³² Bryan named the furnace "Fanny" after his wife, Frances (Fanny) Colbert Bryan. Built into the side of a hill, the furnace was adjacent to the former St. George Road (Mountaineer Road) and immediately north of the Brushy Fork of the Teter Creek.

²⁶ 1860 US Census, https://www2.census.gov/library/publications/decennial/1860/manufactures/1860c-05.pdf, clxxix

²⁷ 1860 US Census, https://www2.census.gov/library/publications/decennial/1860/manufactures/1860c-05.pdf, clxxx ²⁸ Barbour County Historical Society, *Barbour County*, *West Virginia*... *Another Look*, Barbour County Historical Society, 1979,

²⁹ Ancestry.com, 1850 United States Federal Census [database on-line]. Lehi, UT, USA: District 5, Barbour, Virginia; Roll: 935; Page: 44a. 30 Hu Maxwell, The History of Barbour County, West Virginia: From Its Earliest Exploration and Settlement to the Present Time, United States: Acme Publishing Company, 1899, 319.

³¹ Metheny, 256.

³² William A. Price, et al. Barbour and Upshur Counties and Western Portion of Randolph County, United States: Wheeling News Lithograph Company, 1918, 763.

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Reports claim that mule or oxen teams hauled the pig iron to the Monongahela River, nearly 50 miles northwest to be shipped to larger markets. No primary evidence, however, can currently substantiate these oft repeated claims. The 1850 US Federal Census also revealed that only one drover lived in the county at that time and no other residents in Barbour County were engaged specifically in the iron industry. By the late 1840s, turnpike development including the Beverly and Fairmont Turnpike and the Morgantown Turnpike began opening Barbour County up to additional residential and commercial development. Soon thereafter, the B&O Railroad laid tracks through nearby Taylor County and brought new opportunities to transport goods from Barbour County to the world.

Bryan's direct ownership/operation of the furnace was short-lived. It appeared that George Bryan mortgaged the furnace on April 1, 1847 for \$1,400 as part of a Trust Agreement to a group of men which included George Nestor but then challenged the sale in Circuit Court so that "the defendant can account for the rent and the profits of the real and to determine the priority of the liens thereon." While this court case languished in the courts, George Bryan unexpectedly died ca. 1853 at the approximate age of 38 years old. John R. Williamson, an administrator for the Barbour County Chancery Court was appointed to manage the affair. 37

This case was not settled until 1859 yet the Furnace property continued to be embroiled in lawsuits. Additionally, some of the defendants involved in the lawsuit also sought assistance from the Virginia legislature in December 1850, in incorporating a company called the Pleasant Valley Furnace Company. While no mention is made of the Fanny Furnace or George Bryan, the petitioners, stating that they were the owners of the Pleasant Furnace (which included Henry Wilson, Isaac B. Marsh, GM Howdershelt, Charles Zinn and Severs Auvil (et.al)), and were currently "engaged in casting iron." Because of the sheer number of individuals involved, they found it "inconvenient" to continue on without an act of incorporation in the creation of a joint stock company. It was under Whitman's oversight that the Furnace transferred from a water powered blast to a steam engine circa 1850.

It appeared that the furnace was transferred through another Deed of Trust which was executed by William Whitman for George D. Evans, John Pickens and George Hardman to utilize the

³³ James Morton Callahan's *History of West Virginia* (page 147) references Hu Maxwell's *The History of Barbour County, West Virginia*, 1888. The discussion of Valley Furnace takes place on page 318.

³⁴ United States Federal Census, 1850, Barbour County, Virginia. This is not to say that drovers from neighboring counties couldn't have transported materials.

³⁵ James M. Callahan, Genealogical and Personal History of the Upper Monongahela Valley, West Virginia, Under the Editorial Supervision of Bernard L. Butcher ...: With an Account of the Resources and Industries of the Upper Monongahela Valley and the Tributary Region, United States: Lewis Historical Publishing Company, 1912, 54.

³⁶ "Cooper's Clarksburg Register," Clarksburg, West Virginia, July 7, 1852, page 3. The initial complaint was found in Chancery Orders Book 1, Page 324, dated April 19, 1852. Also see Barbour County Deed Book 2, Page 179.

³⁷ Barbour County Chancery Court Orders Book 2, Page 104, October 15, 1852; Barbour County Chancery Orders Book 2, Page 21, May 20, 1853. Fanny Bryan remarried after George Bryan's death and in 1855, she and her new husband, Harman Freeman (a farmer) sold an interest in Bryan's estate to Samuel Woods for \$25. Barbour County Deed Book 5, Page 91.

³⁸ Barbour County Chancery Orders Book 2, Page 422.

 ³⁹ Library of Virginia, Owners of the Pleasant Valley Furnace: Petition, 1851
 http://rosetta.virginiamemory.com:1801/delivery/DeliveryManagerServlet?dps_pid=IE2598581, accessed January 29, 2023.
 ⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Oscar D. Lambert, "West Virginia: It's People and It's Progress," United States, Historical Record Association, 1959, 194.

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property on May 22, 1855, however, they failed to meet the requirements of the agreement and the furnace property was to be placed up for public auction. The advertisement stated that the Fanny Furnace property would be sold to the highest bidder for cash and included:

"a furnace stack and good engine, a number of dwelling houses, store house, good stabling, &c., all in good order for working at this time; also one other tract of land containing 58 acres, adjoining the above tract with a saw mill, and several dwelling houses, &c., thereon; also one other small tract of land containing 50 acres, with a small improvement; also one other tract of land containing 25 acres unimproved; also one other tract of land containing 19 acres unimproved; also one other tract of land containing 1,000 acres, situated about one mile from said furnace abounding with good timber; also a quantity of personal property, consisting of 20 head of horses and 12 mules, 10 wagons, 4 one-horse carts, 36 sets of horse gearing, a quantity of household and kitchen furniture, 4 cooking stoves, 4 common stoves and many articles too tedious to mention. The title to the real estate is considered good but selling as trustee such title will only be made as is vested in me by the trust aforesaid, JR Williamson, Trustee."

Whitman, of Baltimore, later Wheeling, was listed as the owner of the "Valley (once Fanny) Steam Cold-blast Charcoal Furnace" which was managed by Jacob Baker, Jr. of Nestorville. ⁴⁴ The furnace was described as being "8 feet across the bosh by 32 feet high, and made in about twenty-two weeks of 1855, about 400 tons of metal out of blue lump carbonate ore of the coal measures mixed with crop or bog hematite." ⁴⁵

The 1850s was a turbulent time in American history. The United States was undergoing a transportation and economic evolution as well as continuing to grapple with the growing conflict between the industrial north and the more agrarian south, especially when dealing with the issues surrounding slavery. The State of Virginia also experienced a growing divide between the agrarian eastern counties and the western mountain counties. Within these circumstances, transportation improvements provided access to previously inaccessible areas.

The railroads also opened up new opportunities in the mid-west including the Sault Ste. Marie region of Michigan and Minnesota which brought good quality iron ore to the Pittsburgh and Wheeling iron smelting markets which decreased the need for the poorer quality pig iron created by West Virginia's ores. 46

While access to the railroads brought convenience, it also brought issues as Whitman, Baker and Wheeling Industrialist (and owner of several Preston County furnaces) George Harding were caught up in litigation against the Baltimore and Ohio Railroad. In 1868, Whitman and Baker served as witnesses in a case called *Thompson v. Baltimore & Ohio Railroad*, which challenged ownership of pig iron made by the "Fanny Furnace" while William Whitman owned the facility

⁴³ "Coopers Clarksburg Register", Clarksburg, WV July 18, 1855, Page 3. Also see Barbour County Chancery Book 2, Page 237, 146, 163, 187 and 195.

⁴⁴ Peter, Lesley, *The Iron Manufacturer's Guide to the Furnaces, Forges and Rolling Mills of the United States; with Discussions of Iron, Etc.* United States: n.p., 1866, 86.

⁴⁵ Lesley, 86.

⁴⁶ Metheny, 256.

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in 1855. The legal document also argued that George Hardman and Whitman were secret partners trying to protect their assets from creditors. ⁴⁷ The furnace appeared to have shut down ca. 1855 which may have been due to the increased competition from larger, coal-fired furnaces or because Whitman continually seemed to be in financial distress.

Whitman must have been able to retain a small portion of the property until 1869, when again, he was forced to put a 19-acre lot up for sale for the non-payment of taxes. J. Waugh, Elias Auvil and RS Pitzer purchased the land due to Whitman and Baker neglecting to pay \$18.50 in taxes in 1865. 48

The facility ceased official operation ca. 1855 and the furnace and adjacent land blended back into agricultural existence. In 1869, a small crossroads village took their name from the former industrial site and Valley Furnace became a post office location. The region remained rural with the majority of the land occupied by agricultural activities. Hardesty's 1883 *Map of Barbour County* also illustrated Valley Furnace's Post Office location with the map noting several nearby schoolhouses and churches. The reported buildings associated with the furnace, both residential and industrial, no longer appear visible in the area. The social history that accompanied the furnace, including who worked there, whether they were enslaved or free, and their roles in the operation appear to be lost to time. Over the twentieth century, the furnace lands were sold piecemeal to several local landowners.

In 1965, the West Virginia Historical Commission recognized the significance of the property by installing a historical marker. Efforts were made to repair the structure with funds from Lady Bird Johnson's highway beautification program, however, no documentation exists that indicates what exactly was repaired. A push for historical celebration ca. 1971 encouraged the West Virginia Department of Highways to take a lease on the property to create a roadside park centered around the furnace and promised to maintain the park while fencing it in to protect against intrusion from cattle. 1

Correspondence in the late 1980s suggest that vandalism occurred at the site. The DOH expressed three options in retaining the park: "close the park, rebuild the furnace or barricade the furnace." According to correspondence between the Department of Highways and the WV Department of Culture and History, the DOH canceled its contract with the landowner and

⁴⁹ Verbiage of Historical Marker, "Valley Furnace" as recognized by the WV Historic Commission, 1965,

⁴⁷ Thompson v. Baltimore & Ohio Railroad, 22 Md.396 (1868) as found in https://cite.case.law/md/28/396/, accessed 2/5/2023.

⁴⁸ Barbour County Deed Book 12, Page 264 (survey) and page 265.

https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf

50 Correspondence to William S. Richie, Commissioner Department of Highways from Joseph Kaiser, Jr. President of the Barbour County Planning Commission, dated January 4, 1988. https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf

⁵¹ Documentation from Phillip Pitts, Research Assistant from the WV Antiquities Commission, January 13, 1976 (with additional documentation later added). https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf

⁵² Correspondence to Ms. Kilbern, WV Division of Culture and History from WS Ritchie, Jr. Commissioner, Department of Highways, June 15, 1987. https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf

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closed the park.⁵³ In 1988, the Barbour County Historical Society sought to preserve the furnace, stating it is "one of six old iron furnaces left in our state." 54

A plaque was placed at the base of the furnace which stated in 1989, inmates from the Barbour County Inmate Work Program, supervised by W.F. Daughterty "rebuilt" the furnace. 55 Historic photos taken prior to 1989 depict the furnace with the top of the tower caved in. Trees had grown through the stones and threatened the structural integrity of the furnace. It appears that this work only rebuilt the south side of the furnace, which has since fallen in and obscured the marker placed at the foot of the furnace.

In December of 2020, the Barbour County Commission acquired the furnace property which was reduced to 0.475 acres of land.⁵⁶ The park pavilion structures, and pit toilet enclosure were removed from the site ca. 2020 prior to the county's acquisition of the property. The Commission continues to maintain the property for the historic enjoyment of the community.

At the height of the charcoal furnace industry, there were approximately 15 furnaces throughout North Central West Virginia, however, according to documentation from the West Virginia Department of Culture, only 6 furnace stacks remained within the state, as of 1987.⁵⁷

Potential to Yield Information

The Valley Furnace, while partially rebuilt and deteriorated, still contains important evidence as to the history of iron work in Barbour County. While documentary evidence is scant, this furnace was the only producer of iron in Barbour County and generated enough pig iron that was reportedly shipped north to Pittsburgh and Wheeling. One single furnace, in its short lifespan, provided an important economic boom to the region.

It appears that all wooden structures associated with the furnace have been removed. The furnace continues to be situation in its historic location and allows visitors to understand the relationship between it, the topography and water features. Archaeological investigations of the Valley Furnace could further explain what other buildings were located within the current boundary and what type of engine or machinery was involved in making this furnace successful. Archaeological research can also help explain the industrial and manufacturing process of pig iron in Barbour County in the mid-19th century. Additionally, an archaeological dig could

⁵³ Letter to the Department of Culture and History from Fred VanKirk, State Highway Engineer, August 18, 1987,

https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf .

54 Letter to the Department of Culture and History from Patricia McCauley, President of the Barbour County Historical Society, March 10, 1988, https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf

⁵⁵ Documentation from Phillip Pitts, Research Assistant from the WV Antiquities Commission, January 13, 1976 (with additional documentation later added). https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf ⁵⁶ Barbour County Deed Book 529, Page 611.

⁵⁷ In 1859, J. Peter Lesley listed the following charcoal furnaces in Northwest Virginia: Virginia Cold Blast Charcoal Furnace (Preston County), Old Valley Furnace (Preston County, in ruins since 1840), Greenville Cold Blast Charcoal Furnace (Preston County, probably abandoned 1847), Davis Cold Blast Charcoal Furnace (Monongalia County, in ruins), Henry Clay Furnace (Monongalia County, not in operation), Woodgrove Steam and Water Hot Blast Charcoal Furnace (Monongalia County), Anna (once Mars) Steam Hot Blast Charcoal Furnace (Monongalia County), Valley Cold Blast Charcoal Furnace (Monongalia County), Clinton Steam Cold Blast Charcoal and Coke Furnace (Monongalia County), Piney Steam Cold-Blast Furnace (Marion County near Fairmont), the West Fork Cold Blast Charcoal Furnace (Marion County near Fairmont but torn down due to Railroad path), Lancaster Steam Cold-blast Charcoal Furnace (Raccoon, Preston County), Clarksburg Cold Blast Charcoal Furnace No. 1 (destroyed 1847), Clarksburg Cold Blast Charcoal Furnace No. 2 (demolished 1846), Valley (once Fanny Furnace), Barbour County as found in Lesley, J. Peter, The Iron Manufacturer's Guide to the Furnaces, Forges and Rolling Mills of the United States. United Kingdom: J. Wiley, 1859, 84-85.

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indicate with certainty where the wheel pit for the furnace was located and whether or not a mill pond existed to divert the water to power the wheel. We may learn why the water wheel was replaced with a motor. Archaeological investigations may also shed light on whether the employees of the furnace were free or enslave labor and related social history. Additionally, information related to the collier pits may be discovered. Pieces of fire clay, slag and brick appeared to be visible scattered around the base of the furnace and iron bars and railroad spikes are also present.

Archaeological investigations of iron furnaces also provided a deeper understanding of iron works in other states.

A similar antebellum furnace was excavated in Bath, KY which revealed several key features. The Clear Creek Iron Furnace was established ca. 1839 as a water powered iron furnace and operated until 1857. The furnace was retrofitted in 1872 to utilize steam power and ceased operation in 1875. The Kentucky Archaeological Survey conducted investigations surrounding the furnace and found remnants of house chimneys, foundation stones, a foundation for a charging deck, a charcoal kiln and remnants of the original road. The test sites near the building revealed nails but no household goods, indicating that the buildings were industrial and not domestic in nature. The excavations also consisted of glass slag and an iron hanger (similar in appearance to features at the Valley Furnace).

The Maryland Department of Transportation also conducted an archaeological investigation into the Elkridge Furnace in Howard County, Maryland. This site utilized slave, convict and indentured servant labor to operate a pig iron furnace. The excavation uncovered brick floors, stone foundations and other domestic artifacts to provide an understanding of the working conditions at the site during the 19th century. ⁶⁰

A good understanding of Juniata Valley Iron Furnaces can be seen in the Blacklog Narrows which included the Winchester and Rockhill Furnace. The Pennsylvania Historical and Museum Commission's archaeological investigation uncovered the dam and race system, ore pits, a stone quarry, casting beds and charcoal making platforms. Additionally, while these sites were in poor physical condition above ground, with one furnace having lost 23' of stacked stone, the archaeological investigations provided a thorough understanding of the operation of these furnaces. Example 12 of 12 of 12 of 12 of 13 of 13 of 13 of 13 of 14 of 14 of 14 of 15 of 15

These three examples show how the archaeological record can help further uncover the story of the former Valley Furnace.

⁵⁸ Kentucky Archaeological Survey, Clear Creek Furnace, https://archaeology.ky.gov/Find-a-Site/Pages/Clear-Creek-Furnace.aspx, accessed 3/28/2023.

⁵⁹ Ibid.

⁶⁰ AASHTO Journal, "Maryland DOT Archaeologist Excavate Iron Furnace Site", August 19, 2022, https://aashtojournal.org/2022/08/19/maryland-dot-archeologists-excavate-iron-furnace-site/, accessed 3/28/2023.

⁶¹ Scott Heberling, Industrial Archaeology in the Blacklog Narrows: A Story of the Juniata Valley Iron Industry, Byways to the Past, Pennsylvania Historical and Museum Commission for the Pennsylvania Department of Transportation, 2007, 14 as found in https://www.penndot.pa.gov/ProjectAndPrograms/Cultural%20Resources/StoriesandHighlights/Documents/Industrial%20Archaeology%20in%20the%20Blacklog%20Narrows_digital%20edition2019_e300.pdf.
⁶² Heberling, 17.

Valley Furnace Barbour County, WV Name of Property County and State

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Name of Property

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Valley Furnace	Barbour County, WV		
Name of Property	County and State		
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	1850c/1850c-06.pdf		
	https://www2.census.gov/library/publications/decennial/1860/		
	manufactures/1860c-05.pdf		
WV SHPO.	WV State Historic Preservation Office, records. Charleston, WV.		
	https://mapwv.gov/shpo/docs/PDFs/ArchitecturalSites/BB-0018.pdf		
Previous documentati	ion on file (NPS):		
£	mination of individual listing (36 CFR 67) has been requested		
	in the National Register		
<u> </u>	nined eligible by the National Register onal Historic Landmark		
	oric American Buildings Survey #		
	oric American Engineering Record #		
	oric American Landscape Survey #		
·			
Primary location of a			
_	\underline{X} State Historic Preservation Office		
Other State agence	² y		
Federal agency			
Local governmen	ıt		
University Other			
	ory:		
rame of reposito	19		

Historic Resources Survey Number (if assigned): <u>BB-0018</u>

Valley Furnace		Barbour County, WV		
Name of Property		County and State		
10. Geographical Data				
Acreage of Property .475 acr	<u>res</u>			
Use either the UTM system or	latitude/longitude coordinate	s		
Latitude/Longitude Coordin	ates			
Datum if other than WGS84:_				
(enter coordinates to 6 decima	-			
1. Latitude:	Longitude:			
UTM References Datum (indicated on USGS ma	ap):			
NAD 1927 or X NAD 1983				
1. Zone: <u>17N</u>	Easting: <u>597811</u>	Northing: <u>4339159</u>		
2. Zone:	Easting:	Northing:		

Verbal Boundary Description (Describe the boundaries of the property.) The boundary description is the legal property description as listed in Barbour County Deed Book 529, Page 611 which states:

A tract of land situate at Valley Furnace at the old stone furnace site, on the waters of Brushy Fork of Teter Creek, Cove District, Barbour County, West Virginia, more particularly described as follows:

Beginning at a 5/8" rebar on the northern right of way line of State Route 38 (60' R/W), from which a point in the center of said road in the extended fence line between Workman Land & Livestock, LLC. And T. Owens, bears S78-34-50W, 220.04';

Thence with three (3) new lines N30-50-05E, 118.89 to a 5//8" rebar;

Thence N66-33-53E, 116.33' to a 5/8-inch rebar on said road right-of-way line, from which a water well situate on the tract herein described bears N85-15-24W,91.23';

Thence with said road right-of-way line S76-57-08W, 258.75' to the beginning and containing 20,699.64 square feet (0.475 of an acre), more or less.

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Boundary Justification (Explain why the boundaries were selected.)

The proposed NRHP boundary includes the Valley Furnace and the immediately adjacent grounds that were historically associated with the iron making facility as were identified on the current property deed.

11. Form Prepared By

name/title: Sandra Scaffidi, Architectural Historian and John Pitman, Preservation Assistant

organization: <u>Practical Preservation</u> street & number: <u>1 Avalon Road</u>

city or town: Fairmont state: WV zip code: 26554

e-mail: sandra@practical-preservation.com; john@practical-preservation.com

telephone: <u>304-314-3773</u> date: <u>January 22, 2023</u>

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- Additional items: (Check with the SHPO, TPO, or FPO for any additional items.)

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Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property: Valley Furnace (aka Fanny Furnace and Brushy Fork Furnace)

City or Vicinity: Valley Furnace

County: Barbour State: West Virginia

Photographer: Sandra Scaffidi and John Pitman

Date Photographed: December 3, 2022 (Photos 6, 12, and 13 taken February 5, 2023)

Description of Photograph(s) and number, include description of view indicating direction of camera:

- Photo 1 of 13. Southwest elevation of the Valley Furnace, facing east.
- Photo 2 of 13. Deteriorated furnace wall, facing north.
- Photo 3 of 13. East elevation of furnace, facing southwest. Note hillside banked to the north.
- Photo 4 of 13. North and west elevations, facing east.
- Photo 5 of 13. Detail of the hearth, facing east.
- Photo 6 of 13. Detail of the interior of the hearth. Note the tool marks on the stones.
- Photo 7 of 13. South elevation of furnace, facing north. Note the concrete picnic pavilion pads.
- Photo 8 of 13. Landscape to the east of the furnace. Note the unnamed tributary and culvert.
- Photo 9 of 13. Remnants of pit toilets from roadside park, facing west (southwest of furnace)
- Photo 10 of 13. Note remnants of roadway traveling up slope of hill toward furnace, facing north.
- Photo 11 of 13. Culvert extending into Brushy Fork. This may have also been a part of the wheel pit.
- Photo 12 of 13. Detail of debris scatter at the base of the furnace. Remnants of fire brick/ clay and slag are believed to be present.
- Photo 13 of 13. Photograph taken from drone of the furnace site. Note the deterioration of the southwest side of the furnace.



Photo 1. Southwest elevation of the Valley Furnace, facing northeast.



Photo 2. Deteriorated furnace wall, facing north.



Photo 3. East elevation of furnace, facing southwest. Note hillside banked to the north.



Photo 4. North and west elevations, facing east.



Photo 5. Detail of the hearth, facing east.



Photo 6. Detail of the interior of the hearth. Note the tool marks on the stones.



Photo 7. South elevation of furnace, facing north. Note the concrete picnic pavilion pads.



Photo 8. Landscape to the east of the furnace., facing northeast. Note the tributary and culvert.



Plate 9. Remnants of pit toilets from roadside park, facing west (southwest of the furnace).



Plate 10. Note remnants of roadway traveling up slope of hill toward furnace, facing north.



Photo 11. Culvert extending into Brushy Fork. This may have also been a part of the wheel pit.



Photo 12. Detail of debris scatter (fire brick/clay slag) found at the base of the furnace.

Barbour County, WV Valley Furnace Name of Property



Photo 13. Photograph taken from drone of the furnace site (2/5/2023). Note the deterioration of the southwest side of the furnace.

Paperwork Reduction Act Statement: This information is being collected for nominations to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.). We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

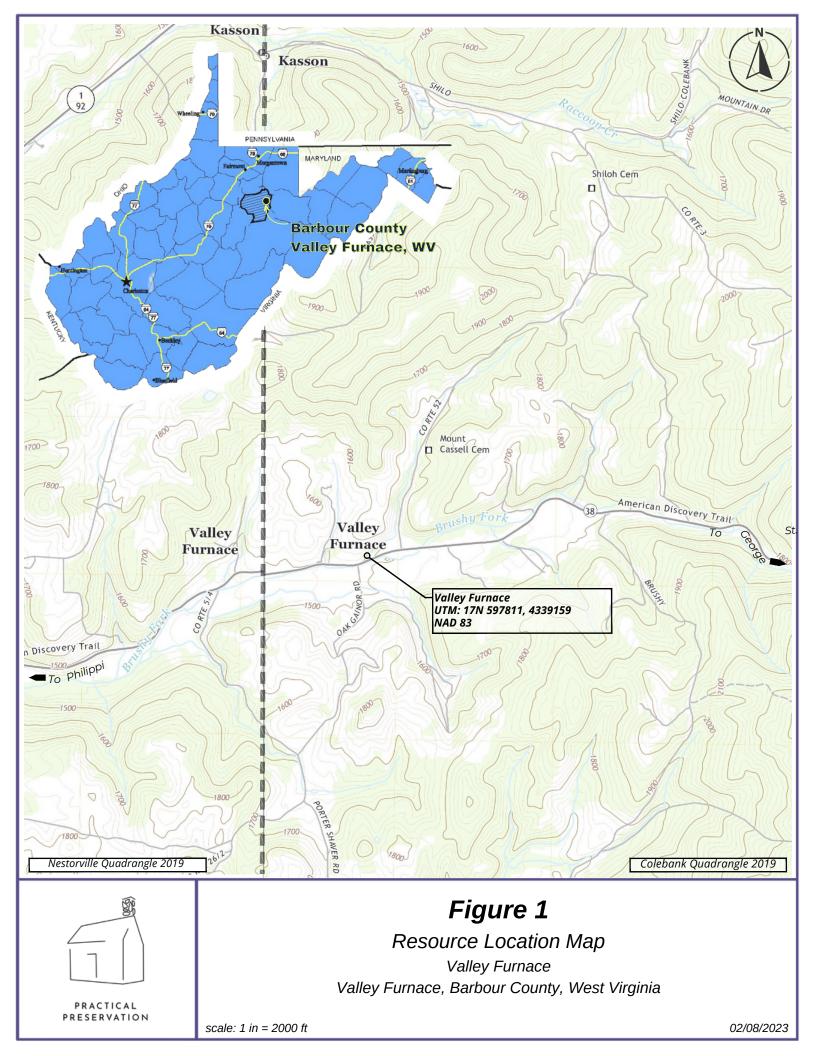
Estimated Burden Statement: Public reporting burden for each response using this form is estimated to be between the Tier 1 and Tier 4 levels with the estimate of the time for each tier as follows:

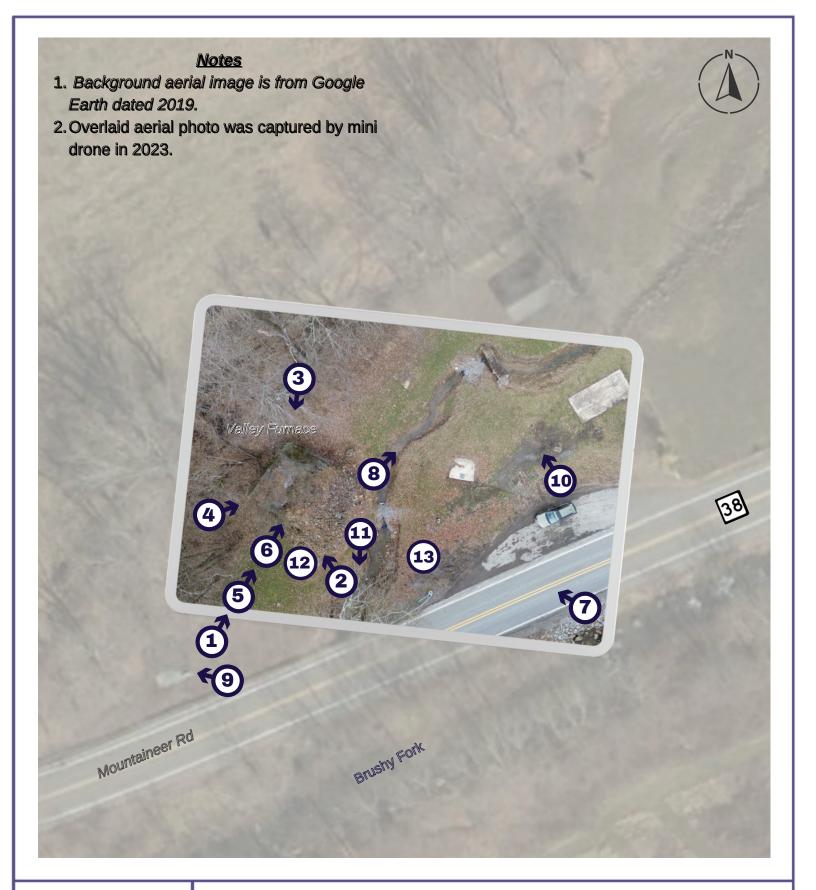
Tier 1 - 60-100 hours

Tier 2 - 120 hours

Tier 3 - 230 hours Tier 4 - 280 hours

The above estimates include time for reviewing instructions, gathering and maintaining data, and preparing and transmitting nominations. Send comments regarding these estimates or any other aspect of the requirement(s) to the Service Information Collection Clearance Officer, National Park Service, 1201 Oakridge Drive Fort Collins, CO 80525.







scale: 1 in = 40 ft

Figure 2

Photo Location Map

Valley Furnace Valley Furnace, Barbour County, West Virginia

02/08/2023

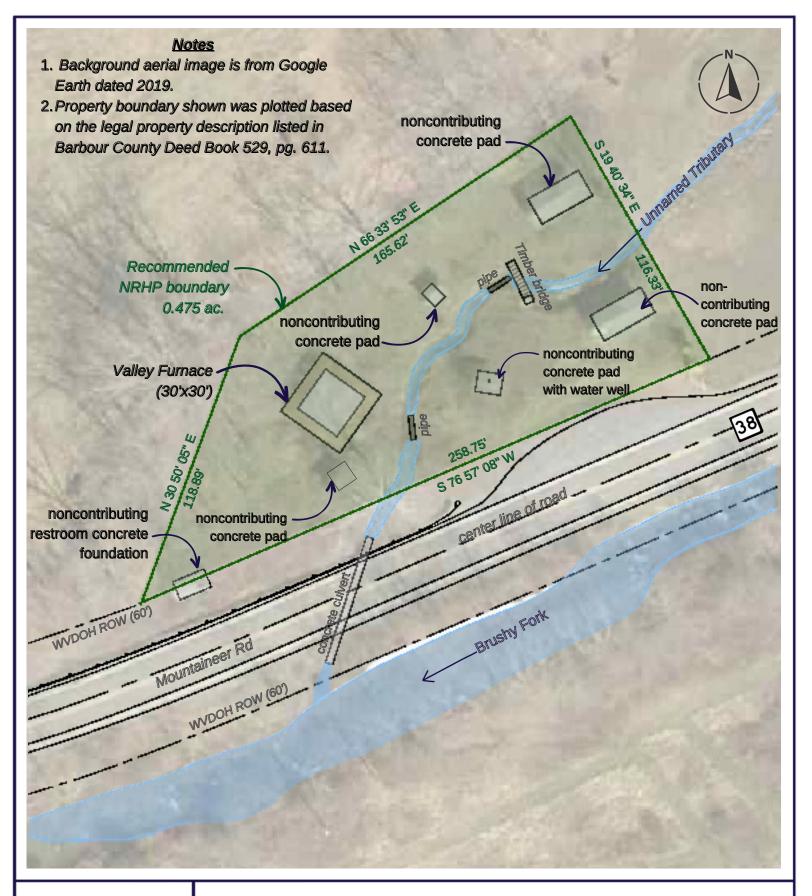
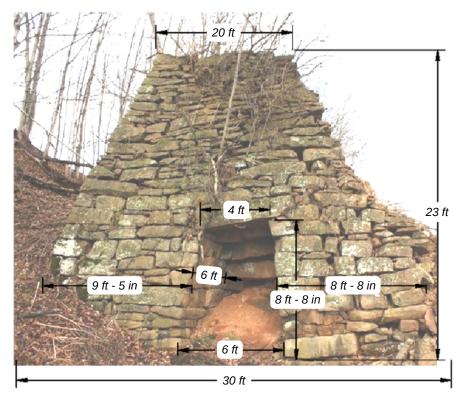




Figure 3 NRHP Boundary Map

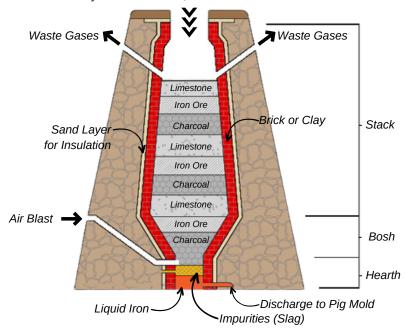
Valley Furnace Valley Furnace, Barbour County, West Virginia

scale: 1 in = 40 ft 02/08/2023



Valley Furnace Front Elevation View

Charge loaded from the top in alternating layers of Limestone, Iron Ore and Charcoal



Blast Furnace Typical Section

Image inspired by "Old Furnace of Venango & Clarion Counties, PA (1820 - 1850)." YouTube. Uploaded by Rick Sheffer, Feb. 9, 2021.



PRACTICAL PRESERVATION

Figure 4

Blast Furnace Elevation View

Valley Furnace

Valley Furnace, Barbour County, West Virginia

02/08/2023 scale: NTS