VLR- 6/12/02 NRHP- 12/12/02

NPS Form 10-900
(Rev. 10-90)

OMB No. 1024-0018

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 How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box ox by entering the information **requested.** 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. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Cabin Branch Pyrite Mine Historic District

other names/site number DHR #076-0289

2. Location

street 6 number Prince William Forest Par4 not for publication ___
city or town Triangle vicinity ___
state Virginia code . county Prince William code 153
zip code 22172

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this __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 ___ nationally _x_ statewide ___ locally. (___ See continuation sheet for additional comments.)

Signature of certifying official Date

State or Federal agency and bureau

In my opinion, the property ✓ meets ___ does not meet the National Register criteria. (___ See continuation sheet for additional comments.)

[signature] 2/25/02
Signature of commenting or other official Date

VIRGINIA DEPARTMENT OF HISTORIC RESOURCES
State or Federal agency and bureau

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4. National Park Service Certification

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I, hereby certify that this property is:

___	entered in the National Register ___ See continuation sheet.	_____	_____
___	determined eligible for the National Register ___ See continuation sheet.	_____	_____
___	determined not eligible for the National Register	_____	_____
___	removed from the National Register	_____	_____
___	other (explain): _____		

_____ _____ _____
Signature of Keeper Date of Action

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5. Classification

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Ownership of Property (Check as many boxes as apply)

___ private
___ public-local
___ public-State
_x_ public-Federal

Category of Property (Check only one box)

___ building(s)
_x_ district
___ site
___ structure
___ object

Number of Resources within Property

Contributing	Noncontributing	
____	____	buildings
4	____	sites
42	4	structures
____	1	objects
46	5	Total

Number of contributing resources previously listed in the National Register 0

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)

N/A

6. Function or Use

Historic Functions (Enter categories from instructions)

Cat:	Sub:
INDUSTRY/PROCESSING/EXTRACTING	extractive facility
INDUSTRY/PROCESSING/EXTRACTING	processing site
TRANSPORTATION	rail-related

Current Functions (Enter categories from instructions)

Cat:	Sub:
LANDSCAPE	park
RECREATION AND CULTURE	outdoor recreation

7. Description

Architectural Classification (Enter categories from instructions)

NO STYLE

Materials (Enter categories from instructions)

foundation	concrete
roof	N/A
walls	concrete
other	N/A

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

x A Property is associated with events that have made a significant contribution to the broad patterns of our history.

____ B Property is associated with the lives of persons significant in our past.

____ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

__x__ D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

____ A owned by a religious institution or used for religious purposes.

____ B removed from its original location.

____ C a birthplace or a grave.

____ D a cemetery.

____ E a reconstructed building, object, or structure.

____ F a commemorative property.

____ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance (Enter categories from instructions)

INDUSTRY
ARCHEOLOGY: Historic Non-Aboriginal

Period of Significance 1889-1920

Significant Dates 1889
1916
1920

Significant Person (Complete if Criterion B is marked above)

Cultural Affiliation ETHNIC HERITAGE: African-American
ETHNIC HERITAGE: European-American

Architect/Builder

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.)

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9. Major Bibliographical References

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(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS)
___ preliminary determination of individual listing (36 CFR 67) has been requested.
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark
___ recorded by Historic American Buildings Survey # _____
___ recorded by Historic American Engineering Record # HAER VA-50

Primary Location of Additional Data
_x_ State Historic Preservation Office
___ Other State agency
_x_ Federal agency
_x_ Local government
___ University
_x_ Other
Name of repository: Prince William Forest Park Curatorial Collection

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10. Geographical Data

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Acreage of Property 68 acres

UTM References (Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing		Zone	Easting	Northing
1	18	294830	4272600	4	18	295500	4271800
2	18	295100	4272300	5	18	294830	4272140
3	18	295500	4272350				

___ See continuation sheet.

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

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11. Form Prepared By

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name/title Kay Fanning, Ph.D., architectural historian

organization National Conference of State Historic Preservation Officers, for NPS National Capital Region, Land Resources & Planning, Office of Regional Historian date 16 October 2000

street & number 444 N. Capitol St., NW, Ste. 342 telephone (202) 523-5115

city or town Washington state DC zip code 20001

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Additional Documentation

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Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items)

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Property Owner

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(Complete this item at the request of the SHPO or FPO.)

name _____

street & number _____ telephone _____

city or town _____ state _____ zip code _____

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7. Description Section

Summary Description

The site of the Cabin Branch pyrite mine, encompassing 88 acres altogether, is a linear area stretching east to west along both sides of the North Branch of Quantico Creek (more accurately, the site runs southeast to northwest, but its orientation will be referred to as east-west for the sake of convenience; figures 1 & 2).[1] Large quantities of pyrite – a mineral ore used primarily in the production of sulfuric acid – were mined at this location between 1889 and 1920. The eastern half is a cleared area surrounded by wooded hills (figure 3), while the western half is largely wooded and more steeply sloped (figure 4). The mine was worked for 31 years under at least two different owners.[2] The two halves roughly correspond to the two different periods of ownership and operation which characterize the mine's history. The first owners were the Detrick and Bradley families, who operated the mine under the name "Cabin Branch Mining Company" during the earlier period, 1889 to 1916. The American Agricultural Chemical Corporation (for convenience, this nomination will refer to the company as "AACC") bought the mine in 1916, building new structures and opening at least one new shaft. The AACC operated the mine until 1919 or 1920.[3]

Detailed Description

Moving from east to west, the site today clearly reflects the two or more successive layers of operation. Maps produced by the AACC in 1916 and 1919 show these layers, and probably depict most of the structures ever built on the site (figures 5, 6 & 7; figure 8 shows contributing and non-contributing features).[4]

The Cabin Branch Mining Company first worked the mine from a shaft or shafts sunk northeast of the North Branch. The company later sank an inclined shaft at the top of a hill south of the stream and built a large mill and other structures next to it. This cluster of buildings and shaft may reflect the increased level of operations which are said to have occurred in the early 20th century.[5] At the western end of the site are the remains of the far larger operation of the American Agricultural Chemical Company, which had a full complement of mine structures, including crusher house, mill, mechanical and support buildings, numerous rail lines, etc. Foundations of most of these buildings remain. Slag and pyrite can be found scattered throughout the site.

The site will be described in these two separate sections, which correspond to the routes of modern park roads and trails. The first section discusses the Cabin Branch Mining Company site, the eastern half; the second section describes the American Agricultural Chemical Company site, the hilly, heavily wooded western half of the site.

Eastern Half of Site: Cabin Branch Mining Company

The eastern or Cabin Branch Mining Company side of the mine site has few visible remains: the stone walls of a commissary building, the partial foundation remains of an old mill and another, smaller structure, and seven capped shafts, or presumed shafts.[6] Some remains could still be extant in the surrounding woods, and some buildings may still stand on private property.[7]

Steep hills rise south of the North Branch of the Quantico. Along the stream are flat "floodplains" or gravel deposits, probably resulting from mine activity, which caused stone and silt to be deposited in the stream bed. The site was formerly used as a dump and a gravel pit.[8] North of the stream the land is flatter, with small fields or clearings along the woodland edge (figure 9). The park boundary runs just east of this end of the site, and the North Valley Trail runs through it.

The 1916 AACC map shows that three large houses occupied by mine officials overlooked the mine site from hills to the east (one of the houses can be seen in the distance in a photograph from 1934, figure 10), land which is today outside of park boundaries. On level ground near the stream were several clusters of buildings which together formed a small, widely spread company town. At the entrance to the mine community, a commissary surrounded by sheds occupied the land between the road and the main rail line. The road and the track continued beyond the commissary to form an "L," delineating a rough square, in the center of which was a mine shaft. Several small dwellings, along with a store (labeled "old store" on the map) and various sheds, stood by the road. Farther west near the creek, between two rail lines, stood a machine shop, sawmill, storehouse, and other structures.[9] Midway between the residential area and the sawmill stood a freight house and an oil house. Railroad tracks ran throughout the complex, linking the different buildings. At the end of one spur track north of the machine shop was the coal trestle, leading to the water tower.

Today, the Pyrite Mine Road (Non-Contributing Structure) which leads to the site ends in a graveled parking area next to the ruins of the commissary (Contributing Structure; figure 11. See Appendix B for dimensions of all remaining building foundations). The commissary stands east of the parking area, at the beginning of the North Valley Trail. The building stands on a concrete foundation. The 8'-high concrete walls of the first or basement level are flush with the ground on the west elevation, which was apparently the rear; on the east or front elevation, the ground is banked up to the top of the basement level. In front of the east elevation are six concrete piers, which likely once supported a porch. There are similar piers on the north side. The west elevation has three openings, including two window openings in the left and center bays and a door opening in the right bay. Concrete buttresses at the corners and between the openings support this wall. The window openings are 3.5' long x 2' high and contain remnant wood formwork and iron stabilizing bars.[10] Both side walls retain the bottom halves of window openings. The floor level is sunk about a foot below ground level. A sunken entry path flanked by narrow stone curbs leads to the entrance.

It was in this eastern area that park management performed extensive reclamation work in 1995 (see Significance Section for details). The work included stabilization of existing shafts; depressions which were presumed to be shafts were partially excavated, filled, and capped with thick layers of concrete (figures 12 & 13). A device was installed in each cap, consisting of a chain which runs through the concrete and up a pipe which terminates in a U-shaped elbow; the chain runs out the pipe and is attached to a weight. Park staff can pull the weights to see if the chains are slack, indicating a shaft cap has not been disturbed. Four steel and concrete posts mark the boundaries of each shaft opening.

The Pyrite Mine Road, an old fire road, leads to the site. It crosses the stream on a bridge, designated by a surveyor with the Historic American Engineering Survey (HAER) as the "North Branch Quantico Creek Bridge" and described as a low Pratt pony metal truss bridge with stone abutments and a wood deck, about 53' long and 13' 10" wide (Contributing Structure; figure 14).[11] The Pratt pony metal truss was a common American bridge type of the late 19th and early 20th centuries; the HAER survey cites the bridge as dating from 1889-1916. The 1916 AACC map shows a so-called "swinging bridge" located north of the current bridge; this term could refer to either a suspension bridge – unlikely over this small creek – or a bridge which pivoted around a central point to permit passage along the watercourse. The swinging bridge no longer exists.

A boardwalk (Non-Contributing Structure), built in 1999 as a result of the reclamation project, is made of recycled plastic boards and runs from the gravel parking area (Non-Contributing Site) through the site of the saw mill. The boardwalk follows the route of an existing road, which itself probably followed the route of the mine's primary railroad track, and also, perhaps, the branch track which had led to the coal trestle and water tank.[12] North of the boardwalk is a large clearing surrounded by woods, a "hot spot" where the soil still has high concentrations of lead, arsenic, and perhaps other toxic chemicals from mining operations (see figure 9).[13] Many native plants, including trees, still will not grow here. According to the 1916 map, this area was the more residential part of the early mine village. In the center of the clearing, a mine shaft – probably the original mine shaft – is visible (Contributing Structure), now capped and with its four corners marked by steel-and-concrete posts.

On either side of the boardwalk, running perpendicular to the stream, can be seen old tailings piles (figure 15), small hummocks covered with dirt and pine needles from which Virginia pine trees grow. These particular piles were left undisturbed during the reclamation work; others were regraded, treated with lime, covered with soil, and replanted.[14] Stormwater channels run between the piles, carrying runoff into the stream.

The boardwalk terminates in a small deck, which provides visitors with a clear view of the refaced, revegetated hill south of the stream on top of which a large milling complex once stood. (A short length of twisted steel or iron train track lies on the ground at the end of the boardwalk.) An inclined shaft was sunk at the top of the hill and a large mill complex stood nearby. This shaft may be the inclined shaft described by R.H. Painter in 1905 (see Significance Section).[15] Two photographs dating from about 1907 (figures 16 & 17) show this mill in full operation, with many interconnected structures on top of the hill, a water tower rising behind, and numerous chutes leading down the slope to the flat land along the stream. The 1916 AACC map shows a number of buildings at this location, including a mill (which it calls the "old mill"), a pit head, an inclined shaft, another "old shaft," and ore bins, with the notation: "These buildings are abandoned but remnants are as shown." These buildings were likely oriented to face east, toward the older mine site. The hill was probably significantly larger at this time; apparently, much of its face has been eroded away (figure 19 [there is no fig. 18]).[16]

Today, several remnants of the complex can be found. A large chunk of concrete foundations, probably of the mill (Contributing Structure; figure 20), protrudes from the crown of the hill. Nearby is the head of the old inclined shaft (Contributing Structure; see figure 20).[17] At the foot of the hill is a shaft, which was probably a "dewatering" shaft, pumping water out of the mine (Contributing Structure; figure 21). Both shafts are capped, with four corners

marked by posts and the pipe-and-weight system rising from the center. In addition, NPS archeological excavations in 1995 revealed a dry-laid stone foundation (Contributing Structure; figure 22) behind the site of the mill. Apparently, a small wooden mine building of unknown use stood there; no such building appears on the 1916 map, but a small structure in apparently the same location is visible in one of the 1907 photographs of the mine.[18] The foundation stands directly on the ground and likely supported a wooden floor.

Western Half of Site: American Agricultural Chemical Company

The ruined foundations of many of the buildings constructed by the American Agricultural Chemical Company lie within the deciduous woodland which covers the western half of the site. The Cabin Branch Mine Trail branches off from the Pyrite Mine Road and runs down a steep hill, leading to a level area where there is a small clearing in the woods (figure 23). The trail passes along its western side and continues further down the slope. Thick brush, overgrowth, and fallen trees make walking in this clearing difficult. Much of the clearing seems to be occupied by a raised mound, in the center of which is a capped mine shaft, with four steel-and-concrete posts marking each corner of the shaft site and the pipe-and-weight system rising from the center (Contributing Structure; figure 24). This was the main shaft worked by the American Agricultural Chemical Company. The headframe would have stood over the shaft or pit head, sheltered by the head house. A few large, broken pieces of concrete (Contributing Structure; figure 25) are visible at the north edge of the clearing, on the edge of the surrounding woods; these are probably the foundation remains of the headframe or head house.[19]

The trail continues from the northeast side of the clearing downhill to the east, following the route of the main train track. In the woods to the east can be seen the foundations of the crusher house (Contributing Structure; figure 26), a rectangular concrete pad with protruding metal pins around its perimeter. Initial crushing of the ore to a uniform size was carried out here. A trail leading through the woods east of the crusher house foundations follows the route of the old conveyor house, marked by a series of 21 concrete footings. The conveyor house was a structure which protected the conveyor belt, which moved ore from the crusher house to the mill. The footings were apparently arranged in 13 pairs, though some now stand singly (figure 27).[20] Some of the square concrete footings still have iron or steel rebar projecting from the center of the top; others have had the rebar pins cut off to prevent injury to visitors (figure 28). The mine's large earthen reservoir (Contributing Structure; figure 29), still filled with water, lie within 10-20 feet north of the Pyrite Mine Fire Road. One square concrete structure adjoins it.

The trail which follows the route of the footings runs downhill about 200 feet to a series of concrete building foundations, set into the terraced hillside above the creek. These include the remains of the large mill building (Contributing Structure; figures 30 & 31), the smaller classifier house which adjoined it (Contributing Structure; figure 32), and – perpendicular to these and parallel to the stream – the long, narrow concentrate bin, where ore was stored (Contributing Structure; figure 33).[21] All the foundations are concrete and define the perimeter of the building. The ruins of the classifier house are filled with water.

A short distance to the southeast along the major trail, the Cabin Branch Mine Trail, is a second group of ruins (figure 34), the distinct, largely intact foundations of a large building which included the machine shop

(Contributing Structure; figure 35), the engine room (Contributing Structure; figure 36), and the boiler room (Contributing Structure; figure 37). The foundations of these separate yet adjoining structures or rooms together form a large rectangular footprint. Concrete foundations define the perimeter of each room. Within the separate footprints are concrete foundations or pads of various configurations, with raised and depressed levels and protruding metal pins and bolts. A contemporary wooden split-rail fence (Non-Contributing Structure) separates runs for a short distance along the north or downhill side of the main trail, separating the trail from this complex of structures.

All of the AACC structures now lie within a mixed deciduous woodland. The hillside parallel to the stream was cut into terraces, from some distance above the buildings down to the level of the stream. It appears that the machine shop, boiler room, and engine room stepped down, each occupying its own terrace.

Along the terraces, several spur rail tracks ran to different buildings within the AACC complex. The main track occupied the highest terrace and ran from the incline hoist shed at the far west end of the site to the east side, the older Cabin Branch Mining Company site, where it joined the old rail route to Dumfries.[22] Spur track 1 led to the machine shop. Among the spur tracks stood various small buildings (see maps, figures 6 & 7). Spur track 2 led to a long, narrow locomotive shed just east of the engine room. Spur track 4, the longest spur, ran along the stream to the concentrate bin and conveyor house.

The routes of the main track and of some of the spur tracks are still clear; in fact, current pedestrian trails through the woods appear to follow some of these routes, including the main track, the Cabin Branch Mine Trail (Contributing Structure; figure 38), and spur track 4, the North Valley Trail (Contributing Structure; figure 39).

The North Valley Trail leads back along the stream to the foundations of the concentrate bin. The view up the slope from this vantage point, past the concentrate bin ruins to those of the boiler room, engine room, and machine shop above, clearly shows the terracing of the hill (see figure 33). Further down this trail can be found stone waste dumps, small hummocks of regular size overgrown by vegetation (figure 40).

The main Cabin Branch Mine Trail continues east. At one point along its route is a large scatter of irregular, worked stones (Contributing Site; figure 41) extending about 10' in length and crossing the path; these are probably the ruined foundations of one of the historic dwellings for black workers. Six such structures are shown on the 1916 map, labeled "Old Colored Quarters" and arranged in a straggling line north of the main track.[23] It is not known how many men occupied these dwellings; they were likely built by the Cabin Branch Mining Company and then, possibly, used also by the American Agricultural Company.

Soon after passing this stone pile, the trail passes out of the woods into the large clearing along the stream, below the hill on which the old mill once stood. Here visitors get a clear view of the older Cabin Branch Mining Company site at the far end.

Endnotes

[1] Information from Carol Pollio, Chief, Natural Resources, Prince William Forest Park, during tour of mine site on July 6, 2000

[2] Park staff have traditionally referred to the eastern half of the site, on the north/northeast side of the stream, as the "family side," and to the western half – on the south/southwest side of the stream – as the "company side." Information from Carol Pollio, tour of site, 6 July 2000.

[3] An internet search revealed that the American Agricultural Chemical Company, under the name "Agrico," still exists as a division of Conoco Corporation. I made a couple of unsuccessful attempts to locate Agrico archives, including a call to a sales representative for Agrico phosphate fertilizer products. The University of North Carolina and the University of Southern Florida both have documents or photographs pertaining to Agrico activities but no material relevant to the Cabin Branch mine.

[4] This can be presumed because of the map's date and because many of the structures depicted on it are labeled "old."

[5] Mountjoy, writing in 1978, says this occurred in 1908, though Painter, writing in 1905, describes the complex workings of a very busy mine, and Watson, in 1907, reproduces a photograph of this mill in full operation. Watson's photograph is nearly identical to one in the park's Curatorial Collections (copies of which are also in the Cabin Branch Mine file in the collections of Historic Dumfries). See Robert H. Painter, "Pyrite Mining in Virginia" (*Engineering and Mining Journal* LXXX, 1905): 148-149 and "Pyrites Mining and Milling in Virginia" (*Engineering and Mining Journal* LXXX, 1905): 433; Thomas Leonard Watson, *Mineral Resources of Virginia* (Virginia Jamestown Exposition Commission, 1907): 190-207; and A. L. Mountjoy, "The Cabin Branch Mine" (Ts of talk, 2 November 1978; copy in Curatorial Collection, PRWI).

[6] The question of how many mine shafts there are on the site is difficult. During the 1995 reclamation, the park excavated 13 depressions. Seven were determined to be shafts. An eighth, along the Pyrite Mine Fire Road, was thought to have been a ventilation shaft, because while there was a change in soil, there was no evidence of any structural bracing. There is in addition an uncapped shaft on adjacent private land. (Information provided by Carol Pollio to Kay Fanning, review comments, 12 September 2000.)

[7] Marilyn Finley in 1973 noted a couple of mine houses remaining on Mine Road, along which the main train track ran down to Barrow Point. See Marilyn Finley, "Here Longer than Most..." and "A Sewerless, Waterless World on Old Mine Road" (*Potomac News*, 3 July 1973): A-4+; copies in Curatorial Collection, PRWI.

[8] In February 1990, an NPS mining engineering technician conducted a survey of the site, and reported that it had been used as a "municipal dump"; see John E. Burghardt, Mining Engineering Technician, Mineral Resources Section, Mining and Minerals Branch, Land Resources Division, to Chief, Mineral Resources Section, Memo, 15 February 1990, Re: Trip Report, Investigation of the Abandoned Cabin Branch Pyrite Mine; copy in Curatorial Collection, PRWI. With a mine of this size, there almost certainly would have been huge piles of tailings throughout the site. What has become of this material is not known; the site is identified as a "gravel pit" on USGS topographical maps, and probably much of the waste stone and tailings were used for roads, building foundations, and other such projects in the park and the surrounding area; information from Carol Pollio to Fanning, review comments, 12 September 2000.

[9] Burghardt, the NPS mining engineering technician, noted that the foundations of the sawmill still existed. No evidence is visible today. See Burghardt, Trip Report, Curatorial Collection, PRWI.

[10] Much of this description was taken from the Virginia Historic Landmarks Commission Survey Form prepared by Christine Madrid (List of Classified Structures [LCS] field notes on Prince William Forest Park, NCR Library, 7 April 1996).

[11] Mary Kendall Shipe, "North Branch Quantico Creek Bridge" (HAER No. VA-50, 1988; downloaded from Library of Congress web site, memory.loc.gov/ammem/hhhtml/
hhhome.html.

[12] Author's conversation with Carol Pollio, 14 September 2000.

[13] Carol Pollio believes the Cabin Branch Mining Company may have processed minerals, perhaps copper (which is often present in pyrite ore) on this site; tour with Pollio, 6 July 2000.

[14] Ibid.

[15] Painter, "Pyrite Mining in Virginia."

[16] Pollio relayed information given to her by a former CCC worker and park ranger, Joe Hebda; tour with Pollio, 6 July 2000.

[17] Pollio noted that when the shaft was opened during reclamation work, tracks leading into the mine were visible, and also a large stone facing in front of the shaft opening; tour with Pollio, 6 July 2000.

[18] See Robert C. Sonderman, "Archeological Investigations of (44PW967) for the Cabin Branch Mine Reclamation Project, Prince William Forest Park" (1996).

[19] In 1990, Burghardt found beams from the headframe in this area; see Burghardt, Trip Report, Curatorial Collection, PRWI. Burghardt also found rails and cable "at the head of the old incline."

[20] In the early 1990s, a park volunteer, Morris Jones, prepared a detailed site plan showing the remaining foundations of the AACC mine buildings; see Morris Jones to Riley, Memo and map, "Pyrite Mine Survey" (March 1991; copy in Curatorial Collection, PRWI).

[21] In 1990, Burghardt discovered the footings of the conveyor which ran from the mill to the concentrate bins; these were not readily visible during the author's summer surveys.

[22] A comparison of the 1916 and 1919 maps suggests that after the new main shaft was opened, the old mill continued in operation for a time. The rail line was extended and ore was transported from the pit head at the west end down to the mill. At some point, the new, substantially larger mill was built downhill from the main shaft, and ore was then moved via conveyor, passing over the main track. It appears the incline hoist shed at the end of the track that ore cars may have also been pulled along this track by cable.

NPS Geologist Bob Higgins told the author that there is a 1919 report at National Archives II which inventoried existing rail lines; however, he did not report the name of the report nor extent of the area it covered. Bob Higgins to Fanning, e-mail, 20 September 2000.

[23] Pollio says the same local stone was used for other building foundations found within the park which date from before the park was established; tour with Pollio, 6 July 2000.

8. Significance Section

Statement of Significance

The Cabin Branch Pyrite Mine Historic District is significant under National Register Criteria A and D.

Criterion A: Property is associated with events that have made a significant contribution to the broad patterns of our history.

The Cabin Branch pyrite mine was the major supporting industry of the former colonial port city of Dumfries, Virginia, for about 30 years. Over this period, hundreds of local residents depended on the mine for their livelihood. The mine produced pyrite ore, which was shipped to processing plants to yield sulfuric acid. While no structures remain intact, there are extensive foundation remains *in situ*, giving clear evidence of mine operations, such as the relation between mine shafts, buildings, conveyors, railroads, and roads. In addition, mine activities permanently altered the existing natural environment. While the landscape of the site may or may not have been disturbed by small-scale farming over the 200 years previous to 1889, the intensive mining activities of the next 30 years wrought lasting changes to the landscape through excavation and the deposition of large piles of waste material removed from the mine. In spite of the reclamation project undertaken by Prince William Forest Park in the mid-1990s, which resulted in the stabilization of the land and soils, many changes to the topography and vegetation will in all likelihood remain permanent. The site can be expected to always bear clear evidence of mining activity and therefore to remain an industrial landscape.

Criterion D: Property yields, or may be likely to yield, information important in prehistory or history.

The physical remains of the Cabin Branch pyrite mine include the foundations of at least 12 buildings, railroad tracks, approximately eight mine shafts, and extensive underground workings. Artifacts, including tools, rails, and hardware, are still found on the site today. The ruins have been little disturbed since the mine closed in 1920.

Statement of Archeological Integrity (included on recommendation of National Register staff)

The archeological integrity of this district is probably good or high. The entire site has been essentially abandoned since before the federal government acquired the land in the 1930s (though it appears the community used the eastern half of the site as a dump, and used the large amount of waste rock and tailings left as a gravel pit). Aboveground material from structures and waste and tailings piles was probably removed and reused in the vicinity for other structures, roads, and so forth. Before the reclamation work of the mid-1990s, shafts filled with earth were subject to occasional settling; some regularly refilled with soil. Many foundations remain visible at ground surface. Given the lack of activity at the site, others could well remain below ground, covered by soil and other debris.

At least six African American dormitories stood on the site, and there is some indication on the ground of the foundation remains from at least one of these structures. The site therefore has a high probability of being able to reveal information about African American life and work. Many descendants of these workers, and of white employees as well, still live in the immediate area, and archeological study here could supply important information about a still-thriving community, supplementing other recent studies and the recollections of local residents.

This author conducted two site reconnaissance visits, photographing visible remains and looking for indications of other remains. Archeological study of the site has been limited. In July 1995, in conjunction with the reclamation work, NPS/NCR archeologist Robert Sonderman investigated the foundation remains of a single small structure in an area which was to be used for soil "borrow" – providing fill for shafts and stabilization. Sonderman walked parallel transects of the entire project area and of the borrow area. He documented the foundation with photographs and maps and made three small test excavations. See Robert C. Sonderman, "Archeological Investigations of (44PW967) for the Cabin Branch Mine Reclamation Project" (1996). Currently, the Cultural Resource Group of Louis Berger, Inc., is engaged in a four-year archeological research study at Prince William Forest Park, but at this time they have no plans to conduct field studies or other research on the Cabin Branch pyrite mine. See The Cultural Resource Group, Louis Berger & Associates, Inc., "Archeological Identification and Evaluation Study of Prince William Forest Park, Prince William County, Virginia, Draft Survey Plan" (January 2000).

The following are sample archeological questions which might be addressed in future archeological research:

Land Use
How did natural features affect the growth of the physical plant?
What effect did the activities here have on the landscape, on its topography, water, and vegetation?

Labor
What information can this site convey about historic mining activity?
How many people worked here?
Was there actually a strike? What other sorts of labor conflicts may there have been?
What were working conditions like? What is known of them? Can working conditions be interpreted from the site?

Mine Operations and Technology
What were the different phases of construction and production? Can they be seen in the site?
Can mining and milling procedures still be understood from site remains?
What minerals other than pyrite may have been excavated here?
Were any refining operations carried out here?
Other than sulfuric acid, what were the pyrite and other minerals (if any) used for?

Daily Life
How was the mine tied to surrounding communities?
Can the site provide evidence of daily life?
Who lived in mine housing? Did only African American workers live at the mine?
What were living conditions like? What is known of them? Can working conditions be interpreted from the site?

Integrity Criteria:

Location The mine remains still occupy the same location. There has been little disturbance to the site since the mine closed, other than hillside erosion, the development of a mature woodland in the west, and the limited regrading carried out on the eastern side in the mid-1990s.

Design Though no structures exist, other than the partial walls of the commissary, the remaining foundations indicate the footprints of most of the buildings built by the American Agricultural Chemical Company. A few foundations of the earlier Cabin Branch Mining Company buildings also remain. Altogether, the extensive system of remains and mine shafts indicate the overall layout of the mine, and the buildings' relations to one another, to the mine shafts, and to significant landscape features, such as hills, the creek, and the road.

Setting In many ways, the setting today resembles the original setting. The eastern half of the site remains an open clearing, though there have been some topographical changes made as a result of the 1990s stabilization project, and the area has been revegetated after decades of remaining largely barren. The western half of the site, which must have been cleared for mine operations, is now wooded, though the topography has not changed. Though its course may have altered slightly over the years, the North Branch of Quantico Creek still runs through the site.

Materials Few actual structures remain, but the extensive foundations illustrate that typical construction included permanent foundations with impermanent wood superstructures.

Workmanship Workmanship is somewhat evident in the foundation remains.

Feeling With minimal interpretation of remaining features, the site can evoke its historic activity.

Association The lasting effect of mine activities and construction on vegetation and topography still clearly indicates that this was an industrial site.

Statement of Landscape Integrity

The Cabin Branch pyrite mine site in Prince William Forest Park is still an industrial landscape, 80 years after the mine closed and almost 70 years since the park was created. While a deciduous woodland covers half the site, and the open, eastern half has been regraded and replanted, the landscape bears clear evidence of the decades of hard labor performed here, which changed the topography, and left chemical waste in the soil and piles of mineral waste on the ground.

In the eastern half of the site, reclamation and revegetation were carried out in the mid-1990s (figures 12 & 13). Different sections were seeded with some combination of the following herbaceous plants: redtop, reed canarygrass, common Bermuda grass, *Sericea lespedeza* "appalow," KY31 fescue, annual and perennial ryegrass, red clover, white clover, ladino clover, deertongue, birdsfoot trefoil, orchard grass, and weeping lovegrass. This area is heavily overgrown by the invasive non-native plant, *Lespedeza cuneata* (Chinese *lespedeza*).[1] One large clearing north of the stream still has highly acidic soil, which determines what can and cannot grow there. It appears that stone waste from mine operations was deposited along the stream, forming an artificial floodplain on either side. On the north side of the stream, tailings piles are still visible as a series of regular long, narrow, earth-covered hummocks, on which virtually the only plants growing are Virginia pines. The steep hillside on which a large mill complex formerly stood seems to have had its face eroded or otherwise destroyed, judging by descriptions, historic photographs and maps, and its relation to remaining ruins.

The western half of the site is covered by woodland and appears more similar in character to the rest of the park. As described in the draft "Environmental Assessment for the Cabin Branch Mine" (1995), the dominant tree species include white oak, red oak, tulip poplar, American beech, and Virginia pine, with an understory of dogwood, redbud, mountain laurel, and American holly. The woodland also includes such uncommon species as butternut, bigtooth aspen, black walnut, sweetbay magnolia, and eastern hemlock. However, this half of the site also bears clear signs of industrial operations, with numerous concrete foundations and a terraced hillside.

Even though many natural features – such as the stream, the hills, and of course the pyrite deposit itself – led to the mine being established here and subsequent development of aboveground workings, these cannot be readily assessed as contributing features. Their significance, however, should be noted.

Though the mine has long since been abandoned, the landscape today is still disturbed, and will never resemble a natural site. Human industrial activity has irrevocably changed its character.

Description of Park Location

Prince William Forest Park, in Triangle, Virginia, lies just west of the historic town of Dumfries and 32 miles south of Washington, D.C. (Figures 1 & 2) Its perimeter is largely defined by Route 234 on the north and Route 619 on the south, and I-95 runs along a section of its eastern border . Some areas of private development remain around its perimeter. The park was originally created by Congress in 1933 from so-called "submarginal" farm lands as the Chopawamsic Recreational Demonstration Area. Today, the park contains the largest intact piedmont forest in the National Park system. It provides essential habitat for many native species of plants and animals. Within the park are

found such threatened and rarely seen plant and animal species as the small whorled pogonia, the star-nosed mole, and the timber rattlesnake.[2]

The park straddles two physiographic regions, the coastal plain on the east and the piedmont plateau on the west. The coastal plain's alluvial soils and low rolling hills meet the higher, rocky ground of the piedmont plateau at the fall line, where faulted rocks create falls and rapids in streams and rivers. The park lands have been described as deep narrow stream valleys separated by steep ridges.[3]

The park covers over 18,000 acres, which encompass most of the drainage of Quantico Creek and its tributaries, the North and South Branches. At Dumfries, Quantico Creek widens out into a broad mouth and three miles further east drains into the Potomac River. This natural harbor gave Dumfries a brief period of prosperity in the 18th century as a river port, but the harbor has long since turned to marsh as a result of siltation caused by many decades of poor farming practices. To the south, along the drainage of Chopawamsic Creek, is a Special Use Permit area of 4682 acres, which includes a 400-acre backcountry camping area and is surrounded by Quantico Marine Base. This area was the subject of a long-running jurisdictional dispute between the National Park Service and the U.S. Navy. Most of the issues were resolved in a 1998 agreement signed by the park superintendent and the Commanding General of Marine Corps Base Quantico, but the agreement needs legislation to be placed into effect.

Prince William Forest Park today is a sanctuary protecting native plant and animal communities. Park staff offer interpretation of park resources, and help to foster appropriate land use in surrounding areas.[4] They maintain 37 miles of trail and a wide variety of camp sites. Over the last 50 years, only a small number of structures have been built – including a visitors' center, an environmental education center, and restrooms, and a 12-mile scenic loop drive – in order to maintain the atmosphere of an undisturbed woodland.

Historical Context

Throughout the 19th century and into the 20th Dumfries remained marginal, an area of poor lands and small subsistence farms. Alexandria and Fredericksburg grew as Dumfries declined. The population of Prince William County fell, from 11,615 in 1790 to 9,320 in 1830, and the county court was moved from Dumfries to Brentsville in 1822. Further economic depression afflicted the county during the middle decades of the 19th century. The decline of Dumfries made the marketing of crops and other goods difficult. Local residents subsisted through odd jobs, the occasional sale of goods, and fishing.[5]

Though no major battles were fought around Dumfries, the Civil War brought widespread devastation to the region, and the destruction of woods, roads, farms, and structures.[6] The area between Dumfries and Occoquan was first occupied by Confederate troops and then, from the spring of 1862, by the Union army. Civil War maps of the park area show houses scattered along roads and grouped at crossroads. Small settlements typically included a church, a few houses, and some basic services, such as a blacksmith or wheelwright.[7]

In spite of the difficulties, during the war many local families remained on their lands, though it is not clear whether farms in the park area were inhabited or abandoned. Recent research (June and July 2000) indicates that the

park area did not suffer greatly from monoculture agricultural practices; because of the steep, hilly terrain, the lands may not have been farmed intensively.[8]

Typically, however, in the war's aftermath, agricultural lands around Dumfries continued to decline. Scrub woods grew up on burned fields and the marsh in Quantico Creek expanded. Residents of the park area continued to practice primitive, small-scale subsistence farming, supplemented by occasional outside labor and, from the 1870s, increasing exploitation of the woods. People cut trees for railroad ties, barrels, and lumber, a practice which continued into the 20th century. While providing a livelihood, local lumbering practices further degraded the land and eroded its topsoil.[9]

By the early 20th century, at least two separate communities had developed within the future boundaries of the park (figure 42). Joplin was a small, largely white community to the northwest, centered on the intersection of Route 619 with a road which led to a mill. Most Joplin residents had lived in the community since before the Civil War, and many people living in the surrounding area were associated with Joplin.[10]

The second community, known as Hickory Ridge, was a denser settlement located along the North Orenda and Pyrite Mine Fire Roads, east of Joplin. Hickory Ridge had both white and black families, though the leading families were black. Hickory Ridge was a separate community from Batestown, a free black community which had formed after the Civil War and was located east of Hickory Ridge, along Mine Road. The two communities were closely related, and, in fact, Hickory Ridge is said to have been an extension of Batestown. Batestown still exists today as part of Dumfries, and many of its residents are families who lived in Hickory Ridge before the federal government acquired their land in the 1930s and 1940s.[11]

Families in Joplin and Hickory Ridge were largely self-sufficient, supporting themselves with what they could raise on their lands or harvest from the surrounding woods. Families shopped in the small town of Triangle, south of Dumfries. There were also stores in the communities, some located in private homes; in the 1920s and 1930s, five different stores could be found along the north-south road which ran through the central part of the park lands. The communities worshipped at their own churches, different from those attended by residents of Dumfries.[12]

Houses in Hickory Ridge, Batestown, and surrounding areas tended to be widely spaced along dirt roads. They were typically two-story frame structures with a kitchen, a dining room, and perhaps as many as three or four small bedrooms. While residents usually farmed some of their land or raised garden produce for their own consumption, much of the land surrounding homes was not cultivated. Residents drew water from wells or streams and lit their homes with kerosene lamps. Community life was centered on church activities. After the mine was opened in 1889, many new residents immigrated to the area from northern states to work in the mine; many of the newcomers also bought land and maintained small farms. People earned additional money from harvesting honey, collecting bounties on hawks and crows, and bootlegging.[13]

Cabin Branch Pyrite Mine

Characteristics and Uses of Pyrite

The common sulfide mineral pyrite or "iron pyrite" – FeS_2, also known as "fool's gold" – is found throughout the world in a wide range of geologic formations, often in association with coal, gold, and copper.[14] Pyrite occurs in both crystalline and granular forms. As a crystalline structure, it forms as cubes and modified cubical shapes, such as octahedrons. Crystalline pyrite is coarser than granular, which is often fine-grained and essentially pure pyrite. In its pure form, pyrite is composed of 46.6% iron and 53.4% sulfur.

While little information is available on the use made of the pyrite ore extracted from the Cabin Branch mine, most was probably used in the production of sulfuric acid. Sulfuric acid is so important as a chemical reagent that it has long been "considered an excellent indicator of a country's industrial well-being."[15] Historically, sulfuric acid has been used in the manufacture of a wide range of products, from glass, soap, and bleach to textiles, paper, and medicines; for the cleaning of sheet metal and the refinement of precious metals; and in the manufacture of fertilizers and gunpowder. Pyrite has long been one of the major sources for sulfuric acid. Another common derivative of pyrite is ferrous sulfide or copperas, used in the production of iron salts, for water purification, and to treat anemia.

In the 19th century, a huge market for pyrite developed among industrialized nations after the invention of inexpensive methods for extracting sulfuric acid from the ore; by 1880, pyrite had become a more economical source for the acid than crude sulfur. The basic process involved heating or "roasting" the crushed pyrite ore in a chamber to which air was introduced. At high temperatures, the sulfur in the ore would vaporize and join with the oxygen to form sulfur dioxide. If the ore had a sulfur content of 30% or more, heat resulting from the oxidation of the sulfur would perpetuate roasting without added fuel. The sulfur dioxide gas was then captured and purified into sulfuric acid.[16]

Massive amounts of sulfuric acid were necessary for processing raw materials in industry. For example, one pound of sulfuric acid was required to produce a gallon of kerosene or a pound of phosphorus fertilizer. Between 1882 and 1902, the U.S. mined less than 4% of the amount of pyrite it consumed. American manufacturers had to rely on importing enormous shipments of the ore from foreign countries, among them Spain, Ireland, and Canada.[17]

Pyrite was measured in "long tons" of 2400 pounds. During its years of steady production, 1908-1920, the Cabin Branch Mine produced about 200,000 long tons of pyrite, which altogether sold for over $1,168,513. Since sulfuric acid is an important ingredient of gunpowder, during World War I the pyrite taken from the Cabin Branch Mine was deemed so vital to the war effort that its approximately 300 miners were "exempted from active duty."[18] The price of pyrite in 1916, just before American entry into the war, was $5.64 per ton. By 1917 the price had risen to $15.75, and in this year Virginia produced more pyrite than any other state, 37% of U.S. production.[19]

After World War I, American production of sulfuric acid dropped abruptly. It declined again during the Depression before rebounding during the Second World War and in subsequent years. Today, sulfuric acid is still commonly derived from pyrite.[20]

Louisa County Mines

In the early 20th century, the largest U.S. deposits of pyrite could be found in Massachusetts and Virginia, where a gold-pyrite belt extended northeast/southwest through Prince William, Stafford, Spotsylvania, and Louisa Counties, with the richest, largest deposits occurring in Louisa County, along Middle Contrary Creek. From the early 19th century, mines were opened along this belt for gold and iron. Over the decades these were depleted, and from about the 1880s, the mines were increasingly worked for pyrite alone.[21]

The Virginia pyrite deposits formed immense lenses, which conformed to the structure of the surrounding country rock, generally crystalline schists. Pyrite ore typically increases in quantity and quality with depth.[22] In the early 20th century, most of the Louisa County lenses were determined to be several hundred feet long – one extended 700' – and measured up to 60'-80' thick, while the lenses in the Cabin Branch mine tended to be longer and thinner. In both counties, the lenses ran in generally the same direction – they had the same "strike" – but possessed different dips within the strike.[23]

The Cabin Branch Mine was the only pyrite mine in Prince William County. Louisa County, located about 50 miles southwest of Prince William, had three mines, all opened in the 19th century: the Arminius Mine, the Smith Mine, and the Sulphur Mines.[24] The three Louisa County mines were located a short distance from Mineral City on the Chesapeake and Ohio Railway. They had also been worked for copper and, from as early as 1834, for iron, which was extracted from the "gossan" or mineral cap covering the pyrite ore. By the 1880s, they produced only pyrite (the Arminius mine produced pyrite alone from 1865). The ore from all three mines had a high sulfur content and was used solely for the production of sulfuric acid. The Louisa mines had multiple shafts and many levels, and large physical plants for both mining and milling operations. Only friable ore was milled. Lump ore was broken, sorted, and shipped.[25]

Fewer than ten states in the U.S. produced pyrite, and in the early 20th century the Louisa County mines were responsible for about half of the country's total production of pyrite. Their modern plants had the capacity of producing 100,000 to 125,000 tons (presumably long tons) per year. The pyrite was milled at the mines, shipped first to Mineral, and then to Richmond, Philadelphia, or New York for processing into sulfuric acid.[26]

The methods used for extracting the ore were similar at all the Virginia mines, though Cabin Branch required more timbering (shoring) because its lenses possessed softer walls, more cross-faulting, and a greater variation in dip. All the mines used inclined cables and cars to bring the ore to the surface.[27]

Cabin Branch Mining Company

The Cabin Branch pyrite mine, discovered in 1889 by a man named Detrick, was located near the confluence of the North and South Branches of Quantico Creek.[28] The mine became the main industry of Dumfries, the greatest boost to the town's economy in over 100 years, providing a reliable source of income to most of the families living in the area. New businesses, such as boardinghouses and saloons, opened in Dumfries to support the mine and its workers.[29]

The local or "country" rock around the Cabin Branch mine is schist containing quartz and hornblende.[30] The pyrite was a replacement rock which had flowed or precipitated into faults and pockets in the country rock, forming long lenses. Much of the ore found was a friable mass of quartz, calcite, and pyrite, while other parts were almost pure pyrite. Copper and iron may also have been mined at Cabin Branch; the 1912-1913 *Copper Handbook* records that up to ¾ of 1% copper was recovered from pyrite mined at Cabin Branch after roasting.[31] Small quantities of silver, gold, and lead have been found, though never in quantities large enough to justify their extraction.

The original owners were the Detrick and Bradley families, who formed the Cabin Branch Mining Company and operated the mine from 1889 to 1916. The company seems to have operated at least two major shafts located at the eastern end of the mine site and on top of a hill in the center; whether these were successive or concurrent is not known. Sources report that the mine was worked only sporadically until 1908, when steady production was begun. In 1916 the mine was purchased by the American Agricultural Chemical Company (AACC), which operated it from 1916 to 1920. Judging by maps the company produced in 1916 and 1919, this seems to have been a significantly larger operation than any run by the Cabin Branch Mining Company (figures 6 & 7).[32]

Deed research conducted by a park volunteer at the Prince William Circuit Court in 1992 provides a suggestive, if incomplete, history of the mine's acquisition and demise (See Appendix A).[33] The Detrick family had begun acquiring land by the 1890s, if not earlier. In April 1890, Louis F. Detrick purchased 53 acres on the North Branch of Quantico Creek. In January 1904, Louis Detrick and Peter Bradley sold a right-of-way, extending from Quantico Creek to Possum Nose Point, to the Washington Southern Railway Company. (The railway company later abandoned the right-of-way, which then reverted back to the Cabin Branch Mining Company. The park's document does not record the date of this action.)

The Cabin Branch Mining Company was incorporated on November 13, 1907, with a capital stock of $300,000. Officers included Peter B. Bradley of Boston, William H. Detrick of Baltimore, and John W. Detrick of Prince William County. On November 23, the company acquired real estate and property in the sum of $300,000 (presumably from the Detrick and Bradley families). It seems likely that before this date, the mine had been worked intermittently or slowly under the ownership and perhaps the supervision of the Detrick and Bradley families; after this time, the incorporated body began an increased working of the mine.

In April 1910, the company leased a 25-ton Class B 36" gauge locomotive from the Climax Manufacturing Company of Corry, Pennsylvania. Two years later, the company purchased 33 acres of land for $400. This was, perhaps, its final real estate acquisition. (The 1912-1913 *Copper Handbook* states that, in these years, the mine was operated by the Virginia-Carolina Chemical Company.) In 1913, William W. and Mattie E. Payne, the proprietors of the company store at this time (figure 43), sold all their merchandise to the Cabin Branch Mining Company for $6713.

In December 1915, the American Agricultural Chemical Company bought property adjacent to the mine for $320, exclusive of any mineral rights. The seller was an Edwin L. Pierpoint, who later became Vice President of the Cabin Branch Mining Company. In June 1919 [*sic*], the AACC bought the Cabin Branch Mining Company, Inc., including all real estate and personal property, for the sum of one dollar. At that time, Pierpoint was Vice President of the CBMC, and William H. Detrick was still Secretary.

This gap in the legal record is puzzling. The existing reports and anecdotal histories in the park's curatorial collection state that the AACC bought the mine in 1916, an interpretation borne out by the 1916 map, which is identified in the title block as "American Agricultural Chemical Co., Cabin Branch Mine." The AACC may have leased the mine, however, while the CBMC continued to exist as a legal entity; or perhaps the deed of sale is simply missing, and the June 1919 deed reflects only the purchase of the CBMC's remaining property.

In any event, on January 25, 1922, two years after the mine ceased operations, the Cabin Branch Mining Company was formally dissolved. In June 1926, the AACC sold the Cabin Branch Mine property to a trustee for a James T. Crosby for $15,000.

Working the Mine

The pyrite deposit at Cabin Branch was a huge lens, over 1000' long and 1000' wide, with an average height or thickness recorded as ranging from about 14' to 18' (in 1907, Watson described the lens as being 5'-10' thick). The lens or ore body dipped sharply to the northwest and had slight cross-faulting (figure 44).[34]

Most historical sources record the mine as having had three shafts. Whether all three were worked for the entire 31-year history of the mine, or whether perhaps two were worked first, then only one, is not clear from available information. There may well have been more shafts: the 1995 reclamation study revealed 13 depressions, eight of which were presumed to be shafts, including a dewatering shaft and one apparent ventilation shaft. Two shafts were nearly vertical, while the longest was an inclined shaft, which followed the slope of the lens; Lonsdale in 1927 wrote that it "caught the ore several hundred feet underground."[35] The inclined shaft was recorded as having been sunk to 1000' in 1907, 1800' in 1917, and to 2400' in 1920.[36] Elevators transported ore and men in the vertical shafts, while men could walk into the inclined shaft.[37] All three shafts had multiple levels.

The soft walls, faulted ore, and variable dip were all factors which determined how the Cabin Branch mine was worked. Robert H. Painter, writing in 1905, provided a thorough account of the process at that time; even though the mine is said to have been only intermittently operated until 1908, the operation he describes sounds elaborate.[38] (The 1919 AACC map represents an even larger physical plant, though probably the process was similar.)

Painter describes an inclined shaft which generally followed the ore, but often passed through slate to avoid sharp turns in the ore body. A second, vertical shaft rose at one end, "used both for a manway and for ventilation." Horizontal levels (also called "drifts") were made from the shaft into the ore body every 40 to 90 feet. There were 10 levels in all. Workers were urged to drive these levels to the end of the lens as quickly as possible. Levels were widened out into "stopes," excavations allowing for the removal of ore. There were occasional openings for ventilation.

The mine seems to have been worked from the bottom of the lens up, with openings or "break-throughs" made in the floors of successive levels, allowing ore to be loaded into cars (via chutes, if the dip of the lens was sufficiently steep) on the level below. Miners typically used 2½-inch machine drills, and sometimes hand drills for thin ore. Depending on the depth and steepness of the shaft, the ore may have been hauled out by rail, or loaded into buckets and raised to the surface. (Similarly, men are said to have walked directly into inclined shafts, and to have been

lowered into others by buckets or elevators.) Painter describes the ore as being loaded into mine wagons or "trams," which ran on rails to the shaft, where it was dumped into a conveyance called a "skip," capable of hauling about 3000 pounds, and transported to the pit head. At the surface, the ore was shifted to cars on the narrow-gauge railroad and then taken to storage bins.

The shaft itself was elaborately timbered with spruce, while the ceilings of the stopes were supported by pine timbers. A "thin rib of ore" was left in the ceilings to carry the weight of the tram track on the level above. Waste slate was stored in cribs in the middle of the stope and water was stored in sumps. When a stope was exhausted of ore, the props and ribs were removed, working from the farthest end of the lens toward the shaft. The stope was either filled with waste slate, and presumably remained level, or it was made to cave in. Huge fans and water pumps ran continuously to keep the shafts and levels clear of gas and water.[39]

Men worked in crews headed by a "blaster," who was paid according to how far his crew progressed in the course of a day. The "powderman" carried dynamite from the powderhouse to the mines; the "driller" drilled holes in which to insert the dynamite; the "mucker" loaded the ore into wagons; and the "timberman" ensured that the shafts and drifts were properly supported.[40]

Milling the Ore

Milling at the Cabin Branch mine was essentially a process of sorting the pyrite ore by quality and size, if necessary crushing and washing it until it was ready to be shipped.[41] Again, the only detailed description of the process is that written by Painter in 1905. Presumably similar operations were carried out during other periods of the mine's operation, and these likely became more complex in later years.

The primary crushing was done in the crusher house (during AACC operations, this was located directly north of the pit head). Most other processing operations took place in the mill; during some or all of the years the mine was operated by the Cabin Branch Mining Company, the mill stood on top of the hill in the center of the site, next to the older inclined shaft head (See Description Section, note 21). The AACC mill was located a couple of hundred feet downhill from the pit head, and crushed ore was moved to the mill by conveyor belt, probably with water added to form a slurry for easier transport and to control dust.

In 1905, the skip dumped the ore on a 2.5 inch grizzly, a grating of iron or steel bars set 2 ½" apart, which separated larger ore from smaller. Slate, a waste product, was sent to the dump. Oversize ore went either to the lump-ore storage bin, from which it was periodically removed for further sorting, or directly to the spalling floor in the mill. At the spalling floor the ore was spread in a thin layer and "spalled," or broken, with long-handled two-pound hammers, until it reached "burner size," when it could "pass through a 2½" ring." The resulting spall was "forked into measuring chutes" which delivered the ore to railroad cars. What little fine was left after spalling was "screened into the fine bin."[42]

Undersize ore from the grizzly was sent to a revolving screen, which had "1.5-inch round holes, through which the ore [was] worked into the pebble-ore jig." A jig was a machine which separated heavier ore from lighter by the back-and-forth motion of screens or by washing. The jig in 1905 was a "3-compartment Hartz jig fitted with No. 2

mesh, No. 8 iron-wire screens" (figure 45). The jig discharged waste; clean pebble ore, ready for shipping; and fines and middlings, which required further processing. Fines and middlings were screened. The fines were then heated, while the middlings were crushed in the roll-jaw breaker, roughing rolls, or "fine-crushing centrifugal rolls" and sent for further jigging.[43]

In all periods of operation, a narrow-gauge railroad ran through the site along spur rails, delivering coal to the boiler room, moving ore between buildings and bins, and picking up loads of ore ready for shipment. One former mine worker remembered the railroad as having run directly into the mine.[44] The main track ran six miles along Mine Road through Dumfries out to a siding at Barrow Point (also known as Barrow Siding or Possum Nose), a peninsula which extended into the Potomac River from the Virginia shore and formed the north bank of Quantico Creek (figure 46).

At Barrow Point the ore was either loaded onto railroad cars or shipped out to boats in the Potomac.[45] In 1907, the railroad ran between the mine and Barrow Point to the Richmond, Fredericksburg & Potomac Railway. The company also had access to the river: "The company also controls its own wharf on the Potomac River which is connected with the mine by the... narrow-gauge road and offers magnificent facilities for shipping by water."[46] Three small steam engines – the Dewey, the Virginia Creeper, and the Little Dinky – pulled the railroad cars (figure 47). In the mine's later years, if not earlier, the train also carried lumber cut on Barrow Point back to the mine for timbering in the shafts.[47] The train was sometimes used for recreational transportation, taking children on short trips and miners to the river to fish.

Daily Life in the Mine Community

Miners worked two shifts daily, which may have been 10 to 12 hours each.[48] The mine was kept running day and night. The day shift dug the stope and removed the ore, while the night shift removed water and waste materials. Miners' helmets had small oil lamps suspended from hooks at the front.[49]

Information on miners' pay varies widely. Typical daily pay may have ranged from $3.50 to $4.25. A former miner recalled the American Agricultural Company paying miners $3.50 and timber crews $2.75 per day in 1920, though in light of other reports, these figures seem low.[50] During some periods, at least, of the mine's operation, boys earned 50 cents a day sorting ore.

During its peak in the later 1910s, the mine employed somewhere between 200-300 people. According to the *Copper Handbook*, 50 men were working there in 1912-1913. Both white and black men from surrounding communities worked together at the mine, along with Italians, Irish, and others who moved from Baltimore, Philadelphia, West Virginia, and other northern states and cities. Immigrants settled in Hickory Ridge and Batestown and married into local families, both black and white.[51]

During at least some periods of the Cabin Branch Mining Company ownership, the Cabin Branch Mine was essentially a company town, with several free-standing dwellings for white workers and small dormitories for black workers. Both the Cabin Branch Mining Company and the American Agricultural Chemical Company ran company

stores where miners bought food and goods. Mine officials carefully checked purchases against earnings.[52] Altogether, 70 or more structures were built on the site, though how many ever stood at one time is unclear.

Accidents and deaths occurred at the mine. Miner Morse Reid is said to have died from inhaling gas. Another was decapitated after grabbing onto a moving elevator. One man who worked as an engineer on the railroad suffered multiple broken bones when his engine derailed; after his recovery, he was given the post of night watchman.[53]

Closing of the Mine

Several factors seem to have contributed to the closing of the Cabin Branch pyrite mine in 1920. Demand for gunpowder dropped after the war. At the same time, cheaper sources of sulfur were being discovered elsewhere, such as the Gulf states, and larger deposits of pyrite were discovered in other parts of the world, particularly Spain.[54]

Closer to home, the miners struck, or threatened to strike – the record is not clear – for a 50-cent per day raise. Because the mine was becoming less profitable, the superintendent is reputed to have said: "I'll let the shafts fill with water and the frogs jump in before I reopen the mine."[55]

After the mine closed, the American Agricultural Chemical Company "scrapped" the machinery.[56] Buildings were left vacant. Local residents probably salvaged many of these for building supplies and lumber. It has long been rumored that the Civilian Conservation Corps used timber from mine structures in building the five cabin camps in the mid-1930s. The CCC is also said to have used slate and tailings which had been removed from the mine for roadbeds.[57]

Many mine workers found employment at Quantico Marine Base and in the shipbuilding plants which had been constructed in Dumfries around the mouth of the Quantico. Many also continued to operate their small home farms and cut timber from the local woods.

When the federal government began to acquire lands for the Chopawamsic Recreational Development Area, most residents were moved out of their homes. Some, however, stayed in "pockets" of land within the boundaries of the RDA.[58]

Establishment of Chopawamsic Recreational Demonstration Area

In 1935, the lands now known as Prince William Forest Park were selected for government acquisition as a Federal Recreational Demonstration Project Area. Recreational Demonstration Areas, or RDAs, were a New Deal program meant to achieve several related goals: to rehabilitate degraded farmland; to improve the lives of impoverished farmers; and to provide "outdoor recreation facilities" near cities for the use of the "urban poor."[59] The Resettlement Administration received authority to create RDAs under the National Industrial Recovery Act. Technical assistance and other services were provided by the Recreation Demonstration Area Division of the National Park Service.

Recreational Demonstration Areas were also intended to provide farmers with new employment. In Prince William County, local residents were employed by the Works Progress Administration (WPA) in the early stages of

developing the park. They were also hired by the Emergency Work Conservation program (ECW), created in March 1933 and soon renamed the Civilian Conservation Corps (CCC).

There were eventually 46 RDAs in 24 states. Chopawamsic Recreational Development Area was one of two located near Washington, D.C.; the other is now Catoctin Mountain Park, near Frederick, Maryland. These were the only two RDAs to become national parks. In 1936, the Chopawamsic RDA was transferred to the National Park Service. It was placed under the administration of the National Capital Parks in 1940, under the military during World War II, and then transferred back to the Park Service in 1948, at which time it was renamed Prince William Forest Park.

In about 1933, in preparation for the first phase of acquisition, a "Family Selection Specialist" was sent to investigate the area around Dumfries. This official noted the abandoned farms, suffering businesses, and apparent lack of regular employment. He decided that the land had been exhausted for agricultural purposes; that the woodlands were depleted; and that residents had long been trapped in a cycle of poverty.[60] A 1935 report issued by the National Park Service, "Project Plan for the Recreational Area Demonstration Under the Land Program, Chopawamsic Area Report," provided the following description of the Cabin Branch Mine site:

> *Spoil banks, shafts, stray bits of mine equipment and habitations of hangers-on to former subsistence plots form a picture of defacement of the earth's surface westerly of Dumfries, where remains a part of a stranded rural industrial group, engaged for about a third of a century, up to 1919, in mining pyrite and conveying it by narrow gauge railroad to scows on the Potomac.*[61]

The government purchased only land, no buildings or other improvements. Most structures standing within the boundaries of the RDA were razed. The communities of Hickory Ridge and Joplin were essentially dismantled and their residents dispersed.

From 1935 to 1939, CCC workers stationed at the RDA cleared underbrush, built roads, trails, and bridges, installed utilities, dammed streams to form five small lakes, and constructed five cabin camps. The camps eventually provided racially segregated facilities for 500 campers (the camps remained segregated until the 1950s). No known use was made of the mine area, and probably no mine structures were left there at this time. In 1988, four of the camps were nominated to the National Register of Historic Places (the fifth was excluded because it had been extensively reconstructed).[62]

During the second phase of land acquisition, from 1942 until 1948, the Chopawamsic RDA was taken over by the government for the use of the U.S. Army Office of Special Services (OSS) for the training of spies in reconnaissance work, necessitated by American involvement in World War II. Between August 1942 and March 1943, the Navy acquired 50,000 more acres south of Route 619, including lands in Prince William, Fauquier, and Stafford Counties. These were acquired under authority of a Special Use Permit through a process that local residents found particularly severe.

Within the older area of the RDA, the OSS occupied two cabin camps. The OSS operations remained highly secretive. Signs forbidding people to enter the RDA were posted for many years after the OSS left, leaving area residents suspicious of what activities took place there and reluctant to visit, even after jurisdiction was returned to the National Park Service in 1948.

Prince William Forest Park

After the park was created, the mine site eventually became a favorite hiking destination. Little was done to stabilize or restore the site. Mine shafts were backfilled with dirt and over the years were occasionally refilled when the dirt settled. Piles of tailings remained, leaching sulfur and other chemicals into the ground and Quantico Creek. Sunken lateral depressions in the ground revealed the presence of mine shafts beneath.

In the late 1970s, the NPS designated the Cabin Branch pyrite mine site a National Environmental Study Area. Local junior and senior high school classes were encouraged to use the site as a case study on the ecological effects of the mine within biology and environmental studies curricula.[63]

In the mid-1990s, because of continuing problems – barren, eroded ground; exposed tailings; acidic runoff; exposed mine shafts – Prince William Forest Park undertook reclamation of the eastern half of the mine site, an area of approximately seven acres around the original Cabin Branch mine. An Environmental Assessment, the "Cabin Branch Pyrite Mine Reclamation Project," was completed in 1995 (figure 13).[64]

Tailings were treated with lime, covered with soil, and seeded with grass or planted with trees. The site was explored for mine shafts, and any depression in the ground was assumed to be a shaft. Thirteen such depressions were found in all. These were excavated to a depth of about 20 feet and capped with a thick layer of concrete. Boundaries of excavated areas were marked by pipes and a pipe-and-weight device for testing the security of the cap installed.

During the time reclamation work was being carried out, and for several years following, the site remained closed to visitors. In 1998, a second Environmental Assessment was undertaken to select a preferred treatment for restoration of the pedestrian trail, which had been destroyed by the reclamation work.[65] Five alternatives were prepared. The selected alternative (figure 12) called for construction of a boardwalk on the north side of the North Branch, ending in a viewing platform facing the now-stabilized hill on which the old mill had stood. This alternative was chosen because it kept visitors from walking through the site to the western end, and damaging the sensitive reclaimed areas.

Currently, the Cultural Resources Group of Louis Berger & Associates, Inc., has a four-year contract with the NPS to identify and evaluate the archeological resources of Prince William Forest Park.[66] The NPS expects a final report by 2004.

Endnotes

[1] Virginia Department of Mines, Minerals & Energy, "Cabin Branch Mine, Draft Reclamation Study" (21 November 1994): 10-12.

[2] The Prince William Forest Park website (nps.gov.prwi) and brochure provided most of the basic information about the park.

[3] Patricia L. Parker, "The Hinterland: An Overview of the Prehistory and History of Prince William Forest Park, Virginia" (Occasional Report #1, Regional Archeology Program, National Park Service, National Capital Region, October 1985): 1.

Much of the following history of the park area up to the time mine operations were established has been derived from "The Hinterland." Parker provides a detailed account of her research methods under "Methods of Data Collection and Analysis," pp. 5-9; also in sections titled "Sources" and "Data Gaps" under most of the "Historic Study Units."

[4] Information from the park's mission statement as reproduced on their web page.

[5] Parker, 93, 95ff.

[6] Ibid., 109ff.

[7] Ibid., 100.

[8] John Bedell, Cultural Resources Group of Louis Berger & Associates, Inc. to Stephen Potter, Regional Archeologist, National Capital Region, NPS, e-mail (15 June 2000).

[9] Ibid., 115-118, 124ff.

[10] Ibid., 135ff.

[11] Ibid. xi, 132ff.

[12] Ibid., 134-140.

[13] Ibid., 123-132. See, most importantly, Arvilla Payne-Jackson, Ph.D., and Sue Ann Taylor, Ph.D., "Prince William Forest Park: The African American Experience" (U.S. Department of the Interior, National Park Service, National Capital Region, June 2000). Payne-Jackson and Taylor conducted extensive oral histories of elderly residents and descendants of former landowners, both white and black, creating a vivid picture of the greater Dumfries community in the 1930s and 1940s. See also the following material in the Curatorial Collection of Prince William Forest Park: Eddie Dean, "Miners Dug into Triangle for Glitter of Gold" (*Potomac News,* 12 March 1992; "Batestown & Hickory Ridge," one-page outline, na, nd, copy in "Black History, Prince William Park" file.

Other material in the park's Curatorial Collection consists of notes and histories prepared by park personnel and others; most can be found in a loose-leaf binder titled "Cabin Branch Pyrite Mine Information." Most of these texts fail to cite their sources, and often, in fact, fail to give author, title, or date. For example, files include the unpaginated text of a talk by A. L. Mountjoy, presented before Historic Dumfries in 1978. Mountjoy does not give his sources, though his information is obviously derived from early published sources. In spite of this, these documents seem to provide material that is accurate in its broad outlines, judging by other, published sources, and so has been used with discretion.

[14] Marcasite is one of pyrite's crystalline forms. Information on pyrite derived from "Pyrite" – entry copied from mineralogical dictionary, title, author, and publishing information not recorded on copy in PRWI Curatorial Collection files; "Origin of the Gold and Pyrite Ores," seven-page ts, no source given, na, nd, p. 2, copy in Curatorial Collection, PRWI; "Pyrite," Encarta on-line encyclopedia entry (encarta.msn.com).

[15] Wayne Pafko, "Sulfuric acid" ("History of Chemical Engineering" web page, 4 April 1998). See also Alison Russell, "Pyrites as a Sulphur Source: Down but Not Out" (*Industrial Minerals,* June 1989): 41-52, p. 41.

[16] Boyd, "Phase 2," 7.

[17] Luke Boyd, "Phase 2 Architectural Evaluations of Route 522 in Louisa County, Virginia" (Virginia Commonwealth University, Archaeological Research Center, Richmond, Virginia, report for Virginia Department of Transportation, December 1988): 9; copy in Curatorial Collection, PRWI.

[18] See Dean, "Miners Dug into Triangle for Glitter of Gold."

[19] See Mountjoy; see also article by Joan Gauker, "A Gold Mine: Ore Is Environmental, Historic Discoveries" (*Potomac News,* 4 April 1978); copy in Curatorial Collection, PRWI.

[20] Russell, 41.

[21] Boyd, 5.

[22] Ibid., 13.

[23] In addition to Boyd, much of the information on the Louisa mines comes from Thomas Leonard Watson, *Mineral Resources of Virginia* (Virginia Jamestown Exposition Commission, 1907): 190-207. Also consulted was W. H. Adams, "The Pyrites Deposits of Louisa County, Virginia" (*The Virginias* V, 1884): 74, 80-81.

[24] Boyd, "Phase 2," 13.

[25] Watson, 190-207. Information specific to the Louisa County mines appears on pages 198-202; pages 202-204 discuss the Cabin Branch Mine.

[26] Boyd, pp. 9, 13, 15.

[27] Watson, 204.

[28] The major sources of information on the mine are the 1905 article by Robert H. Painter, "Pyrite Mining in Virginia" (*Engineering and Mining Journal* LXXX, 29 July 1905), 148-149, and the 1916 and 1919 maps produced by the American Agricultural Chemical Corporation. Painter gives extensive information on the mining and milling processes carried out at the Cabin Branch mine. Painter also wrote a shorter article which discusses the economies of mining at Cabin Branch: "Pyrites Mining and Milling in Virginia" (*Engineering and Mining Journal* LXXX, 1905): 433.

Two other important works are Watson, *Mineral Resources of Virginia,* and John T. Lonsdale, "Geology of the Gold-Pyrite Belt of the Northeastern Piedmont Virginia" (Bulletin 30, Virginia Geological Survey, University of Virginia, 1927): 86.

[29] Parker, 128; see also article by Dean.

[30] See Watson 203, Lonsdale 86-89. There may have been a small gold mine, the Greenwood Mine, located in the northwest corner of the park. Parker, on pp. 127-128 of "The Hinterland," says she was unable to find any information on production at the Greenwood mine. She refers to the local historian R. Jackson Ratcliffe, who wrote that the mine was "abandoned when the cost of labor became too high"; Ratcliffe, *This Was Prince William* (Leesburg, Virginia: Potomac Press, 1978): 94, quoted in Parker, 128. Parker also quotes Lonsdale to the effect that,

in 1907, the mine consisted of "two vertical shafts" and a number of trenches (Parker p. 128, quoting Lonsdale 1927, 83; Lonsdale must have been quoting Watson.). However, PRWI Superintendent Bob Hickman says that two experts who visited the site have said they found only test pits in the area of the Greenwood Mine.

[31] *Copper Handbook* (Virginia, 1912-1913); copy in PRWI Curatorial Collection.

[32] See A. L. Mountjoy, "The Cabin Branch Mine" (ts of talk, 2 November 1978); copy in Curatorial Collection, PRWI. See also Parker, 123.

[33] Deed information derived from a memo prepared by a volunteer historian at PRWI: Carlton T. Chapman, "Memorandum for Record, Subject: Cabin Branch Mine (Land Records, Clerk's Office, Circuit Court, Prince William County)," 4 September 1992. See Appendix A. Copies of all deeds can be found in PRWI Curatorial Collection.

[34] Watson, 203.

[35] Lonsdale, 86.

[36] Mountjoy; see also "Cabin Branch Pyrite Mine Site," two-page history and fact sheet, na, nd; copy in Curatorial Collection, PRWI.

[37] This is the recollection of two men who had been employed at the mine: Cecil Garrison, quoted in Gauker, "A Gold Mine," and James Davis, quoted in Marilyn Finley, "Here Longer than Most..." (*Potomac News,* 3 July 1973); copies in Curatorial Collection, PRWI.

[38] Painter, "Pyrite Mining in Virginia," 148.

[39] The information about fans and pumps comes from Mountjoy; all other information is from Painter, "Pyrite Mining in Virginia," 148-149.

[40] See Painter, "Pyrite Mining in Virginia," 148-149, and Mountjoy.

[41] The description of the milling process also comes from Painter, "Pyrite Mining in Virginia," 148-149, and was reprinted in Watson, 205-206.

[42] All quotations are from Painter, "Pyrite Mining in Virginia," 148-149.

[43] Painter, "Pyrite Mining in Virginia," 148-149.

[44] James Davis, interviewed in Finley, "Here Longer than Most..."

[45] The unnamed author of the short report titled "Pyrite Mine Hike" says the ore was shipped to the Dupont Chemical Company in Delaware; "Pyrite Mine Hike," nd, PRWI Curatorial Collection.

[46] Watson, 204.

[47] See Gauker, "A Gold Mine."

[48] Mountjoy says there were three 10-hour shifts per day, but is surely wrong about this. Cecil Garrison recalled two 10 hour shifts, 6 days a week, with the day shift running from 7 a.m.-5 p.m.; see Gauker. Dean reports his sources saying there were two 12-hour shifts daily.

[49] See details recounted by former miners in article by Dean.

[50] Cecil Garrison, in Gauker.

[51] See Payne-Jackson and Taylor, "Prince William Forest Park: The African American Experience," also Parker.

[52] Parker 123, 128-129. This was known as the "W.W. Payne Cabin Branch Mine Company Store." Cecil Garrison's father ran the company store for a time.

[53] These stories were recounted by men interviewed by reporter Finley in "Here Longer than Most..." Miner John Kendall, the engineer who had been so seriously injured, was 92 years old when he was interviewed by Finley, and told her he remembered many deaths at the mine.

[54] Lonsdale, p. 9, on Gulf states sulfur; Gauker records that Park officials said pyrite had been found in the Gulf states.

[55] See Dean, also "Cabin Branch Pyrite Mine Site," two-page history and fact sheet, na, nd; copy in Curatorial Collection, PRWI. Mountjoy says miners struck for a 25-cent daily pay increase, from $4.25 to $4.50, while Gauker says miners struck for $4 per day.

I conducted an extensive newspaper search for information on the strike (or threatened strike) that closed the Cabin Branch pyrite mine in 1919 or 1920 (1920 is the date most commonly given in park documents) in various contemporary local newspapers at the Washingtoniana Room, Martin Luther King Jr. Branch, D.C. Public Libraries, and at the Bull Run Regional Library. I found no information.

At the Washingtoniana Room, I searched the *Evening Star* and the African American *Washington Bee* on microfilm and found nothing. For the *Evening Star,* I looked through microfilmed index cards for 1919-1920 under various subject headings, including (among others) labor, strikes, Cabin Branch mine/pyrite mine, mines, Dumfries. Though there were thousands of entries under "labor," none were remotely useful. I searched each issue of the weekly *Washington Bee* for March-May 1919 and all of 1920 and found nothing.

At the Bull Run Regional Library, I searched the microfilm collections of historic local Virginia newspapers. The library has a finding aid entitled "Virginia Newspapers 1821-1935" (VA 011.35 Cap), located in RELIC (Ruth E. Lloyd Information Center – formerly the Virginiana Room). There seem to be some discrepancies regarding titles and publication years between this aid and the labels and other identification information on the microfilm reels. I looked through the Manassas *Gazette* (published 1869-1895), mostly issues from 1895; the Manassas *Journal* (1895/96-1948); and the Manassas *Democrat* (1909-1921) – this seems to have also been published under the name *Journal Messenger*. All newspapers had many issues missing. None of the papers had any information on the mine, much less on the strike, and almost nothing on the Dumfries area.

[56] Lonsdale, 85.

[57] See Dean; also Mountjoy.

[58] See Dean; also discussed in Parker.

[59] Parker, 141.

[60] Ibid., 141ff.

[61] National Park Service, "Project Plan for the Recreational Area Demonstration Under the Land Program, Chopawamsic Area Report" (Washington, D.C.: U.S. Department of the Interior, National Park Service, 1935): 8, quoted in Payne-Jackson and Taylor, "Prince William Forest Park: The African American Experience," 101.

[62] See Sara Amy Leach, National Register nomination, "ECW Architecture at Prince William Forest Park, 1933-42" (March 1988).

[63] See Gauker, "A Gold Mine."

[64] Prince William Forest Park, "Environmental Assessment: Cabin Branch Pyrite Mine Reclamation Project, Prince William Forest Park" (July 1995). As part of this project, Robert C. Sonderman, Archeologist with the National Capital Region, completed a survey and testing of the area, resulting in the discovery of a dry-laid stone foundation of a mine building located behind the old mill; see Sonderman, "Archeological Investigations of (44PW967) for the Cabin Branch Mine Reclamation Project, Prince William Forest Park," 1996.

[65] Prince William Forest Park, "Environmental Assessment: Cabin Branch Pyrite Trail Restoration Project, Prince William Forest Park," 1998.

[66] The work provided for in the contract is part of the SAIP, or Systemwide Archeological Inventory Program.

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Boundary Information

Verbal Boundary Description

The western boundary of the property has been drawn to include all known remains of the American Agricultural Chemical Company mine operations, with an additional margin of approximately 100 feet to the west. The western boundary runs from the south edge of the Pyrite Mine Road directly north to the north bank of the North Branch of Quantico Creek. The northern boundary follows the North Valley Trail and then runs parallel to but within the park's boundary to a northeast point directly north of the southeast corner, which is the eastern terminus of the Pyrite Mine Bridge over the North Branch. The boundary includes the Pyrite Mine Road after it passes over the bridge and turns north to the graveled parking area next to the old commissary. The south boundary follows the southern edge of the Pyrite Mine Fire Road. (The road has not been included as a contributing feature because it is presumed that it has been heavily altered over the years through paving; however, further historical or archeological research may reveal significance.)

Boundary Justification

The boundaries of the Cabin Branch Pyrite Mine Historic District have been drawn to include all known historic remains, with a sufficient margin of additional land to allow for potential discovery of further structural and archeological remains. The boundaries also needed to address the issue of remaining underground mine workings. The pyrite mine lens is said to have extended for approximately 1000' and to have been about 1000' wide. It seems safe to assume that the old shaft at the east end and the Agrico shaft at the west end marked the respective ends of the lens.

***Photographs are grouped separately from maps and photocopies**

Name of property: Cabin Branch Pyrite Mine, Prince William Forest Park (PRWI)
County and state: Prince William County, Virginia
Photographer: n/a
Date: 1994
Location of original: n/a
Description of view: USGS Quad map, 7.5 minute series, Quantico, VA-MD
Figure number: 1

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: n/a
Date: n/a
Location of original: from park brochure
Description of view: Prince William Forest Park, current map
Figure number: 2

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-2 #9
Description of view: Eastern half of site, looking west
Figure number: 3

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #20
Description of view: Western half of site (North Branch, Quantico Creek), looking north
Figure number: 4

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Map, American Agricultural Chemical Co.
Date: October 1916
Location of original: Museum Resource Center (MRCE)
Description of view: Compilation of two maps, "Plan of the American Agricultural Chemical Co. Cabin Branch Mine," PRWI-2012 & PRWI-2015
Figure number: 5

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Map, American Agricultural Chemical Co.
Date: June 1919
Location of original: MRCE
Description of view: Compilation of 2 maps, "Cabin Branch Mine, Plan Showing Head Shaft, Buildings, and Terminal Yards," PRWI-2011 & PRWI-2014
Figure number: 6 (western half of site)

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Map, American Agricultural Chemical Co.
Date: June 1919
Location of original: MRCE
Description of view: Compilation of 2 maps, "Cabin Branch Mine, Plan Showing Head Shaft, Buildings, and Terminal Yards," PRWI-2011 & PRWI-2014
Figure number: 7 (eastern half of site)

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: map
Date: September 2000
Location of original: n/a
Description of view: Map showing contributing and non-contributing features (base map included for orientation)
Figure number: 8

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #24
Description of view: Eastern half of site, north side of stream, looking northeast
Figure number: 9

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: unknown
Date: 1934
Location of original: Curatorial collection, PRWI
Description of view: View from old mill site towards Mine Road
Figure number: 10

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #23
Description of view: Ruins of commissary, looking east
Figure number: 11

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: map
Date: 1995
Location of original: PRWI Draft "Environmental Assessment"
Description of view: Alternative E for reclamation of eastern half of site
Figure number: 12

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: map by PRWI staff
Date: September 2000
Location of original: PRWI
Description of view: Map showing topography and waste piles
Figure number: 13

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-2 #22
Description of view: Bridge over North Branch of Quantico Creek, Pyrite Mine Fire Road, looking west
Figure number: 14

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-2 #16
Description of view: Tailings piles, north side of stream, eastern half of site, looking southeast
Figure number: 15

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Unknown
Date: c. 1907
Location of original: From Watson, *Mineral Resources of Virginia*, plate XXVII, fig. 2, facing p. 200
Description of view: Photograph of old mill in operation
Figure number: 16

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Unknown
Date: c. 1907
Location of original: Curatorial collection, PRWI
Description of view: Photograph of old mill in operation
Figure number: 17

***There is no number 18**

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Unknown
Date: c. 1965
Location of original: Curatorial collection, PRWI
Description of view: Eroded face of hill on which old mill formerly stood
Figure number: 19

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-2 #2
Description of view: Foundations of old mill, old capped shaft to right, looking west
Figure number: 20

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #21
Description of view: Old dewatering shaft at foot of hill, faintly visible at right; view from west, looking east
Figure number: 21

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Robert Sonderman
Date: 1996
Location of original: From Sonderman, "Archeological Investigations of (44PW967) for the Cabin Branch Mine Reclamation Project," p. 5, fig. 3
Description of view: Foundations of structure near old mill
Figure number: 22

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #1
Description of view: Clearing in woods, site of Agrico main shaft, looking southeast
Figure number: 23

Name of property: Cabin Branch Pyrite Mine Site, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-2 #24
Description of view: Detail of capped shaft, maybe ventilating shaft, looking north
Figure number: 24

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #2
Description of view: Concrete foundations, remains of headframe or headhouse, looking east
Figure number: 25

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #3
Description of view: Crusher house foundations, looking east
Figure number: 26

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Drawn by Morris Jones
Date: c. 1990
Location of original: Curatorial collection, PRWI
Description of view: Plan of Agrico remains
Figure number: 27

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #5
Description of view: Conveyor house footing
Figure number: 28

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: PRWI staff
Date: October 2000
Location of original: PRWI, digital photograph
Description of view: Reservoir foundations
Figure number: 29

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #7
Description of view: Agrico mill foundations, looking north
Figure number: 30

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-3 #9
Description of view: Agrico mill foundations, detail, looking south
Figure number: 31

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-3 #10
Description of view: Classifier house foundations, looking east
Figure number: 32

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #9
Description of view: Concentrate bin foundations, looking southwest
Figure number: 33

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-3 #5
Description of view: General view, machine shop site, looking west
Figure number: 34

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #13
Description of view: Machine shop foundations, looking northeast
Figure number: 35

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-3 #7
Description of view: Engine room foundations, looking north
Figure number: 36

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-3 #11
Description of view: Boiler room foundations on right, engine room on left, looking north
Figure number: 37

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-3 #2
Description of view: View of trail along route of main railroad track (Cabin Branch Mine Trail), looking east
Figure number: 38

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #16
Description of view: View of trail along spur track 4 (North Valley Trail), looking north
Figure number: 39

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: September 2000
Location of original: NCR Photofile PRWI mine-3 #15
Description of view: Waste dump along North Valley Trail, looking southwest
Figure number: 40

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Kay Fanning
Date: July 2000
Location of original: NCR Photofile PRWI mine-1 #18
Description of view: Pile of stones likely remaining from foundations of one of "Old Colored Quarters," looking west
Figure number: 41

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: n/a
Date: c. 1985
Location of original: Patricia Parker, "The Hinterland," fig. 26
Description of view: "Communities in Prince William Forest Park, 1920s-1930s"
Figure number: 42

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Unknown
Date: c. 1913
Location of original: Curatorial collection, PRWI
Description of view: W.W. Payne company store
Figure number: 43

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Unknown
Date: 1907
Location of original: Watson, *Mineral Resources of Virginia,* p. 204, fig. 37
Description of view: Section of pyrite lens at Cabin Branch Mine
Figure number: 44

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: drawings
Date: 1900
Location of original: Fraser & Chalmers catalog, "Concentrating Machinery"
(courtesy Smithsonian Institution, National Museum of American History branch library)
Description of view: Elevation, plan, and section of 3-compartment Hartz jig
Figure number: 45

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: n/a
Date: 1985
Location of original: Parker, "The Hinterland," fig. 22
Description of view: "Sites associated with mixed agrarian economy, 1870-1940"
Figure number: 46

Name of property: Cabin Branch Pyrite Mine, PRWI
County and state: Prince William County, Virginia
Photographer: Drawn by Lee Lansing
Date: 1973
Location of original: Copy in curatorial collection, PRWI
Description of view: Drawing of engine "Little Dinky"
Figure number: 47

Appendix A
Land Records Pertaining to Cabin Branch Mine

from Carlton T. Chapman, "Memorandum for Record. Subject: Cabin Branch Mine (Land Records, Clerk's Office, Circuit Court, Prince William County)," 4 September 1992.

Deed
Liber 39, folio 359
24 April 1890
From: Arthur B. McInteer
To: Louis F. Detrick
RE: 53 acres for $1900

Deed
Liber 32, Folio 354-359, 384-387
18 January 1904
From: Louis Detrick and Peter Bradley
To: Washington Southern Railway Co.
RE: right of way from Quantico Creek to Possum Nose Point for $3750

Articles of Incorporation, Cabin Branch Mining Co.
Charter Book 1, pp. 150-155
13 November 1907
Capital Stock – $300,000 – shares $100
Real Estate: 5000 acres
officers include: Peter B. Bradley (President and Director), William H. Detrick (Vice President and Director), John W. Detrick (Secretary-Treasurer and Director)
Certificate of Dissolution: 25 January 1922

Deed
Liber 57, folio 92-103
23 November 1907
From: Detrick and Bradley?
To: Cabin Branch Mining Company
RE: sells to all real estate and personal property to company for $300,000
also – lists land sold or leased to Detricks
identifies all lands held by Detrick and Bradley families

Map
Map Book 1, pp 34, 35, 36 – indicates that right-of-way later abandoned by Washington Southern Railway Co. and reverted back to Cabin Branch Mining Co. Inc.

Lease
Liber 59, Folio 409-412
27 April 1910
From: Climax Manufacturing Co., Corry, PA
To: Cabin Branch Mining Co., Inc.
RE: leases rolling stock to CBM – one 25 ton Class B Locomotive 36" gauge

Deed
Liber 63, Folio 96-97
12 April 1912
From: Jack Thomas
To: Cabin Branch Mining Co., Inc.
RE: 33 acres purchased for $400
Final land acquisition by mine

Deed
Liber 73, Folio 334-335
15 December 1915
From: Edwin L. Pierpoint
To: American Agricultural Chemical Company (AACCo)
RE: land for $320, exclusive of minerals upon and under this land
appears that land was adjacent to Cabin Branch mine (Pierpoint
later became Vice President of Mine)

Deed
Liber 63, Folio 109-110
30 June 1919
From: owners of Cabin Branch Mining Co.?
To: American Agricultural Chemical Co.
RE: sells Cabin Branch Mining Co., Inc. ("and other valuable considerations")
to AACC for $1.00, incl. all real estate and personal property
Vice President CBMCo. – Edwin L Pierpoint
Secretary – William H. Detrick

Deed
Liber 82, Folio 207-209
26 June 1926
From: American Agricultural Chemical Co.
To: Aubrey L. Clarke, Trustee for James T. Crosby
RE: sells Cabin Branch Mine property to Crosby for $15,000

Indenture
Liber 83, Folio 126-129
19 December 1926
RE: corrects deed to specify terms and conditions under which trustee holds
the property; contains extract from minutes of meeting of Board of Directors
of AACC authorizing sale of Cabin Branch Mine property to James T. Crosby for $15,000

Bill of Sale
Liber 6, Folio 324-325
9 December 1913
From: William W. and Mattie E. Payne
To: Cabin Branch Mining Co., Inc.
RE: sale of all inventory, stock of goods, and merchandise to CBMCo. for $6713

Appendix B
Dimensions of Existing Foundations

This list only includes dimensions of foundations which are still known to exist. Dimensions are taken from two historic maps, both prepared by the American Agricultural Chemical Company and held in the Prince William Forest Park Collection at MRCE Museum Resource Center --. PRWI 2014, "Plan Showing Head Shaft, Buildings, and Terminal Yards" (October 1916, revised June 1919), shows the east end of the site as it existed in June 1919, when the American Agricultural Chemical Company acquired the mine. PRWI 2011, "Plan Showing Head Shaft, Buildings, and Terminal Yards/The American Agricultural Chemical Company/Cabin Branch Mine/Dumfries, Virginia" (October 1916, Revised June 1919), shows the structures built by Agrico, and assigns a number to each.

Cabin Branch Mining Company

72. Commissary – 40.2' x 45.5', porch 10.5'

American Agricultural Chemical Company

Reservoir (unnumbered) – 52 x 52
1. Mill (drawing in notes) – 37' x 64.6' x 25.3' x (24.5'/15'/3.6') x 71.5' x 18'
1A. Classifier Room – 31.83' (north side) x 26' (south side)
2. Crusher House – 20' x 46' x 40.9' x 20.9' x 25.3'
3. Head Frame – no dimensions given – Head Frame is roughly a Greek cross in footprint
15. Conveyor House (between Crusher House and Mill) – 301'
20. Concentrate Bin – 12 x 50.9
21. Boiler Room – 20.83' x 45.75'
22. Engine Room – 61.1' x 40'
23. Machine Shop – 61.2' x 41.2'
southeast end or long side of Boiler Room, Engine Room, and Machine Shop is 126.95'

Appendix C
Glossary of Selected Mining Terms

most definitions from:
Albert H. Fay. *A Glossary of the Mining and Mineral Industry*. Washington: GPO, 1920, 1947 reprint. Bulletin 95.
***other sources**

*shortened from original Glossary file

Blake crusher – The original crusher of jaw type. A crusher with one fixed jaw plate and one pivoted at the top so as to give the greatest movement on the smallest lump. Motion is imparted to the crusher by the lower end of the crushing jaw by toggle joint operated by eccentric.

Breaker – Machines used to break ore into large pieces, in preparation for further processing.

Change house – A special building at mines or other works where laborers may wash or change their clothes.

Crusher – A machine for crushing rock and minerals, reducing them to a uniform size, freeing the grains of the mineral and in preparation for concentration. There are a number of types of crushers, the most common being roll, ball and gravity crushers, stamps, and grinders. (Definition supplied by Richard O'Connor, Ph.D., WASO)

Crushing – 1. Reducing ore or quartz by stamps, crushers, or rolls. 2. The quantity of ore so pulverized or crushed at a single operation.

Crushing machine – A machine constructed to pulverize or crush stone and other hard and brittle materials.

Crushing rolls – A machine consisting of two heavy rolls between which ore, coal or other mineral is crushed. Sometimes the rolls are toothed or ribbed, but for ore their surface is generally smooth.

Dodge crusher – Similar to Blake crusher, except the movable jaw is hinged at the bottom. Therefore the discharge opening is fixed, giving a more uniform product than the Blake with its discharge opening varying every stroke. This type of crusher gives the greatest movement on the largest lump.

Drift – An approximately horizontal passageway in underground mining.

Fines – 1. Very small material produced in breaking up large lumps. 4. Ores in too fine or pulverent a condition to be smelted in the same way as ordinary coarse ores.

***Gangue** – the stony or earthy minerals occurring with the metallic ore in a vein or deposit. Also called **matrix**.

Grizzly – 1. An iron grating that catches the larger stones passing through the sluices and throws them aside. 2. A grating of iron or steel bars for screening ore, etc.

Head – In the plural, the purest ore obtained by washing; distinguished from middling, tailing, and slime.

Headframe – A structure erected over a shaft to carry the sheaves over which the cable runs for hoisting the cage.

Head house – The house or building that encloses the headframe.

Headings – In ore dressing, the heavier portions collected at the upper end of a buddle or sluice, as opposed to the tailings, which escape at the other end, and the middlings, which receive further treatment.

Hoist – 1. An engine for raising ore, rock, coal, etc. from a mine and for lowering and raising men and material. Also Hoister. 2. The amount of material hoisted during a shift.

Hoisting block – The lower block of a block-and-fall, bearing the hoisting block.

Jig – 1. A machine or apparatus in which ore is concentrated on a screen or sieve by a reciprocating motion of the screen, or by the pulsion of water through the screen. 2. To separate heavier from lighter materials, as ore from gangue, by agitation or in water.

Jigger – 1. A workman who jigs.

Jigging machine – A machine which jigs.

***Lag** – One of the staves or strips forming the periphery of a wooden drum, the casing of a steam cylinder, or the like.

Middling – The second quality of ore obtained by washing. Usually used in the plural form.

Pit head (Scot.) – The landing at the top of a shaft.

Pyrite – Hard, heavy, shiny, yellow mineral, FeS2, generally in cubic crystals. distinguished from chalcopyrite and from marcasite. Also Iron pyrites, fool's gold, iron sulphide.

Pyrites – Literally means mineral that strikes fire. A number of metallic-looking sulphides including iron pyrites, copper pyrites, tin pyrites, etc. Pyrite with no "s" is only iron disulphide, i.e. iron pyrite.

Pyritic smelting – fusion of sulfide ores by the heat generated by their own oxidation, and without the aid of any extraneous heat.

Roll – A cylindrical body set in bearings (usually fixed) and used singly or in pairs or sets for crushing or squeezing. See rolls. Also one of two cylinders or grooved rollers between which material is drawn, as for reducing its thickness, as the finishing rolls of a rolling mill.

Roll-jaw crusher – A crusher of the same general type as the Blake or Dodge, but the moving jaw has a rolling instead of an oscillating motion. (Liddell)

Rolls – Cast-iron cylinders, either plain or fitted with steel teeth, used to break coal and other materials into various sizes. Applied to the type of machinery in which ore is broken between cylindrical rolls which rotate in a vertical plane. See also roll train.

Spall; spawl – 1. To break ore. Ragging and cobbing are respectively, coarser and finer breaking than spalling, but the terms are often used interchangeably. Pieces of ore thus broken are called spalls.

Spalling-floor – A place for spalling.

Stope – n., v. 1. Any excavation made in a mine to remove the ore that has been rendered accessible by the shafts and drifts. vi, vt. 2. To mine or work by stopes.

***Sump** – A space where water is allowed to collect at the bottom of a shaft or below a passageway.

Tailing – The refuse from a metallurgical process; if the refuse from several processes or more than one mill should meet, the result could be described as "tailings." The material from which ore of more concentrated or partly concentrated products have been removed, and which is available for further treatment.

Tailings (sep. definitions) 1. In metallurgy, the part rejected in washing an ore that has passed through the screens of a stamp-mill; the worthless slimes left after the valuable portion has been separated by dressing or concentration. The sand, gravel, and cobbles which pass through the sluices in hydraulic mining were formerly generally called tailings, but lately have been called mining debris or simply debris. The lighter or refuse ore accumulated at the lower end of a buddle, or washing apparatus, or was carried away by the water.

Those portions of washed ore that are regarded as too poor to be treated further; used especially of the debris from stamp mills or other ore-dressing machinery, as distinguished from material (concentrates) that is to be smelted. The inferior leavings or residue of any product; foots, bottoms. In mining the residuum after most of the valuable ore has been extracted.

***Tram** – v.i., v.t. – To convey or travel by tram.

***Trestle** 1. a frame typically composed of a horizontal bar or beam rigidly joined or fitted at each end to the top of a transverse A-frame... 2.a. One of a number of bents, having sloping sides of framework or piling, for supporting the deck or stringers of a bridge. 2.b. A bridge made of these.

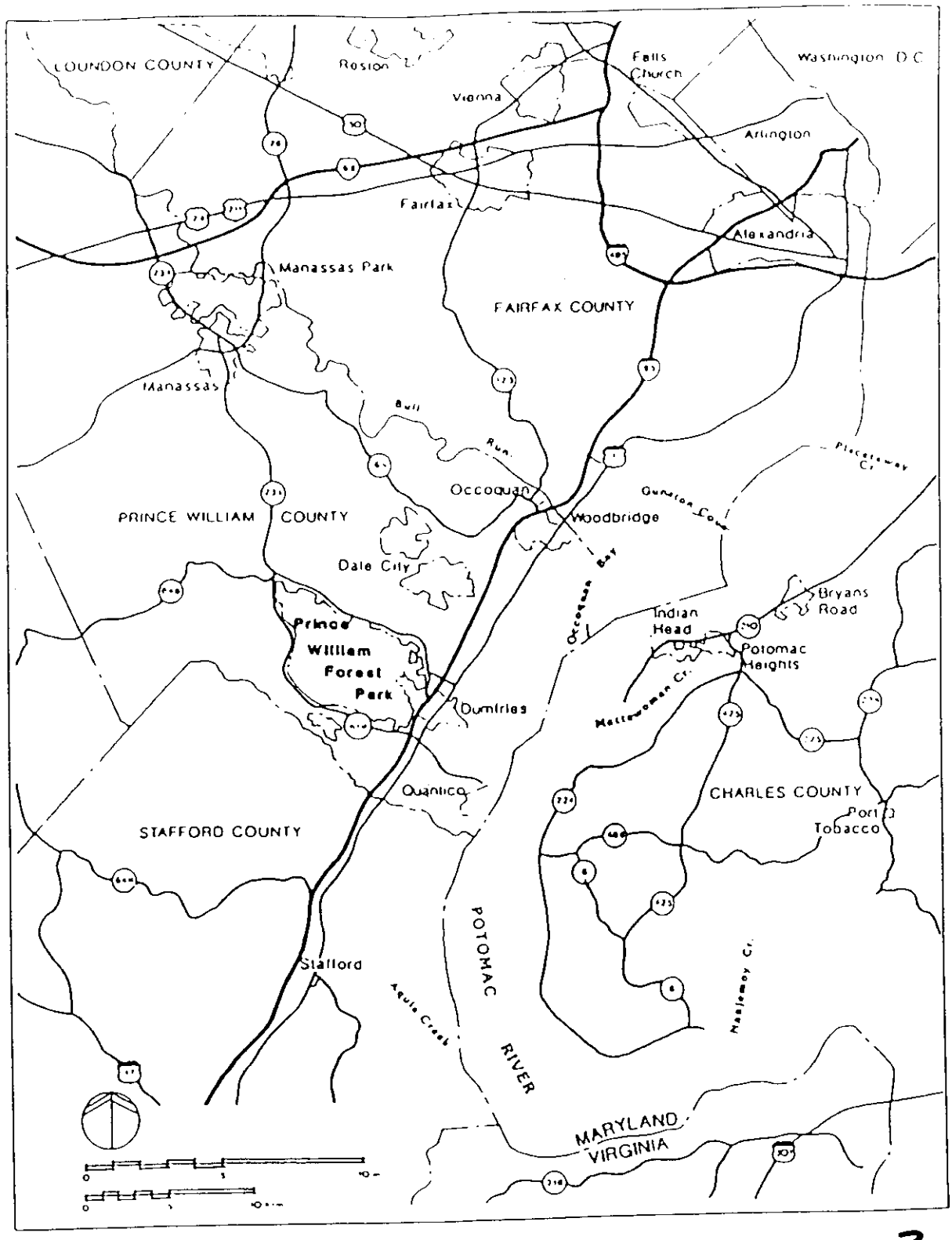

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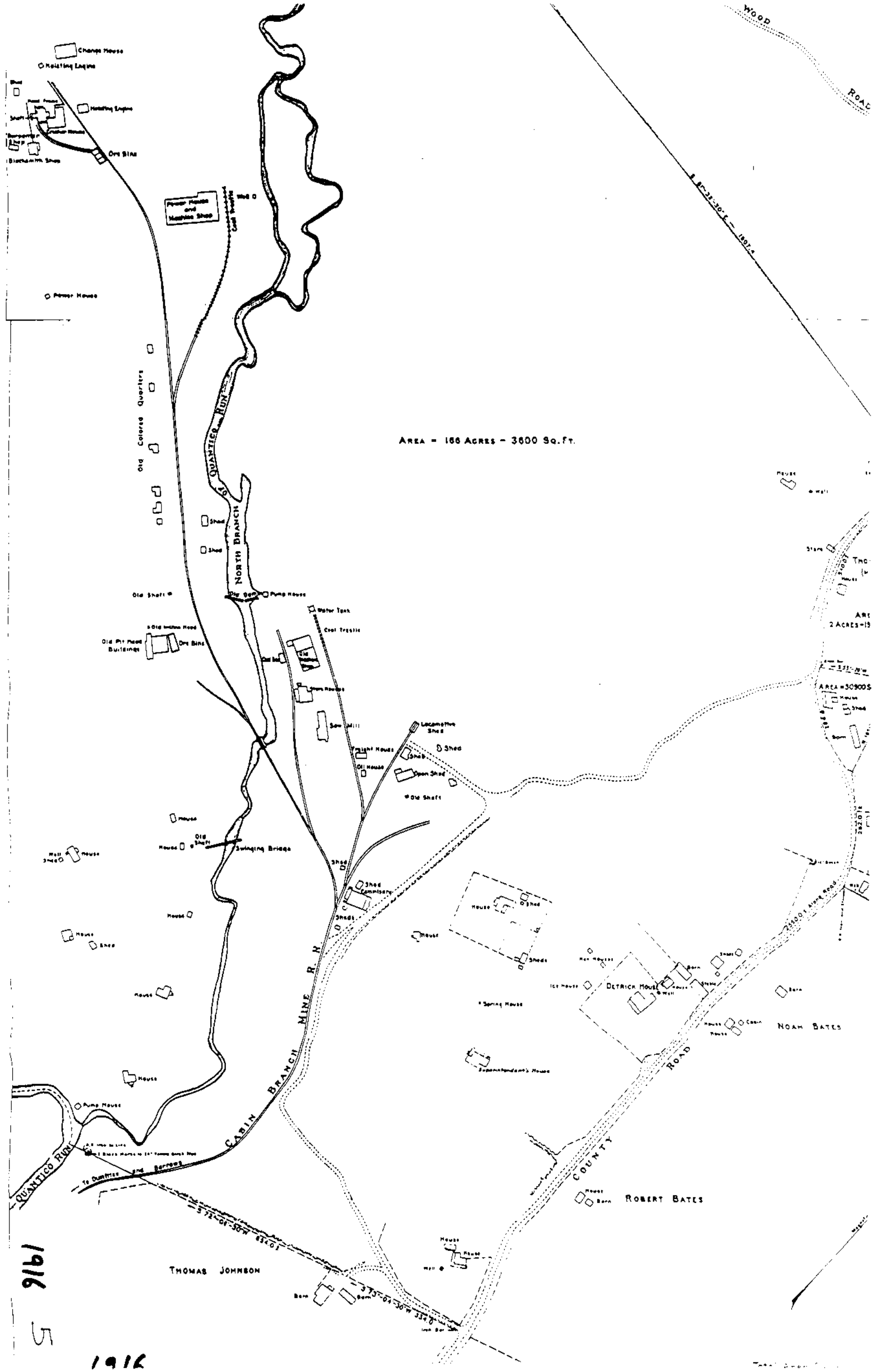
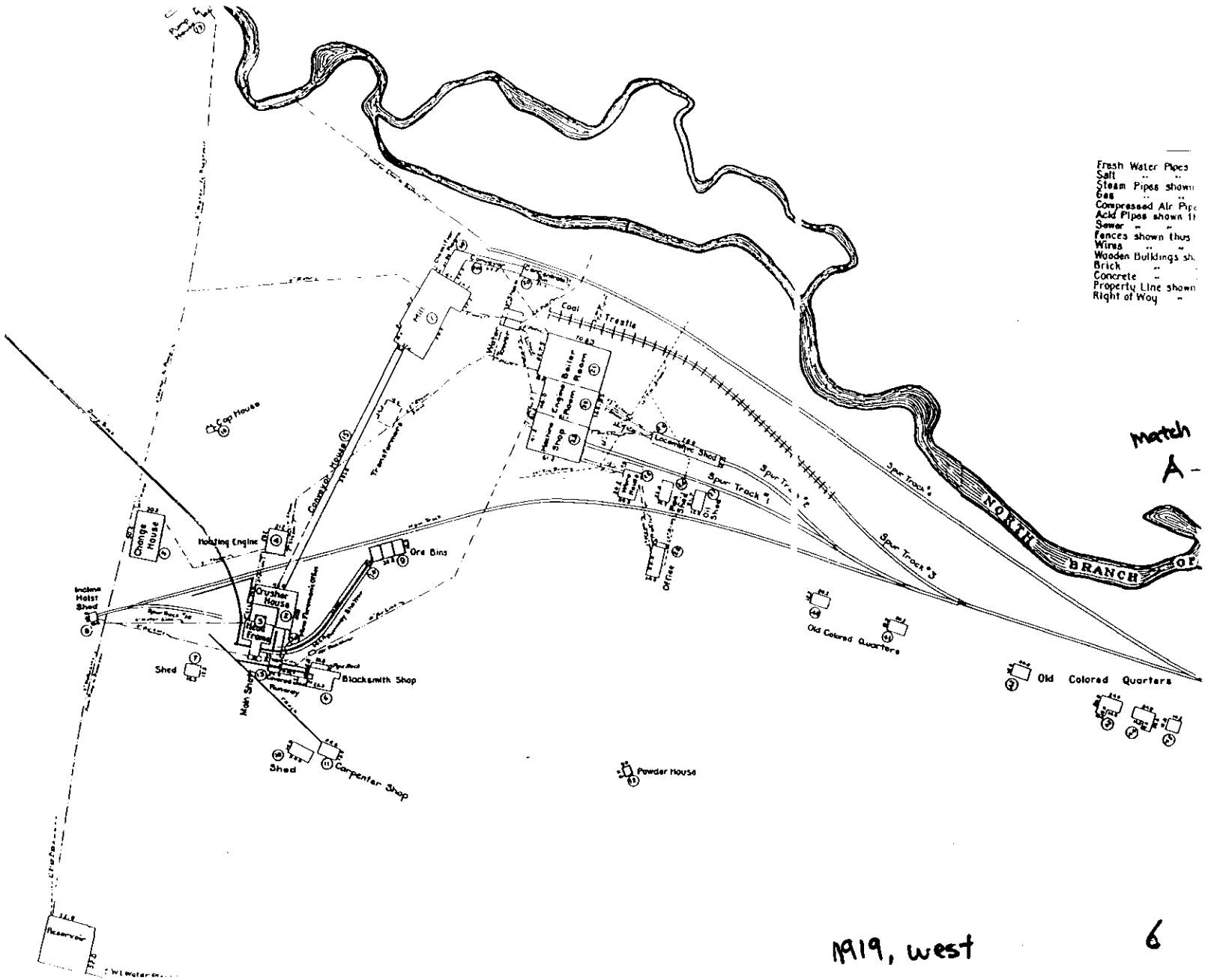
Figure 2 *Regional Area Map*

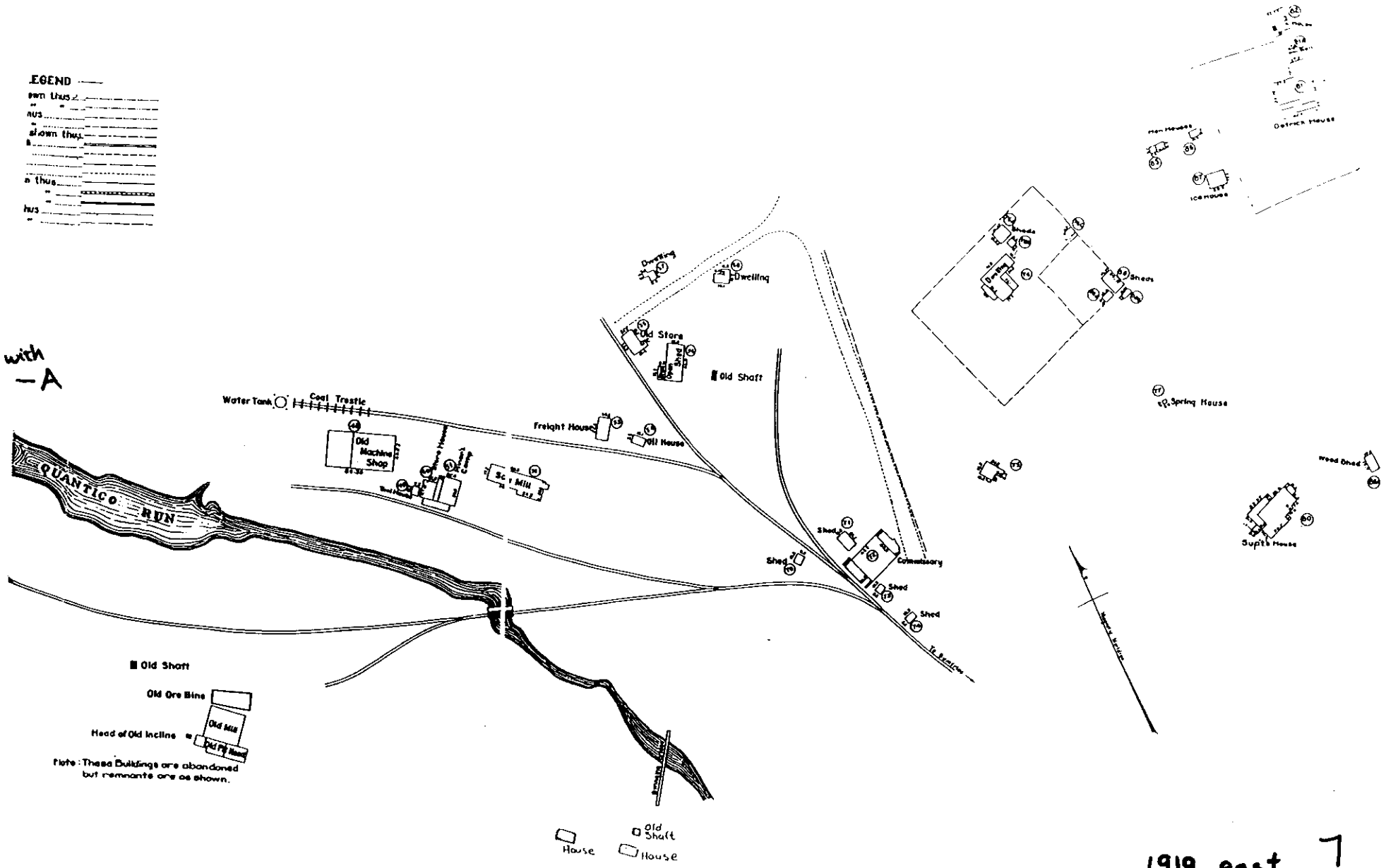

Change House
Hoisting Engine
Blacksmith Shop
Ore Bins
Power House and Machine Shop
Coal Trestle
Power House
Old Colored Quarters
NORTH BRANCH OF QUANTICO RUN
AREA = 166 ACRES - 3600 SQ. FT.
WOOD ROAD
Shed
Old Shaft
Pump House
Water Tank
Coal Trestle
Old Pit Head Buildings
Ore Bins
Saw Mill
Locomotive Shed
Freight House
Oil House
Open Shed
Swinging Bridge
House
Commissary
CABIN BRANCH MINE R.R.
DETRICK HOUSE
Ice House
Spring House
Superintendent's House
NOAH BATES
COUNTY ROAD
ROBERT BATES
QUANTICO RUN
THOMAS JOHNSON
Barn
1916
5
1916



match A-

1919, west

6


LEGEND
with
—A
QUANTICO RUN
Water Tank
Coal Trestle
Old Machine Shop
Freight House
Oil House
Old Shaft
Old Store
Dwelling
Dwelling
Old Shaft
Sc. 1 Mill
Shed
Shed
Commissary
Shed
Shed
To Station
Old Shaft
Old Ore Bins
Old Mill
Head of Old Incline
Old Pit House
Note: These Buildings are abandoned but remnants are as shown.
Old Shaft
House
House
District House
Ice House
Sheds
Dwelling
Sheds
Sq. Spring House
Wood Shed
Supt's House
Memorial Avenue

1919, east 7

Figure 8 – Contributing Features

Structures

Shafts

1. old shaft 1
2. old shaft 2
3. old shaft 3
4. old shaft 4 (main Cabin Branch Mining Company shaft)
5. dewatering shaft
6. inclined shaft
7. possible ventilation shaft
8. main (Agrico) shaft

Foundation remains

Cabin Branch Mining Company (east side)

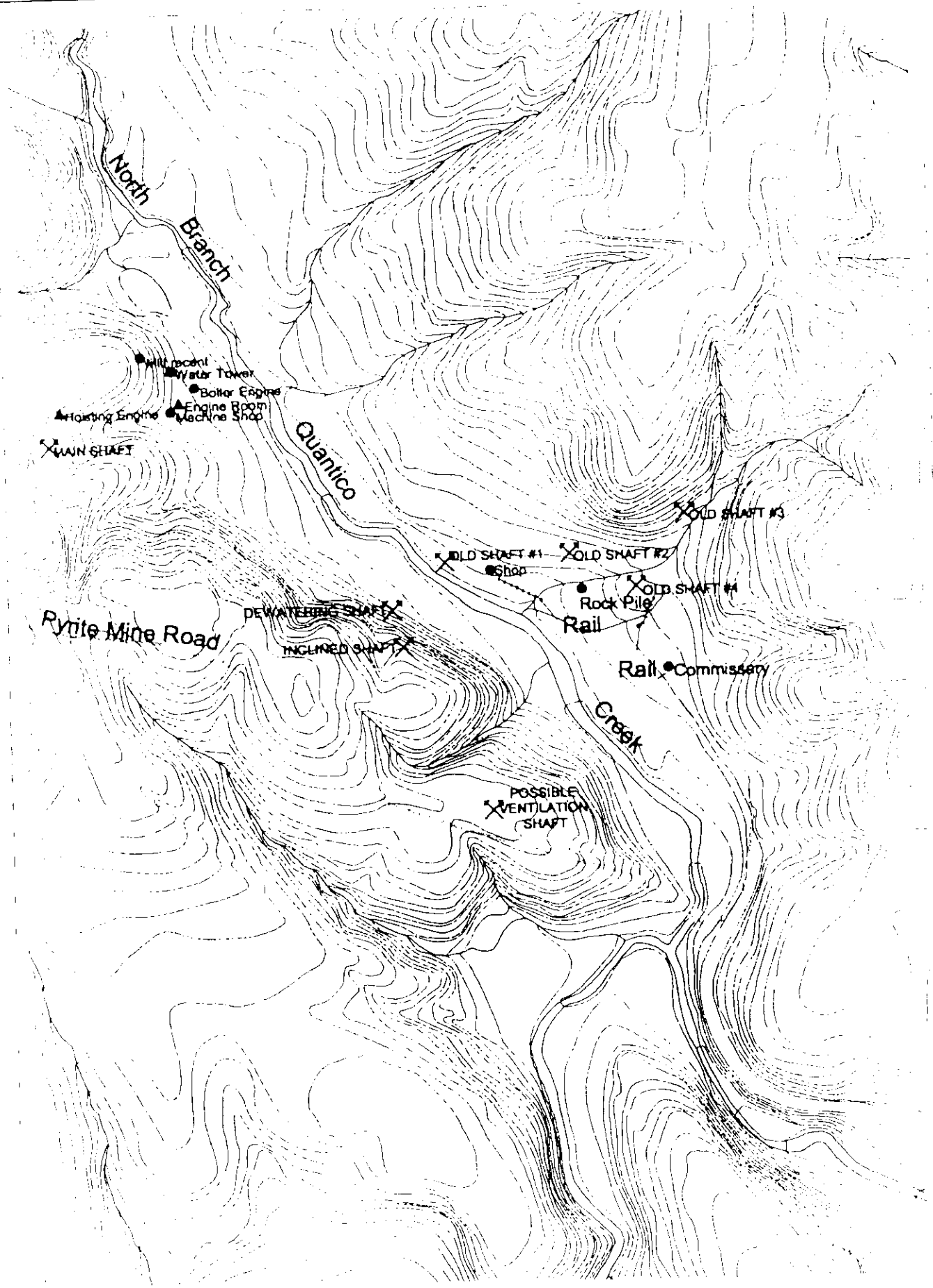
9. foundation remains of small structure near old mill
10. foundations of old mill
11. commissary, walls

American Agricultural Chemical Company (west side)

12. headframe or headhouse, concrete foundations
13. crusher house, concrete foundations
14. conveyor house, 21 footings (counted as 21)
15. mill, concrete foundations
16. classifier room, concrete foundations
17. concentrate bin, concrete foundations
18. machine shop, concrete foundations
19. engine room, concrete foundations
20. boiler room, concrete foundations
21. reservoir, concrete foundations
22. pyrite mine road bridge

Sites

23. partial route of main track (trail apparently follows)
24. trail along route of spur track 1
25. trail along route of spur track 4
30. foundation stones from structure, presumably "Old Colored Quarters"



Mine Shafts at Prince William Forest Park's Pyrite Mine

Base map for 8