

E. Osment

AL-VI-B-004

Form 10-300
(Rev. 6-72)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Type all entries - complete applicable sections)

STATE	Maryland
COUNTY	Allegany
FOR NPS USE ONLY	
ENTRY DATE	

1. NAME

COMMON: Lonaconing Furnace

AND/OR HISTORIC: George's Creek Coal and Iron Company Furnace No. 1

2. LOCATION

STREET AND NUMBER: Behind the Central Elementary School, East Main Street

CITY OR TOWN: Lonaconing CONGRESSIONAL DISTRICT: Sixth

STATE: Maryland CODE: 24 COUNTY: Allegany CODE: 001

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP	STATUS	ACCESSIBLE TO THE PUBLIC
<input type="checkbox"/> District <input type="checkbox"/> Building <input type="checkbox"/> Site <input checked="" type="checkbox"/> Structure <input type="checkbox"/> Object	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Both	<input type="checkbox"/> Occupied <input checked="" type="checkbox"/> Unoccupied <input checked="" type="checkbox"/> Preservation work in progress	Yes: <input type="checkbox"/> Restricted <input checked="" type="checkbox"/> Unrestricted <input type="checkbox"/> No
PRESENT USE (Check One or More as Appropriate)			
<input type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Educational <input type="checkbox"/> Entertainment	<input type="checkbox"/> Government <input type="checkbox"/> Industrial <input type="checkbox"/> Military <input type="checkbox"/> Museum	<input type="checkbox"/> Park <input type="checkbox"/> Private Residence <input type="checkbox"/> Religious <input type="checkbox"/> Scientific	<input type="checkbox"/> Transportation <input type="checkbox"/> Other (Specify) None <input type="checkbox"/> Comments

4. OWNER OF PROPERTY

OWNER'S NAME: Mayor and Council of Lonaconing, a municipal corporation

STREET AND NUMBER: City Hall

CITY OR TOWN: Lonaconing STATE: Maryland CODE: 24

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.: Allegany County Courthouse

STREET AND NUMBER:

CITY OR TOWN: Cumberland STATE: Maryland CODE: 24

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY: Maryland Register of Historic Sites and Landmarks

DATE OF SURVEY: 1973 Federal State County Local

DEPOSITORY FOR SURVEY RECORDS: Maryland Historical Trust

STREET AND NUMBER: 2525 Riva Road

CITY OR TOWN: Annapolis STATE: Maryland CODE: 24

STATE	Maryland
COUNTY	Allegany
ENTRY NUMBER	
DATE	

SEE INS UCTIONS

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CONDITION	(Check One)					
	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input checked="" type="checkbox"/> Deteriorated	<input type="checkbox"/> Ruins	<input type="checkbox"/> Unexposed
	(Check One)			(Check One)		
	<input type="checkbox"/> Altered	<input checked="" type="checkbox"/> Unaltered	<input type="checkbox"/> Moved	<input checked="" type="checkbox"/> Original Site		
DESCRIBE THE PRESENT AND ORIGINAL (if known) PHYSICAL APPEARANCE						
<p>The George's Creek Coal and Iron Company Furnace No. 1 is located in the back yard of the Central Elementary School on East Main Street (Maryland Route 36), Lonaconing, Allegany County, Maryland. Lonaconing is approximately nine miles southwest of Frostburg, which is on U. S. Route 40.</p> <p>The George's Creek Coal and Iron Company was incorporated in 1836 by John H. Alexander and Philip T. Tyson of Baltimore. Construction of the furnace was begun in 1837 and finished in 1839. A stone set over the tympan, or working, arch bears the inscription "G.C.&I.Co./No.1/J.N.Harris/1837." Harris was the company's principal contractor for stone and brick masonry.</p> <p>The furnace is a truncated square pyramid 50 feet high, 50 feet square at the base, and 25 feet square at the top. The construction is of sandstone blocks reinforced by wrought iron binders. The furnace is built at the base of "Dug Hill", now known as "Scotch Hill." Some portions of the wing (retaining) walls remain. A stone arch springing from the back wall of the furnace connects it with what was formerly the top-house yard.</p> <p>The 16-foot tympan arch and the two tuyere arches are faced with bricks manufactured on the company's premises. Regrettably, the furnace has been used as an incinerator, and the arches are almost completely filled with ashes. The hearth and interior of the furnace therefore cannot at present be seen.</p> <p>Reliable contemporary sources report the conical interior of the furnace as 14 1/2 feet wide at the boshes and 5 1/2 feet wide at the trunnel head. The company had intended to line it with fire brick, but as a matter of expediency lined it with sandstone in order to get into blast more quickly. The sandstone inwalls were plastered with fire clay to protect them from the intense heat. It is possible that the interior of the furnace was relined with fire brick at some later date.</p> <p>A contemporary source also indicates that some of the interior stones of the furnace measured 6' x 4' x 2' and weighed as much as 7,200 pounds each.</p> <p>The cast-iron beams providing additional support for the furnace stack above the arches are visible, as are portions of the iron binders where the east wall has partially crumbled. The ends of the binders in the lowest tier are fastened with keys; the ends in the upper tiers are fastened with nuts.</p> <p>Until the iron operation was abandoned in the mid-1850's, the furnace complex included a top house, molding house, engine house, and two hot-air furnaces for heating the blast. None of these ancillary structures remains.</p>						

8. SIGNIFICANCE

M-VB-004

PERIOD (Check One or More as Appropriate)

- | | | | |
|----------------------------------------|---------------------------------------|--------------------------------------------------|---------------------------------------|
| <input type="checkbox"/> Pre-Columbian | <input type="checkbox"/> 16th Century | <input type="checkbox"/> 18th Century | <input type="checkbox"/> 20th Century |
| <input type="checkbox"/> 15th Century | <input type="checkbox"/> 17th Century | <input checked="" type="checkbox"/> 19th Century | |

SPECIFIC DATE(S) (If Applicable and Known) 1836-1856

AREAS OF SIGNIFICANCE (Check One or More as Appropriate)

- | | | | |
|--------------------------------------------------|-------------------------------------------------|----------------------------------------------------|------------------------------------------|
| <input type="checkbox"/> Aboriginal | <input type="checkbox"/> Education | <input type="checkbox"/> Political | <input type="checkbox"/> Urban Planning |
| <input type="checkbox"/> Prehistoric | <input checked="" type="checkbox"/> Engineering | <input type="checkbox"/> Religion: Phi- | <input type="checkbox"/> Other (Specify) |
| <input type="checkbox"/> Historic | <input checked="" type="checkbox"/> Industry | osophy | _____ |
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Invention | <input type="checkbox"/> Science | _____ |
| <input checked="" type="checkbox"/> Architecture | <input type="checkbox"/> Landscape | <input type="checkbox"/> Sculpture | _____ |
| <input type="checkbox"/> Art | Architecture | <input type="checkbox"/> Social/Human- | _____ |
| <input checked="" type="checkbox"/> Commerce | <input type="checkbox"/> Literature | itarian | _____ |
| <input type="checkbox"/> Communications | <input type="checkbox"/> Military | <input type="checkbox"/> Theater | _____ |
| <input type="checkbox"/> Conservation | <input type="checkbox"/> Music | <input checked="" type="checkbox"/> Transportation | _____ |

SEE INSTRUCTIONS

STATEMENT OF SIGNIFICANCE

The iron operation at Lonaconing was of primary significance because of its role in demonstrating that both coke and raw bituminous coal could be used as fuels in the manufacture of iron. Despite the fact that furnaces in England and Wales had long since adopted coke as their smelting fuel, most American founders until well beyond 1840 continued to use charcoal, which produced a high-quality iron suitable equally for the blacksmith's forge, for the larger-scale manufacture of wrought iron, or for castings. Frederick Overman, one of the principal American authorities on iron metallurgy in the mid-nineteenth century, described the George's Creek Coal and Iron Company furnace as "the first coke furnace, whose operation was successful [underscoring supplied], erected in this country." Several Pennsylvania ironmasters had attempted to use coke, but for various reasons had found their operations unsatisfactory and had either disposed of their works or had returned to the use of charcoal.

The George's Creek Coal and Iron Company began both smelting and casting in 1839, producing during the first year about 75 tons of good foundry iron per week. Castings included stoves, agricultural implements, repair parts for their own machinery, dowels for the lock walls of the Chesapeake and Ohio Canal, and a set of gates for the offices of a Baltimore insurance company. However, the furnace was remote from transportation. Neither the Baltimore & Ohio Railroad nor the Chesapeake and Ohio Canal was completed by the time the furnace went into blast. The only access to market was by wagon over an inadequate road from the works to the National Road.

In 1845 the company leased its furnace for seven years to Christian E. Detmold, a German-born engineer who had invented a method for using furnace gases to heat the blast. Detmold, according to the 1850 census, produced at the rate of 2,500 tons of pig iron per year when in blast, but he was frequently interrupted by law suits brought by the company in attempts to break the lease and regain use of the furnace.

By 1852, when Detmold's lease expired, the George's Creek Coal and Iron Company had become interested principally in the mining and transportation of coal, and leased the furnace to a Mr. Glenn of Baltimore. After 1852 the manufacture of iron was carried on intermittently. A new discovery of iron ore in 1854 led to resumption of operations after a long suspension. In October 1854 the furnace was turning out about 60 tons of iron per week. In 1855 the furnace produced only 1,860 tons of iron.

SEE CONTINUATION SHEET

NATIONAL REGISTER OF HISTORIC PLACES

INVENTORY - NOMINATION FORM

(Continuation Sheet)

COUNTY Allegany	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

AL-VI-B-004

(Number all entries)

Lonaconing Furnace

#8. SIGNIFICANCE continued

In view of the insufficient supply of ore and the manifestly greater profits from the coal trade, the furnace was blown out permanently in 1856.

The Lonaconing Furnace was also of significance in other technical respects. It was among the first in this country to use a machine-powered hot blast. A 60 H.P. steam engine and 5 steam boilers were transported by ship, railroad, canal boat, and wagon all the way from the West Point Foundry in New York.

In size and design the Lonaconing furnace was the model for the few other coke-fueled furnaces built before 1850. Among these were the 4 furnaces at Mount Savage in Allegany County, Maryland, and the 4 furnaces of the Great Western Iron Works at Brady's Bend in western Pennsylvania. The typical American blast furnace of the 1830's was seldom more than 30 feet high with a base 30 feet square. The Lonaconing Furnace was 50 feet high and 50 feet square at the base. Pictures of one of the Great Western furnaces show how much it resembles its predecessor at Lonaconing.

Apart from the engineering aspects, the pioneering operations of the George's Creek Coal and Iron Company were responsible for the establishment of the town of Lonaconing. They were in part responsible for the location of the Baltimore & Ohio railroad line from Cumberland to Piedmont (West Virginia), and in large measure responsible for the opening of the important coal trade in the George's Creek valley southwest of Frostburg. It was the coal trade of the George's Creek basin from Barrellville to Westernport which was responsible for the prosperity of western Maryland between the Civil War and World War I.

#9. BIBLIOGRAPHICAL REFERENCES continued

Chesapeake and Ohio Canal Company. Twelfth Annual Report. Washington: Gale and Seaton, 1840.

Detmold, C. E. George's Creek Coal and Iron Co. n.p. (1840).

Ducatel, J. T. Annual Report of the Geologist of Maryland, 1839. Annapolis, 1839, 8.

_____. Annual Report of the Geologist of Maryland, 1840. Annapolis, 1840, 34.

George's Creek Coal and Iron Company. George's Creek Coal and Iron Company. n.p., 1836. J. H. Alexander Papers, Maryland Historical Society.

STATE	
Maryland	
COUNTY	
Allegany	
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NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Continuation Sheet)

(Number all entries)

M-VI-B-004

Lonaconing Furnace

#9. BIBLIOGRAPHICAL REFERENCES continued

_____. Untitled report of directors, 1839. J. H. Alexander Papers, 1839-51, Maryland Historical Society.

Johnson, Walter R. Notes on the Use of Anthracite in the Manufacture of Iron. Boston: Charles C. Little and James Brown, 1841, 6-8.

Overman, Frederick. The Manufacture of Iron in all its Various Branches. Philadelphia, 1850, 175.

Pearse, John B. A Concise History of the Iron Manufacture of the American Colonies up to the Revolution, and of Pennsylvania until the Present Time. Philadelphia: Allen, Lane & Scott, 1876, 147-148.

Scharf, J. Thomas. History of Western Maryland. Philadelphia, 1882, II, 1446, 1500-1503.

Silliman, Benjamin. Extracts from a Report Made to the New York and Maryland [sic] Coal & Iron Company. London, 1838, 44.

Singewald, Joseph T., Jr. Report on the Iron Ores of Maryland with an Account of the Iron Industry. Maryland Geological and Economic Survey (Special Publication, Vol. IX, Part III). Baltimore: The Johns Hopkins Press, 1911, 141-142, 247-248.

Swank, James M. History of the Manufacture of Iron in All Ages. 2d ed. Philadelphia: American Iron and Steel Association, 1892, 256, 369-370.

United States Census Office. Seventh Census of the United States: 1850. Manuscript census of manufactures, 1850. Maryland State Library, Annapolis.

"Memoranda of Calculations and Determinations for the Construction of the Lonaconing Iron-Works and Daily Transactions." Privately-owned journal now being edited by Katherine A. Harvey with a view to publication. The journal, kept in turn by various superintendents (including John H. Alexander, Philip T. Tyson, and Charles B. Shaw), consists of two volumes covering the period June 1837-February 1840. It deals with construction of the furnace, molding house, engine house, millrace and dam, sawmill, store, superintendent's house, and houses for employees. It also records the development of coal and iron mines, tram roads, and surveys for a railroad, and from time to time mentions social and labor problems.

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NATIONAL REGISTER OF HISTORIC PLACES
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COUNTY

FOR NPS USE ONLY

ENTRY NUMBER

DATE

(Continuation Sheet)

(Number all entries)

ALVI-B-004

Lonaconing Furnace

#9. BIBLIOGRAPHICAL REFERENCES continued

Newspapers and periodicals:

Baltimore Sun, Aug. 7, 1841; Aug. 7, Aug. 12, and Oct. 27, 1854.

Cumberland [Md.] Miner's Journal, Dec. 3, 1852.

Hagerstown [Md.] Mail, May 24, 1839.

Hunt's Merchants' Magazine, Vol. V (July 1841), p. 53.

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Alexander, John Henry. Report on the Manufacture of Iron. Annapolis: William McNeir, 1840, 91-93, 144-45, 153, 163, 181.

_____. Untitled manuscript dated 1850 describing Alexander's role in the development of the George's Creek Coal and Iron Company. J. H. Alexander Papers 1839-1851, Maryland Historical Society.

SEE CONTINUATION SHEET

AL-V-B-004

10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY			O R	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES		
CORNER	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	
	Degrees Minutes Seconds	Degrees Minutes Seconds		Degrees Minutes Seconds	Degrees Minutes Seconds	
NW	° ' "	° ' "		39° 34' 13"	79° 58' 41"	
NE	° ' "	° ' "				
SE	° ' "	° ' "				
SW	° ' "	° ' "				

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: one-half acre

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE

11. FORM PREPARED BY

NAME AND TITLE:
Katherine A. Harvey, Historian (Retired)

ORGANIZATION: (for) Maryland Historical Trust DATE: Feb. 27, 1973

STREET AND NUMBER:
2525 Riva Road

CITY OR TOWN: Annapolis STATE: Maryland CODE: 24

12. STATE LIAISON OFFICER CERTIFICATION

NATIONAL REGISTER VERIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National State Local

Name Orlando Ridout IV
Orlando Ridout IV

Title State Liaison Officer
for Maryland

Date March 21, 1973

I hereby certify that this property is included in the National Register.

Director, Office of Archeology and Historic Preservation

Date _____

ATTEST:

Keeper of The National Register

Date _____

SEE INSTRUCTIONS

1185
400 000 FEET
(W. VA.)

4384

35'

4383

4382

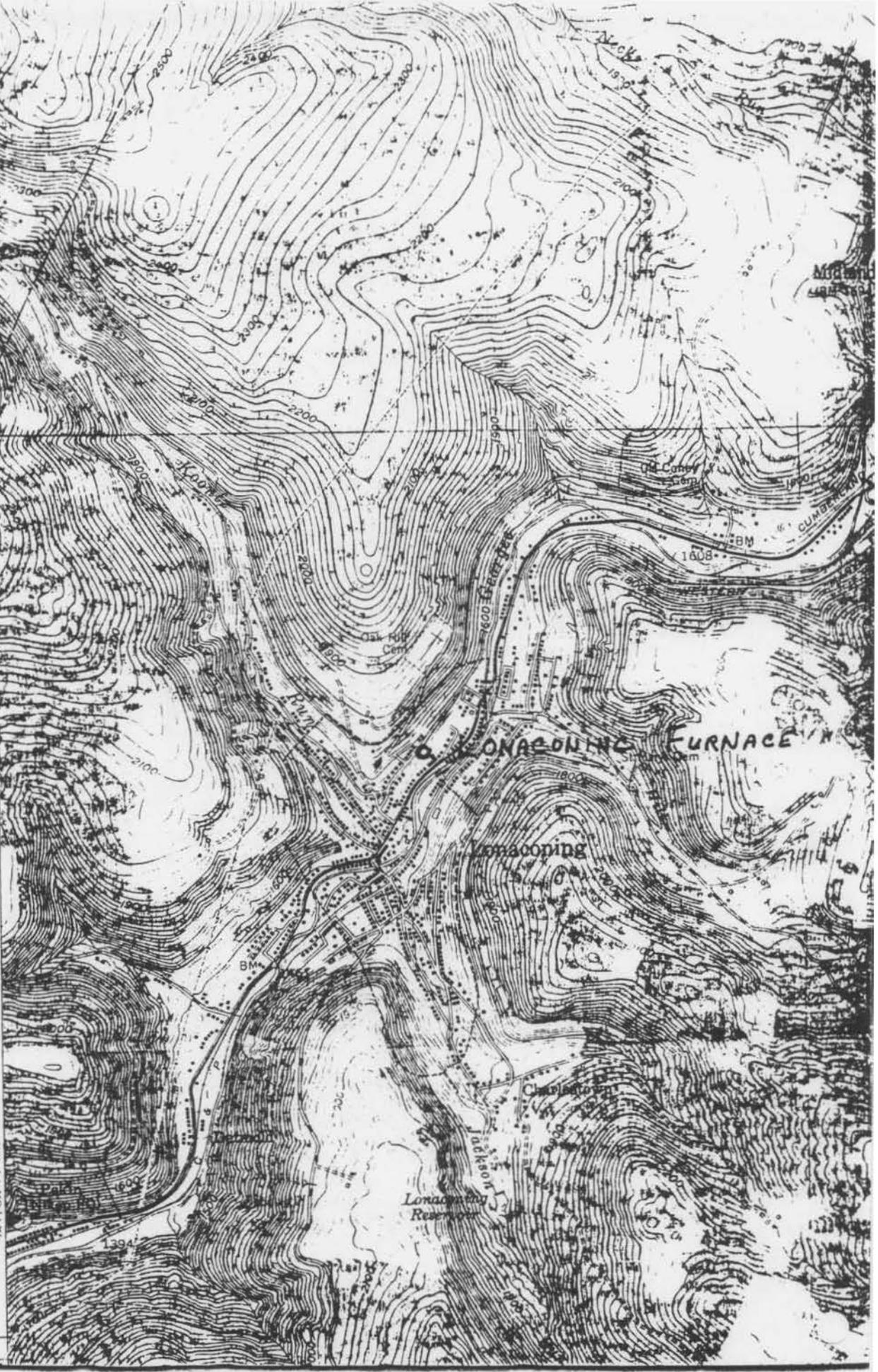
39° 34' 13"

9° 58' 41"

AL-VI-B-004

5163 II SE
(BARTON)

WESTERN J&T CO.
BARTON, W. VA.





AL-VI-B-004

Longmaning Furnace

916



AL-VI-B-004

116



AL-VI-004

116



Lancing Iron Furnace

AZ-VI-004

116



Lining Iron Furnace

114

George's Creek Coal & Iron Co.

AL-VI-004