Form No. 10-300 (Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC
Tredegar Iron Works

AND/OR COMMON
Tredegar Iron Works

2 LOCATION

STREET & NUMBER
500 Tredegar Street — NOT FOR PUBLICATION

CITY, TOWN
Richmond — VICINITY OF

CONGRESSIONAL DISTRICT
3

STATE
Virginia

CODE
51

COUNTY
Richmond

CODE
760

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
X DISTRICT	— PUBLIC	X OCCUPIED	— AGRICULTURE	— MUSEUM
— BUILDING(S)	X PRIVATE	— UNOCCUPIED	X COMMERCIAL	— PARK
— STRUCTURE	— BOTH	— WORK IN PROGRESS	— EDUCATIONAL	— PRIVATE RESIDENCE
— SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	— ENTERTAINMENT	— RELIGIOUS
— OBJECT	— IN PROCESS	X YES: RESTRICTED	— GOVERNMENT	X SCIENTIFIC
	— BEING CONSIDERED	— YES: UNRESTRICTED	— INDUSTRIAL	— TRANSPORTATION
		— NO	— MILITARY	— OTHER:

4 OWNER OF PROPERTY

Contact: F. D. Gottwald, Sr., Chairman of the Board

NAME
Ethyl Corporation-Richmond Division

STREET & NUMBER
P. O. Box 2189, 330 South Fourth Street

CITY, TOWN
Richmond — VICINITY OF

STATE
Virginia

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.
City Hall

STREET & NUMBER
Broad Street

CITY, TOWN
Richmond

STATE
Virginia

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
Virginia Historic Landmarks Commission; National Register of Historic Places

DATE
1969, 1970

X FEDERAL X STATE — COUNTY — LOCAL

541

DEPOSITORY FOR SURVEY RECORDS
Virginia Historic Landmarks Commission; National Register of Historic Places

CITY, TOWN
Richmond, Washington

STATE
Va., D. C.

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
__EXCELLENT	X DETERIORATED	__UNALTERED	X ORIGINAL SITE
__GOOD	__RUINS	X ALTERED	__MOVED DATE_____
X FAIR	__UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Situated between the north bank of the James River and the south bank of the James River and Kanawha Canal in downtown Richmond, Va., the Tredegar Iron Works District covers approximately 22 acres and contains numerous structures relating to the iron industry and dating from the late 1830's to World War I.

At its peak during the Civil War, the Tredegar Iron Works consisted of two rolling mills capable of producing as much as 14,000 long tons of iron yearly; two gun foundries able to cast cannon ranging in size from small mountain howitzers weighing several hundred pounds to 10-ton coastal defense guns; an ammunition foundry; a boring mill; a gun mill; a locomotive factory; a boiler shop; fully equipped machine shops; a brass foundry; a spike factory which housed a pattern and copper shop as well; carpenter and blacksmith shops; a company store; an office building; and housing for slaves employed by the company. The facility was supplied with pig iron and coal by horse-drawn canal boats plying the James River and Kanawha Canal that marks the plant's northern boundary.

Today, the sites of the brass foundry, blacksmith shops, and boiler shops are part of Tredegar Street, and the old gun foundry, locomotive shop, and Tredegar rolling mill stand in ruins. Four historic buildings survive, however. They are the somewhat altered Tredegar Office Building, the restored New Gun Foundry, the Spike Factory, and Company Store--all of which are constructed of red brick and have roofs of gray slate. They vary in condition from excellent to deteriorated. Located in one of Richmond's oldest industrial sections, the property currently serves as a storage and laboratory facility for the Ethyl Corporation, which purchased it in 1957 from Joseph R. Anderson's descendants. In recent years, Ethyl has launched an effort to preserve the most important historic structures. The New Gun Foundry has already been restored, and it is anticipated that other buildings will receive similar treatment in the near future.

The Tredegar Office Building. Presently, this north-facing, red brick structure consists of an original two-story rectangular main block, measuring 20 by 80 feet, and two irregularly shaped rear additions of relatively recent vintage. The nine-bay main block sits on brick foundations and has a full basement. Late in the 19th century, the original hipped gable roof was replaced with the present hipped one covered with gray slate. The roof is pierced at its apex by one interior, corbeled chimney, while an inside end chimney projects from the east end.

(continued)

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	__SCIENCE
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE
__1600-1699	__ARCHITECTURE	__EDUCATION	X__MILITARY	__SOCIAL/HUMANITARIAN
__1700-1799	__ART	__ENGINEERING	__MUSIC	__THEATER
X__1800-1899	__COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	__TRANSPORTATION
__1900-	__COMMUNICATIONS	X__INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)
		__INVENTION		

SPECIFIC DATES 1841-65 BUILDER/ARCHITECT Reev Davis and others

STATEMENT OF SIGNIFICANCE

Although best remembered for its Civil War achievements, the Tredegar Iron Works, due largely to the energetic management of Joseph R. Anderson, ranked as the third largest iron works in the United States in 1861. Since assuming direction of Tredegar in 1841, Anderson had greatly expanded its facilities and markets, giving the Confederacy, says his biographer Charles B. Dew, "a superb heavy industrial complex, capable of turning out large quantities of ordnance, munitions, armor plate, and a host of other desperately needed iron products."[1] As the war progressed Anderson, faced with a severe shortage of pig iron and coal, gradually purchased his own mines, furnaces, and ore boats with financial aid from the Confederate government, and he created what the distinguished economic historian Fritz Redlich has described as "one of the earliest far-reaching . . . vertical combinations in the American iron industry."[2]

During the war, Tredegar, says Dew, "performed monumental service for the Confederate armies, and more than any other single industrial concern, helped the South sustain four years of war."[3] "Quite possibly," says Civil War scholar Charles P. Roland, "the tenacity of Confederate authorities in fighting for Richmond was stiffened as much by the need for holding the Tredegar Works as for protecting the seat of government."[4] In addition to casting much of the South's heavy ordnance, Tredegar made the machinery for other Confederate arsenals and industrial

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[1]Charles B. Dew, Ironmaker to the Confederacy: Joseph R. Anderson and the Tredegar Iron Works (New Haven, 1966), 2.

[2]Cited in ibid., 289.

[3]Dew, Ironmaker to the Confederacy, 290.

[4]Charles P. Roland, The Confederacy (Chicago, 1960), 67.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Bining, Arthur Cecil, and Thomas C. Corchran, The Rise of American Economic Life, 4th ed. (New York: Charles Scribner's Sons, 1964).

(continued)

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY circa 22

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	18	284125	4157045
B	18	284280	4156925
C	18	284215	4156840
D	18	283625	4156760
E	18	283620	4156880
F	18	283840	4156995

VERBAL BOUNDARY DESCRIPTION

See last page of description.

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

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE: Ralph J. Christian, Historian — DATE: December, 1976

ORGANIZATION: American Association for State and Local History

STREET & NUMBER: 1400 Eighth Avenue South — TELEPHONE: 615-242-5583

CITY OR TOWN: Nashville, — STATE: Tennessee

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL ___ STATE ___ LOCAL ___

As the designated State Historic Preservation 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.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE — DATE

55

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST: DATE

KEEPER OF THE NATIONAL REGISTER

The entrance on the north facade features a one-bay, pedimented porch flanked by two Doric columns and two pilasters. It has metal balustrades and a gabled roof with ornamented pediment. The center-placed doorway has a rectangular, five-panel, wood door. Most windows are of the rectangular four-over-four sash variety and are set in segmentally arched openings which have brick lintels and stone sills.

Inside, the building has undergone extensive alteration over the years. Probably the only original feature is the symetrically molded door and window trim with corner blocks. The full basement has been divided into two large rooms which are used as testing facilities. Currently, the building is used as a laboratory and office facility.

The Spike Factory. This three-story, red brick structure with its pedimented gable roof of gray slate is the oldest extant building at Tredegar, probably dating back to the late 1830's. Measuring 50 by 110 feet, it sits on stone foundations which originally supported a silk mill constructed on the site late in the 18th century. In the 1863 fire the upper story burned, later being rebuilt in somewhat enlarged form. Window treatments vary. On the east and west sides of the building, first floor windows have rectangular arches; second floor openings have pointed arches; and third floor windows feature segmental arches. Many windows have been bricked-in, but those that remain have metal frames with four vertical rows of five lights each. The north and south facades feature brick pilasters and unadorned roof pediments of corbeled brick. Doorways and window openings have rounded arches and brick radiating voussoirs with keystones that rest on terra cotta imposts.

New Gun Foundry. Under construction from 1861 to 1863, this recently restored 1 1/2-story structure with its pilastered walls and reconstructed smokestack has brick foundations. The partially monitored, gabled roof with its brick pediments on the east and west ends is covered with gray slate and adorned on the north and south facades by gabled, wooden dormers with sixteen-over-sixteen sash windows. The purely functional appearance of the structure, which measures 70 by 120 feet, is broken somewhat by brick corbeling along the roofline, roof pediments with round windows on the east and west ends, and

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broadly arched windows and doorways. Windows and doors are set in semi-elliptical arches with brick radiating voussoirs with keystones. Most windows are of the twelve-over-twelve sash variety. The corbeled and ironbanded smokestack has a 7-foot-square base projecting from the north wall and rises almost 75 feet into the air.

At present, this building is empty. Efforts are underway to obtain and install a revervatory iron furnace similar to the type in use here during the Civil War. This facility has been carefully restored on the basis of research in company records and archaeological excavation.

The Company Store. Facing north from the immediate south bank of the James River and Kanawha Canal, this building is a one-story, rectangular-shaped structure of red brick. It measures 30 by 50 feet, has brick foundations and sits on a full basement. The stepped gable roof is covered with gray slate and is decorated with brick corbeling along the roof line. The north facade features decorative brick corbeling, while the south facade is plain. Most of the rectangular windows and doorways have been boarded up. Currently, the structure stands vacant.

Ruins. On the east side of the Spike Factory is the north wall and a portion of the west wall of the old gun foundry, which in later years served as the car wheel foundry. The north wall of the locomotive shop stands on the west side of the Spike Factory. About 75 feet north of the Spike Factory is the site of the rolling mill which is marked by rotting timbers and rusting metal.

Other Structures. Within the boundary of the designated property are a number of post-Civil War structures that do not contribute to its national significance. Along Tredegar Street near the cobblestone ramp leading to the historic area is a presently vacant shell foundry from the World War I era. It is a one-story structure covered with gray metal. North of this building are the metal-covered locomotive and cooper's sheds dating from the same period. Close to the north end of the Spike Factory is a one-story brick carpenter's shop dating from the 1890's. About 60 feet north of the Spike Factory are the remains of a turn-of-the-century water wheel

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and a brick power plant equipped with a Curtiss-type horizonal mechanical drive generator which originally powered the Petersburg, Va., street car line. About 150 years northwest of the Tredegar Office Building is a frame stable dating from the early 1900's. In addition to these buildings the landscape is dotted with several storage structures; some are of brick construction, and others are wood and metal.

Boundary Justification. The boundary of the designated area corresponds closely with boundary of the Tredegar facility at the time of its greatest national significance and includes approximately 22 acres and all extant historic Tredegar structures. This entire area is essential to preserving the character of the facility and to protecting it from encroaching commercial development from the east.

Boundary Description. As indicated in red on the accompanying maps [(1) U.S.G.S. 7.5' Series, Va., Richmond Quad., 1964, photorevised 1968 and 1974; (2) R. E. Johnson Sketch Map, TR002, 1970], a line beginning at the intersection of South Seventh Street with Tredegar Street and extending westward approximately 1,965 feet along the northern edge of the right-of-way of Tredegar Street as it follows the north banks of the Haxall Canal and the James River to a 5-foot-wide city-owned crosswalk; thence northwestward approximately 278 feet along the right edge of the crosswalk to a point on the south bank of the James River and Kanawha Canal; thence eastward approximately 1,764 feet along the south bank of the James River and Kanawha Canal to a point marking the northernmost extent of the legal property line; thence southeastward approximately 617 feet to the western edge of the right-of-way of South Seventh Street; thence southwestward approximately 279 feet along the western edge of the right-of-way of South Seventh Street to the point of beginning.

facilities and rolled the plates for the Merrimac or Virginia, the first American ironclad warship. According to Roland, the works also served as a "laboratory for making new and useful weapons."[5] Here, prototypes of the modern submarine, torpedo, and machine gun were developed, and John Mercer Brooke designed his improved rifled cannon.

Although Anderson made the Tredegar highly profitable again for a brief period after the war, financial reverses suffered in the Panic of 1873 saddled the company with a heavy debt. Unable to make the transition from iron to steel, it became a facility chiefly of local importance. Located on its original site until 1957, the Tredegar Iron Works, still in the Anderson family, continue in operation today as a small rolling mill in Chesterfield County near Richmond.

Situated between the north bank of the James River and the south bank of the James River and Kanawha Canal in downtown Richmond, Va., the Tredegar Iron Works District covers approximately 22 acres and contains structures dating from the late 1830's to World War I. Most significant are the somewhat-altered Tredegar Office Building, a rectangular-shaped, two-story structure of red brick with a hipped roof of gray slate and rear additions of relatively recent vintage; the restored New Gun Foundry with its pilastered walls, gabled roof, and reconstructed corbeled smokestack; the Spike Factory, a deteriorated three-story, pilastered structure of red brick with a gable roof, which also served as the cooper and pattern shop; and the Store, a one-story structure of red brick with stepped gables and gray slate roof. Nearby are the ruins of the old gun foundry, the locomotive shop, and the tredegar rolling mill, all of which along with the other structures date at least in part from the Civil War era. In addition the property contains a World War I vintage shell foundry, a stable, locomotive and cooper shed, a carpenter shop, a power plant, and several storage structures of more recent vintage. At present, the property serves as a research facility and storage area for the Ethyl Corporation.

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[5] Ibid.

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History

The tredegar Iron Works had its origin late in 1836 when Francis B. Deane, Jr., an experienced blast furnace operator, convinced a group of Richmond, Va., businessmen to finance construction of a plant in their city to exploit the growing demand for iron products resulting from the State's railroad boom. Named Tredegar in honor of its designer and builder Reev Davis, an engineer trained at the famous Tredegar Iron Works in Tredegar, Wales, the Virginia facility was chartered early in 1837 and soon began operations with a forge and rolling mill. Apparently prospering, Tredegar expanded in 1838 by absorbing the nearby Virginia Foundry Company. Soon, however, the company found itself in severe financial straits because of lingering effects of the Panic of 1837 and the ending of the Virginia railroad boom, all of which sharply reduced the demand for iron.

The company remained financially troubled until 1841 when Joseph R. Anderson, a native Virginian and West Point-trained engineer, was hired as commercial agent. Under his able leadership, the company regained its railroad market, obtained contracts with the Federal Government to supply the Navy with chain, cable, shot, and shell, and became a profit-making concern again. Two years later, Anderson leased the plant from its owners and in 1848 finally purchased it. Over the years he constantly strove to increase Tredegar's capacity and to develop it into a complete iron-making facility capable of manufacturing anything from nails to steamships.

Although Tredegar constructed at least one steamship and some marine engines and regularly made steam engines and sugar mills for Louisiana planters, its specialties were heavy ordnance and railroad products. Between 1844 and 1860, the works cast and delivered 881 cannon of various sizes to the U. S. Government. With the exception of rails, Tredegar produced a complete line of railroad products including locomotives, freight cars, wheels, axles, spikes, and iron bridges, selling them to roads in New England, New York, and Pennsylvania as well as the South.

Despite Tredegar's growth, Anderson increasingly found himself at a competitive disadvantage with northern iron works because of higher raw materials and labor costs in Virginia. Because of the decline of the Virginia iron industry generally,

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he had to import much of his pig iron and pay higher transportation costs, and to attract skilled workers he had to pay higher wages than his northern competitors. Anderson cut his costs somewhat by using skilled slaves, but generally, throughout the antebellum period, his products had to be sold at higher prices. He made up for this by offering liberal credit and accepting railroad securities as payment.

Because of these difficulties, Anderson in the 1850's became a southern nationalist, coming to view secession as a remedy to his and the South's economic problems. During the 1860-61 secession crisis, he actively solicited orders for munitions in the lower South and supplied large quantities of material to South Carolina. In fact, a 10-inch Tredegar mortar fired the first shot at Fort Sumter on April 12, 1861.

After Virginia seceded, Anderson offered to sell or lease Tredegar to the Confederate government, but the offer was refused. From 1861 until the end of the war, the works, says Dew, "performed monumental service for the Confederate armies, and more than any other single industrial concern, helped the South sustain four years of war."[6] In the early months of the war, Tredegar bore the entire burden of heavy cannon production, and by 1865 had cast 1099 field and siege guns for the Confederate forces, as well as large quantities of shot, shell, and cannon balls. In addition to its ordnance activities, the facility made the machinery for other Confederate arsenals and industrial plants like the huge powder works at Augusta, Ga., and rolled the plates for the Merrimac or Virginia, the first American ironclad warship. "Experiments in military and naval armaments" were also conducted at Tredegar, according to the eminent historians, Arthur Cecil Bining and Thomas C. Cochran.[7] Here, prototypes of the modern submarine, torpedo, and machine gun were developed, and John Mercer Brooke designed his improved rifled cannon.

(continued)

[6] Dew, Ironmaker to the Confederacy, 290.

[7] Arthur Cecil Bining and Thomas C. Cochran, The Rise of American Economic Life, 4th ed. (New York, 1964), 317.

From September 1861 to July 1862 Anderson served as brigadier-general in the Confederate Army before resigning to return to Tredegar where, says biographer Walter S. Grant, "he was more needed than in the field."[8] Faced with a severe shortage of pig iron and coal as the war progressed, Anderson with financial aid from the Confederate government gradually purchased his own mines, furnaces, and ore boats, creating what the distingished economic historian Redlich has described as "one of the earliest far-reaching vertical combinations in the American iron industry."[9] In order to feed and clothe the 2500-man work force, composed of slaves, convicts, paroled Union prisoners, and men detailed from the Confederate Army, Anderson scoured the South trading nails and other iron products for food and using a blockade runner to import cloth. Although successful in taking care of his workers, Anderson through no fault of his own never had enough pig iron to operate Tredegar at more than one-third of its full capacity.

Despite the pig iron shortage and a damaging fire in 1863, Anderson kept Tredegar Iron Works operating without interruption until Richmond fell on April 3, 1865. Undoubtedly, this facility, says historian Clement Eaton, was "one of the reasons for the stubborn defense of Richmond."[10] At the end of the war, the plant, which had escaped the last days of fighting relatively unscathed, was seized and occupied by Union troops.

By the end of 1865 Anderson had regained control of the property and with capital he had acquired from blockade running, cotton speculation, and the sale of his mines and blast furnaces had Tredegar operating again. From 1867 to 1873 the company enjoyed a period of unprecedented prosperity supplying the Nation's railroads with everything from spikes to locomotives. Because many of these roads went bankrupt in the Panic of 1873, Tredegar suffered heavy losses, being forced into receivership in 1876. Although Anderson eventually funded the company's

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[8]Walter S. Grant, "Joseph Reid Anderson," Dictionary of American Biography, I (New York, 1927), 269.

[9]Cited in Dew, Ironmaker to the Confederacy, 289.

[10]Clement Eaton, A History of the Old South, 2nd ed. (New York, 1966), 380.

debt and made it profitable again before his death in 1892, Tredegar never completely recovered. Saddled with a heavy debt, it was unable to make the transition from iron to steel and became a facility primarily of local importance, producing some railroad iron, ordnance, and horseshoes. A fire in 1952 caused severe damage to the works, contributing in large part to the 1957 decision to sell the old plant and move to a new location. Today, Tredegar Iron Works, owned by descendants of Joseph R. Anderson, operates a small rolling mill in Chesterfield County near Richmond, while the original grounds and surviving buildings serve as a research and storage facility for the Ethyl Corporation.

Continuation Sheet Tredegar Iron Item Number 9 Page one

Bruce, Kathleen, Virginia Iron Manufacture in the Slave Era (New York: Augustus M. Kelley, Publisher, 1968). Published originally in 1930.

Dew, Charles B., Ironmaker to the Confederacy: Joseph R. Anderson and the Tredegar Iron Works (New Haven: Yale University Press, 1966).

Eaton, Clement, A History of the Old South, 2nd ed. (New York: The Macmillan Company, 1966).

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Roland, Charles P., The Confederacy (Chicago: University of Chicago Press, 1960).

Thomas, Emory M., The Confederacy as a Revolutionary Experience (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971).